

Briefing for Kyogle Council



Transport
Roads & Maritime
Services

To: Kyogle Shire Council
From: RSTS Manager, Northern
Date: 16/07/2013
Priority:

RMS generated:

Title: Speed Review – MR141 - Kyogle to intersection with MR142 (Lismore to Murwillumbah Road)

Purpose:

To inform council on the intended change of the speed limits on MR141 - Kyogle to intersection with MR142 (Lismore to Murwillumbah Road).

Background:

MR141 was identified as requiring a speed zone review following a review of MR142 in 2011. Both roads are similar in regard to function, road side development and road and traffic characteristics. Both roads should have a consistent approach to speed zoning.

Review

Road Function

MR141 is a sub arterial road. Its main function is mobility however it requires a balance between this mobility function and the need to provide safe access. It is typified by low levels of traffic volumes including freight, commercial vehicles and public transport travel. It provides a reasonable standard of travel and serves intra-regional and some inter-regional functions.



Northbound approaching Cawongla village



Looking west between Kyogle and Cawongla

Road side development

Road side development along MR141 for the majority of its length is typically pastoral farming and rural properties.

Visible roadside development includes:

- A couple of residential dwellings and a few commercial premises adjacent to the road approximately 2km north of Kyogle,
- Cawongla village (800m of 50km/h zone) approximately 14km north of Kyogle, and
- Barkers Vale Public School with 40km/h zone and flashing lights approximately 22.5km north of the Kyogle.



Commercial development 2km north of Kyogle



Northbound approach to Barkersvale school zone

Road Characteristics

Alignment

MR141 is characterised by frequent changes in horizontal alignment. The first kilometre is flat and straight. The remaining 28 kilometres traverses mountainous terrain and the alignment is winding. The road features many closely spaced small radius horizontal and vertical curves. There are perhaps 4-5 straight sections where overtaking may occur.



Looking east between Kyogle and Cawongla



Eastbound leaving Cawongla village 50km/h zone

Delineation

Delineation is good along this road:

- Guideposts have been installed to delineate the road formation
- Centre and edge lines are installed for the majority of its length

- Curve warning / speed advisory signs ranging from 25-65km/h have been installed approaching all curves along this road
- Chevron Alignment Markers (CAMs) have been installed as appropriate
- Intersection warning signs have been installed in advance of intersections with limited sight distance as required
- Green background side road name signs combined with the warning symbol have been installed at four intersections with limited sight distance
- Pedestrian warning symbols and refuge island warning signs have been installed approaching Barkers Vale Public School
- School bus stop signs have been installed along the route



Side road warning sign for Bolziccoss Road



Looking east to Barkers Vale Public School access

Intersections

There are 18 intersections in the 100km/h zone between Kyogle and the Tweed Shire Council boundary. Sight distances are shown in the table below, starting at Kyogle:

Side road name	Sight distance NB	Sight distance SB	Req'd Safe Intersection Sight Distance (SISD)	Existing speed limit	Meets SISD for speed limit of	If not meet SISD – meets Stopping Sight Distance (SSD) of:
Fawcetts Plains Road	250m+	250m+	248m	100km/h	100km/h	
Homeleigh Road & Taveners Road	140m	170m	248m	100km/h	NB 70km/h SB 80km/h	NB 95km/h SB 100km/h
Quarry Road	200m	200m	248m	100km/h	90km/h	100km/h
Bolziccoss Road	100m	60m	248m	100km/h	NB 50km/h SB <50km/h	NB 80km/h SB 60km/h
Sargents Road	30m	80m at junction 150m form 10m back	248m	100km/h	NB <50km/h SB <50km/h	NB <50km/h SB 70km/h

