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ROADSIDE HAZARD

Strategic Outcome:	Sustainable natural and built landscapes	
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Date for Review:	16 April 2025	
Responsible Officer:	Director Technical Services	
Document Control:	Replaces and revokes the Roadside Hazard Policy adopted 18 January, 2012	
Delivery Program Link:	1.3.1.5 Maintain the safety of Council roads and walkways	

1. POLICY STATEMENT

Berrigan Shire Council is responsible for the care and management of 1367km of roads within its council area. These roads are of varying standards and carry traffic volumes from less than 10 vehicles per day to greater than 6,000 vehicles per day for the Main Road between Barooga and Cobram. By far the greatest length of road within the Shire is rural road with a 100km/hr default speed limit.

In managing this road network one of the main objectives is to optimize the safety to road users within the limits of Council's available resources.

A large percentage of motor vehicle accidents on rural roads are single vehicle run off road incidents with a significant number of these resulting in vehicle rollovers or collision with roadside objects such as trees or poles. The risk of collision with these objects is reduced by providing a clear zone distance from the edge of the traffic lane to the object with a trafficable batter slope and the generally accepted clear zone distances are set out in the *Austroads Guide to Road Design Part 6 - Roadside Design, Safety and Barriers, Section, Table 4.1*. Table 4.1 indicates that for a 100km/hr road and a batter slope of 4:1 to 5:1 and carrying less than 750 vehicles per day, a clear zone of 10.0m is required.

Given the width of many of the road reserves within the Shire are only 20m and the extent of native vegetation existing on the road reserves, this national guidance is never going to be achievable or desirable to implement clear zones of this calibre.



As a compromise and following consultation with its community, Berrigan Shire Council has adopted a local response based on the relative risk associated with lower traffic volumes and in accordance with Council's risk management policy and framework.

2. PURPOSE

Berrigan Shire Council has 1,367km of road to manage and much of this has 100km/hr speed limits and contains millions of roadside hazards of varying risk ratings.

It is not economically possible to treat or remove all of these hazards and therefore a risk evaluation process must be developed and used to determine scope and priorities for these works.

This policy provides a local response to roadside hazard management based on relative risk and traffic volumes that optimizes the safety to road users within the limits of Council's available resources.

3. SCOPE

The scope of this Policy is limited to roads that have a 100km/hr speed limit as they constitute the majority of road length and are considered to be the highest risk due to vehicles travelling at higher speed.

4. DEFINITIONS

AADT – Annual Average Daily Traffic

Roadside hazard – Is anything that can cause harm to a person/vehicle travelling if transgressing from the traffic lane and includes: trees; poles; bridge or culvert edges; steep batters and cuttings.

Clear Zone – The required distance from the edge of the traffic lane to a roadside hazard

VPD – Vehicles per day



5. POLICY IMPLEMENTATION

5.1 Assessment and treatment

Berrigan Shire has 1,367km of road to manage and much of this has 100km/hr speed limits and contains millions of roadside hazards of varying risk ratings. It is not economically possible to treat or remove all of these hazards and therefore a risk evaluation process must be developed and used to determine priorities for these works.

In developing this process a number of underlying assumptions and parameters must be accepted, and the outcome must be manageable and workable. These assumptions and parameters are detailed in the consideration of different road classifications and different types of hazards below.

5.1.1 Scope of assessment

The scope of this assessment has been limited to roads that have a 100km/hr speed limit as they constitute the majority of road length and are considered to be the highest risk due to vehicles travelling at higher speed.

5.1.2 Road classifications

Berrigan Shire Council's road classifications are set out in **Table 5.1 Road Hierarchy** - shown below:



