

SPEED LIMITS AND ROAD SAFETY IN REGIONAL NSW

Organisation: Strathfield Council

Date Received: 16 June 2022

On behalf of Strathfield Municipal Council, I would like to make the following submission for the inquiry into Speed Limits and Road Safety in Regional NSW.

Summary

Existing speed limits are sufficient to meet travel time requirements while maintaining reasonable driver speeds, where the majority of drivers already use a 10% 'buffer' to the speed limit when travelling, so speed limits should be maintained as they are, especially to maintain a consistent flow of traffic and not increase on-road hazards; however, variable speed limits may be suitable to control vehicle speeds based on weather conditions, traffic conditions etc., but these must be assessed on a case-by-case basis for areas, must not be in place for road lengths longer than necessary, must not regularly change, and must be clearly signposted to attract driver attention to ensure that speeds varying from regular signposted speeds are noted.

While an argument could be made that speed limits can be increased due to the accelerating development of vehicle technologies and implementation of road infrastructure increasing road safety, any increase in existing speed limits must wait until a sufficient number of vehicles possess this improved technology and a sufficient number of roads have been upgraded with this infrastructure. The current goal is for these improvements in technology and infrastructure to reduce current accident rates to 0 (or as close as possible), and speed limits must not be increased until this goal is achieved.

Impact of speed limits and travel times on driver behaviour and safety

Based on experience and observation, existing speed limits are sufficient for meeting travel time requirements while managing excessive speeds on rural roads. Existing speed limits provide a reasonable speed for drivers to reach their destinations in sufficient time, where drivers often commit to trips by car that take a day or less to complete (longer trips are usually managed via aeroplane or train – exceptions apply, including long road trips that take place over several weeks or months) – if speed limits were marginally increased by 10 or 20 km/hr (anymore and speed limits would be dangerously high), this would only shave 10%, maybe 15%, off the total travel time. This is a small sacrifice when weighed against the impact on driver behaviour of higher speed limits.

I have often observed vehicles (approximately) using a 10 km/hr 'buffer' to the posted speed limit, travelling at 10 km/hr higher than the posted speed limit (some vehicles even use a 20 or occasionally 30 km/hr 'buffer'). As such, increasing speed limits would most likely maintain this speed 'buffer', resulting in even higher unprecedented (average) speeds on roads that may contribute to accidents – where people speed significantly higher than the posted speed limit, they will do this regardless of the speed limit and so these drivers are outliers – as such, speed limits should be maintained to manage vehicle speeds.

In addition to the trade-off of safety vs travel time, some drivers may not use the higher speed limit, instead maintaining current speeds limits as their maximum due to not feeling comfortable at these higher speeds. This would result in a 'pulsing' traffic flow of constant overtaking and lane-changing by faster vehicles to avoid slower vehicles, thus potentially creating more hazards on the road itself in accelerating, slowing, and lateral-moving vehicles. This increased shuffling on the road may be counter-productive and contribute to more vehicle accidents.

Use of variable speed limits

Variable speed limits may be suitable for use in rural areas (predominantly single-lane with occasional overtaking lanes) if adverse weather conditions, traffic conditions etc. arise at any point that more significantly affect these rural roads than highways (highways with 110 km/hr, at least 2 lanes of travel in the same direction, and a median separating opposing traffic flows are rarely affected by adverse weather or traffic conditions, and if they are then slower traffic may use the left lane while faster traffic can overtake in the right lane).

Such conditions may include heavy fog (contributes to more head-on collisions on 2-way single carriageway roads), flooding (rural roads often lower in altitude than highways and are more susceptible to flooding from adjacent land), a higher heavy vehicle presence due to seasonal activities (heavy vehicles may use the left lane on highways to remain out of the way), or a deteriorated road surface (highways consistently maintained due to importance and rarely suffer from this).

However, if variable speed limits are to be used to address such concerns, they must be assessed on a case-by case basis such that an appropriate speed is implemented that does not significantly deviate from the posted speed limit (except in exceptional circumstances) and so the varied speed limit is in place for a suitable length of road.

The variable speed limit must not significantly deviate from the posted speed limit as too big a deviation (lower than the regular posted limit) may either result in drivers ignoring the variable limit if they do not observe anything to make them believe the lower speed is warranted or may alter the road operation adversely such that the altered road conditions contribute to an unsafe road environment, especially for regular users of these sections of road that become accustomed to the road conditions remaining a particular way.

Also, the variable limit must only remain in place for the minimum length of road as an extended road section with a variable limit lower than the posted speed limit may cause drivers to become impatient and resume travelling at the regular posted speed limit, thus contributing to speeding in these variable speed areas.