Faraway Road & Atkins Road	100m	100m	248m	100km/h	50km/h	80km/h
Williams Road (1st occ.)	250m+	250m+	248m	100km/h	100km/h	
Stoney Chute Road	100m	200m	248m	100km/h	NB 50km/h SB 90km/h	NB 80km/h SB 100km/h
Link Road	210m	210m	248m	100km/h	90km/h	100km/h
Old Tweed Road (1st occ.)	150m	120m	248m	100km/h	NB 70km/h SB 60km/h	NB 90km/h SB 80km/h
Old Tweed Road (2nd occ.)	250m+	70m	248m	100km/h	NB 100km/h SB <50km/h	SB 60km/h
Buchanans Road	160m	150m	248m	100km/h	NB 70km/h SB 70km/h	NB 90km/h SB 90km/h
Lillian Rock Road	120m	120m	248m	100km/h	60km/h	90km/h
Williams Road (2nd occ.)	90m	180m	248m	100km/h	NB 50km/h SB 80km/h	NB 70km/h SB 100km/h
Caldera Lane	50m	50m	248m	100km/h	NB <50km/h SB <50km/h	NB 50km/h SB 50km/h
Lofts Pinnacle Road	70m	200m	248m	100km/h	NB <50km/h SB 90km/h	NB 60km/h SB 100km/h

Due to the winding alignment 85th percentile speeds are generally much lower than the posted speed limit past these intersections. Speed advisory signage ranges between 25km/h and 65km/h.

Road Access

Over the 28.8km length there are two separate one kilometre sections where there are six accesses. The remaining kilometre sections vary from nil to four accesses per kilometre. In accordance with the NSW Speed Zoning Guidelines this road could be considered suitable for an 80-100km/h speed limit.

Sight distance at these private accesses varies. There are several driveways that do not meet the minimum sight distance requirement for private accesses in accordance with AS2890.1 Off-street Car Parking.

Lane Width

The road is generally about 7-8m wide, with 3-3.5m lanes and 0.5m shoulders. Centre and edge lines have been installed for the majority of its length. Grass is beginning to obscure the sealed shoulder and edge lines in some locations.



Typical lane width between Kyogle and Cawongla



Typical lane width between Cawongla and MR142

Adjacent Speed Zoning

There is an 80km/h speed limit along MR142 (Lismore to Murwillumbah Road). This regional road is similar to MR141 (Kyogle to Murwillumbah Road) and consistency of speed zoning should be applied.

The northern end of MR141 is located within Tweed Shire Council area and is sign posted as 80km/h. It is 3.5km in length and it connects to MR142.

There are 50km/h speed limits along this road at Kyogle and Cawongla.

Barkers Vale Public School is located approximately 8km north of Cawongla. A 40km/h school zone is installed for approximately 1km. Flashing lights, fluorescent signs, patches and dragons teeth are all in good condition.



Start of school zone northbound



Start of school zone southbound

Letters to council from Barkers Vale Public School P&C Association (5 August 2010) and the Lillyfield community (28 March 2011) have requested the installation of a 50km/h zone at this location.

The existing 40km/h school zone is longer than recommended by the school zone guidelines and compliance is an issue. Traffic counts undertaken indicate that 12.5% are slowing to 40km/h during school zone times however approximately 8% of vehicles travelled at 100km/hr or greater. This was discussed at the Kyogle Shire Council LTC in October 2011 where the Police representative advised that patrols would be tasked to the area.

Development includes the school (which is located on both sides of the road), a sports ground, commune style residential development that cannot be seen from the road and a café. There is no kerb and gutter and no street lighting to indicate an urban road environment. There is however a pedestrian refuge with raised central median islands located adjacent to the school on a crest.



Looking north approaching café access on left



Looking south approaching café access on right

Development at this locality is similar to the Mount Burrell area on the Lismore Murwillumbah Road (MR142) where a 50km/h speed limit was installed in 2011.

Hazards

A pedestrian refuge with raised central median islands is located on a crest adjacent to the Barkers Vale Public School. The off-set between the line marking and the raised islands is minimal and no lighting has been provided. It is suggested that lighting be installed to improve safety.



Looking north approaching the refuge



Looking south approaching the refuge

Crash data

Crash data for MR141 for the period 2007 to 2012 showed that there were a total of 62 crashes. This included two fatal crashes, 38 injury crashes and 11 non-casualty crashes. The data also showed that:

31 crashes (50%) identified speed as a contributing factor,

46 (74%) were off-road or out of control on straight or curve, and

50 crashes (80%) were single vehicle crashes.

This suggests that motorists are travelling too fast for the road environment though not necessarily speeding.

Traffic Characteristics

Traffic Patterns

This road is typified by low traffic volumes, including freight, commercial vehicles and public transport. Anecdotal evidence suggests that this road is an alternative link into south east Queensland, with traffic volumes increasing recently when the Lyons Road was closed.

Significant tourist traffic was noted during the inspections, including groups of motorcycles, campervans and car/caravan combinations.
 A comparative travel time analysis was undertaken comparing the existing speed limits with the proposed speed limits. See tables below:

No	Existing				Proposed			
	km/h	m/s	Dist(m)	Time	km/h	Dist (m)	m/s	Time
1	100	27.8	12400	446.4	100	900	27.8	32.4
2	50	13.9	800	57.6	80	11500	22.2	517.5
3	100	27.8	12200	439.2	50	800	13.9	57.6
4	80	22.2	3600	162.0	80	7900	22.2	355.5
					50	800	13.9	57.6
					80	7100	22.2	319.5
TOTAL (min):				18.4	22.3			

This analysis indicates that it currently takes 18.4 minutes to travel from Kyogle to the intersection with the Lismore Murwillumbah Road (MR142). If the existing 100km/h sections were reduced to 80km/h and a 50km/h zone introduced adjacent to Barkers Vale Public School it is calculated to take an extra 3.9 minutes to travel the same 30.1km length.

Of course the majority of motorists generally do not travel at 100km/h due to the mountainous terrain and winding alignment. The 85th percentile speeds were recorded as 73.4km/h and 90km/h. Advisory speeds through the curves range between 25km/h and 65km/h.

These factors suggest that existing vehicle speeds are significantly lower than 100km/h for the majority of the length and that existing travel time is likely to be greater than that calculated. During inspections actual travel time was monitored and found to range between 25 minutes and 28 minutes depending on whether free flow conditions were available.

85th Percentile Speed

Traffic data supplied by Kyogle Council indicates that in 2007 traffic volumes 300m east of Collins Street Kyogle were approximately 1600 vehicles per day (vpd) and the 85th percentile speed was recorded as 90km/h. This is located on a straight section of road where free speeds would be achieved. See photo below.

In 2006 traffic volumes 50m west of Lofts Pinnacle Road were approximately 550vpd and the 85th percentile speed was recorded as 73.4km/h. This is located on the mountainous section of the road where speeds are limited due to the alignment. See photo below. This is fairly indicative of travel speed along the majority of this road.



300m east of Collins Street, Kyogle



50m west of Lofts Pinnacle Road

Pedestrians and Cyclists

No pedestrians or cyclists were observed during the inspections. It is assumed that this type of activity would be low due to the topography and the distances that are required to be traversed.

Summary Discussion

In accordance with the NSW Speed Zoning Guidelines, on 15 May 2013 RMS undertook a site inspection with Kyogle Shire Council officers to collect data and discuss local issues.

An additional meeting was held with Council on 26 June 2013 to discuss the report recommendations and to determine an appropriate location for the proposed 50km/h zone at Barkers Vale.

The speed zone review report was tabled at the Kyogle Shire Council Local Traffic Committee (LTC) meeting on 9 July 2013 to discuss the proposed outcomes with Council, Police and the Local Member. Support by the local Police was given to the recommendations.

This proactive speed zone review has been undertaken by RMS following a reduction from 100km/h to 80km/h on an adjacent regional road (MR142). Road function, roadside development, road and traffic characteristics and crash history are similar on these roads and consistency of speed zoning should be applied.

Crash analysis demonstrates a high number of single vehicle speed related crashes. This indicates that motorists are travelling too fast for the road environment though not necessarily speeding.