Furthermore, areas with variable speed limits must:

- Have a permanent varied speed (e.g. 100 km/hr zone has an alternative varied speed of 60 km/hr in certain conditions);
- Have consistent varied speeds for recurring seasons or events (e.g. vintage season in rural areas has a varied speed of 80 km/hr instead of 100 km/hr for 3 months of the year at the same time every year); or
- Maintain varied speeds for significant periods of time such that the road condition based on speed does not regularly change (e.g. speeds changing by 10, 20, or 30 km/hr week to week or every couple of weeks) as this would contribute to speeding especially by drivers regularly travelling through the same area that recently experienced a different speed limit in this area (these regular drivers may also ignore the varied speeds if they change too often)

Finally, where variable speed limits are used they must be clearly signposted (on both sides of the carriageway, flashing lights etc.) to ensure drivers observe the altered speed. Where variable speed limits significantly deviate from the regular posted speed limit (e.g. 60 km/hr or lower variable limit deviating from a 100 km/hr limit), an intermediate variable speed zone should be used (e.g. 80 km/hr) for a sufficient length of road to gradually reduce driver speed to ensure driver compliance with variable speed zones.

The use of variable speed limits must be carefully considered and implemented, similarly to speed limits implemented for roadworks zones where the limit depends on several factors, the limit is appropriately signposted with advance warning and gradual decrease in driver speeds, and the limit is in effect for a road length no longer than necessary. Such variable speed limits must be reviewed and approved by Local Traffic Committees with all advice from Committee members taken into consideration in implementing the variable speed zones.

Impact of improved vehicle technology and infrastructure

While improved vehicle technology and infrastructure contributes to less vehicle accidents, in line with this submission, current speed limits should be maintained such that technology and infrastructure improvements work to minimise the current gap between existing and desired road accidents. The improvement of technology and infrastructure should not be met by a corresponding increase in speed limits that maintains current road safety and hence maintains the current number of accidents each year – existing speed limits must remain in place until vehicle technology and road infrastructure improve to provide a minimal level of accidents before they can be considered to be increased.

Improvements in vehicle technology include lateral sensors that alert the driver to vehicles in their blind spot for lane-changing purposes, lane departure warning and assist to prevent vehicles veering on the road, and automated emergency braking that helps prevent or reduce the severity of rear-end collisions. While these technologies help prevent or reduce the severity of collisions, they still largely rely on human judgement and reaction, and even that is only true where the technologies are activated by the driver. As such, the increase of speed limits in line with these improved technologies should not be based on the technology itself but on the driver of the vehicle, and this is something that has largely remained constant and hence so should speed limits on rural roads.

Additionally, these technologies are only found in vehicles created in the last 7 years or so, where many vehicles on the road do not possess even 1 of these technologies and hence solely rely on human judgement, reaction, and behaviour. Therefore, an increase in rural speed limits must wait until a significant majority of vehicles on the road possess these technologies, and even then the impact of these technologies on accident rates must be assessed to determine if an increase in rural speed limits is viable while still reducing road accident rates.

Similarly to vehicle technology, improvements in infrastructure like edge- and centre-line rumble strips, more overtaking lanes, and upgraded road surfaces contribute to fewer and less severe road collisions by providing improved road conditions (rumble strips, upgraded road surfaces) and discouraging negative driver behaviour (more overtaking lanes providing more opportunities for safer overtaking). However, again the efficiency of these improvements still largely rely on human judgement, reaction, and behaviour.

Again being compared with improvements in vehicle technology, this infrastructure is still not in place in many rural areas, particularly more remote areas. As such, an increase in speed limits in rural areas must wait until this infrastructure is implemented in a significant majority of rural areas, and even then the impact of this infrastructure on accident rates must be assessed to determine if an increase in rural speed limits is viable while still reducing road accident rates.

Conclusion

Existing speed limits in rural areas have been in place for a long time and as such any change in these limits, either an increase or decrease, must be carefully considered.

While it could be argued that since these speed limits have been in place for some time and as such could be increased, existing driver behaviour of using a speed 'buffer' such that they travel at speeds 10-20% higher than the posted speed limit already sees many drivers travelling at these higher speeds. So there is no need to increase speed limits, and also a safety reason to not increase speed limits as by using this 'buffer' drivers could be travelling at speeds of 130 km/hr or upwards. Where speeds would be increased to reduce driver travel time, this would at most reduce travel times by 1-1.5 hours, or in some exceptional cases 2 hours, and this trade-off of a minor reduction in total travel time for increased speeds that may potentially lead to higher accident rates is not warranted.

Where variable speed limits are considered for use, they must firstly be carefully considered and designed to be suitable for the altered road conditions they are being used for, and then they must be appropriately reviewed and approved by Local Traffic Committees. In implementing the variable speed zones, they must be sufficiently signposted to make drivers aware of altered road conditions and the speed zones must be appropriately monitored to ensure they are effective and do not contribute to unsafe road conditions.

While recent years have seen an acceleration in improved vehicle technologies and infrastructure, these improvements should not allow an increase in rural speed limits but rather should be used to reduce accident rates to 0 or as near as possible. These improvements must primarily be used to reduce accident rates on roads and must continue to be implemented such that accident rates are reduced as much as possible. Only once desired accident rates have been achieved should an increase in rural speed limits be considered, and even then an increase in speed limits must be carefully considered with human judgement, reactions, and behaviour at the forefront of the proposal as opposed to technology and infrastructure.

In summary, it is recommended that speed limits in rural areas do not be increased beyond existing limits.

Thank you,

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Strathfield Municipal Council