Sight distance at most intersections and accesses is below that required for the prevailing 100km/h speed limit (although 85th percentile speeds are generally lower). A reduction in speed limit would improve safety at these conflict points.

Comparative travel time analysis undertaken indicates that it currently takes 18.4 minutes to travel from Kyogle to the intersection with the Lismore Murwillumbah Road (MR142). If the existing 100km/h sections were reduced to 80km/h and a 50km/h zone introduced adjacent to Barkers Vale Public School it is calculated to take an extra 3.9 minutes.

Of course the majority of motorists generally do not travel at 100km/h due to the mountainous terrain and winding alignment. The 85th percentile speeds were recorded as 73.4km/h and 90km/h. Advisory speeds through the curves range between 25km/h and 65km/h.

These factors suggest that existing vehicle speeds are significantly lower than the sign posted speed limits for the majority of the length and that existing travel time is likely to be greater than that calculated. During inspections actual travel time was monitored and found to range between 25 minutes and 28 minutes depending on whether free flow conditions were available.

Overall a reduction from 100km/h to 80km/h is considered appropriate.

Another issue raised by council during the May sight inspection was the community requests for a 50km/h speed limit on Kyogle Murwillumbah Road (MR141) at Barkers Vale.

Development includes the school (which is located on both sides of the road), a sports ground, commune style residential development that cannot be seen from the road and a café. There is no kerb and gutter and no street lighting to indicate an urban road environment. There is however a pedestrian refuge with raised central median islands located adjacent to the school on a crest. This is considered a hazard, particularly at night time, and it is suggested that flood lighting be installed to improve safety.

Development at this locality is similar to the Mount Burrell area on the Lismore Murwillumbah Road (MR142) where a 50km/h speed limit was installed in 2011.

The existing 40km/h school zone at Barkers Vale is 1km in length. This zone is longer than recommended by the school zone guidelines and compliance is an issue.

Therefore it is suggested that the 40km/h school zone be reduced in length to approximately 500m. The new location is subject to approval by the Intelligent Transport System Section of RMS which is responsible for the installation of the flashing lights. The lights are solar powered and there are specific lighting conditions that must be met. This will require relocation of the school zone flashing lights signs, patches and dragons teeth.

Other changes proposed include rationalisation of the existing warning signs on the approach to the school bus stop and pedestrian refuge, installation of a 'Barkers Vale' town name signage, installation of an 800m long 50km/h zone and installation of 50km/h AHEAD signs.

Recommendations

That the existing 100km/h speed limit be reduced to 80km/h

From: 180m north of Fawcetts Plains Road

To: 250 south of Cawongla Road, Cawongla

This is a total distance of 11.2km

That the existing 50km/h zone at Cawongla be retained

From: 250m south of Cawongla Road, Cawongla

To: 500m north of Cawongla Road, Cawongla

This is a total distance of 800m

That the existing 100km/h speed limit be reduced to 80km/h

From: 500m north of Cawongla Road, Cawongla

To: 360m south of Barkers Vale Public School access

This is a total distance of 7.8km

That a new 50km/h zone be installed at Barkers Vale

From: 360m south of Barkers Vale Public School access

To: 460m north of the Barkers Vale Public School access

This is a total distance of 820m

That the existing 100km/h speed limit be reduced to 80km/h

From: 460m north of Barkers Vale Public School access

To: Tweed Shire Council boundary

This is a total distance of 3.8km

That the existing 80km/h speed limit be retained

From: Tweed Shire Council boundary

To: Intersection with Lismore Murwillumbah Road (MR142)

This is a total distance 3.5km

That the existing 40km/h school zone adjacent to Barkers Vale Public School be reduced in length and the existing signposting be rationalised in consultation with council.

The new 40km/h zone will be installed adjacent to the school

From: 220m south of Barkers Vale Public School access

To: 280m north of Barkers Vale Public School access

This is a total distance of 500m