Table 5.1 - Road Hierarchy

Road Classification No.	Road Classification	Standard	Pavement/Seal Width	Lane Width	Typical Warrants				
					Traffic Counts	% Heavy Vehicles	No. of Homes/Km	Mail Run	School Buses/Day
	Highways (RTA Determined)								
1	Regional Roads	Seal	8.0m	3.5m	>300 AADT	n/a	n/a	n/a	n/a
2	Arterial Roads	Seal	8.0m	3.5m	>300 AADT	>20%	n/a	n/a	n/a
3	Collector Roads	Seal	7.5m	3.25m	>80 AADT	>20%	>3 homes/km	>1	>1
	Collector Roads	Gravel	6.5m	3.25m	<80 AADT				
4	Residential Access	Seal	6.2m	3.1m	>80 AADT	>20%	>3 homes/km	>1	>1
	Residential Access	Seal	6.2m/3.5m	Shared 3.5m	<80 AADT		1 or more homes/km		
	Residential Access	Gravel	6.2m	Shared 3.5m	<80 AADT		1 or more homes/km		
5	Property Access	Seal	6.2m	3.1m	>80 AADT	>30%	No homes		
	Property Access	Gravel	5.0m	Shared 3.5m	<80>10 AADT	>20%	No homes		
	Property Access	Formed	5.0m	Shared 3.5m	<10 AADT		No homes		
	Property Access	Unformed	n/a		<1 AADT		No homes		
NOTES:									
	1. For a road to be considered for upgrading from formed to gravel or gravel to seal it must meet traffic count warrants plus 1 of the other 4 warrants.								
	2. The standard, Residential Access – Seal <80 vpd is only relevant to roads that are already sealed and do not meet the warrants for a sealed road. The intent is to maintain the existing seal width and provide pavement to 6.2m width including shoulder.								
	3. Priority for works will be given to roads meeting the most warrants.								
	4. Urban streets construction standards determined on an individual basis depending on site conditions, traffic and in accordance with the Council's Subdivision Code.								



Traffic volume is used as the key variable in determining the probability of an accident and therefore it is necessary to set the maximum projected traffic volumes for a particular class of road. The adopted volumes and classifications are set out in **Table 5.2** below:

Road Classification	Design AADT (vpd)	Design Lane Width (m)
Sealed Roads		
Regional Roads	1500	3.5
Arterial Roads	800	3.5
Collector Roads	300	3.25
Residential Access	200	3.1
Residential Access	Actual<80	Shared 3.5
Property Access	200	3.1
Property Access	Actual<80	Shared 3.5
Unsealed Roads		
Collector Roads	100	3.25
Residential Access Roads	100	Shared 3.5
Property Access Roads	100	Shared 3.5

For unsealed roads and sealed roads <80vpd it is assumed that if the traffic count (AADT) exceeds 100 vpd that the road will be upgraded to sealed standard and the roadside hazards addressed accordingly at the time of construction. This process will also be subject to availability of resources, road side vegetation value assessment and prioritization processes of Council decision making.

5.2 Clear zones

The clear zone is measured from the outside of the adjacent traffic lane, however, given the wide variation in widths of Council's current road network it is considered that it would be more appropriate for most purposes to measure from the centre of the road and add the design lane width for that road type as set out in Table 5.1 above.

The width of clear zone required is directly related to the slope of the ground and as the majority of Berrigan Shire area is relatively flat and most roads have been constructed in a fill scenario, it has been assumed that the batter slopes within the clear zones will be 4:1 or flatter. Treatments for areas where the batter slope is steeper than 4:1 or the road is constructed in cut are considered in later discussion on Batter Slope hazards.

The width of clear zone is also directly related to alignment and for the following calculations it is assumed that the alignment is straight or has curve radii of 900m or more. Treatments for curves of smaller radii are considered in later discussion on curve hazards.



The Clear Zone widths as set out below in Table 5.3 are adopted for use on roads managed by Berrigan Shire Council.

For the lower classified roads with minimum Clear Zones of 2m the actual Clear Zone width will often be determined by the need to maintain drainage along the edge of the road formation. Sufficient width will need to be kept clear to allow maintenance of the drains.

Road Classification	Design AADT (vpd)	Design Lane Width (m)	Minimum Clear Zone (m)	Minimum Clear Zone + Lane Width (m)
Sealed Roads				
Regional Roads	1500	3.5	5.0	8.5
Arterial Roads	800	3.5	5.0	8.5
Collector Roads	300	3.25	3.0	6.25
Residential Access	200	3.1	2.0	5.1
	Actual <80	Shared 3.5	2.75	4.5
Property Access	200	3.1	2.0	5.1
	Actual <80	Shared 3.5	2.75	4.5
Unsealed Roads				
Collector Roads	100	3.1	2.0	5.1
Residential Access Roads	100	Shared 3.5	2.75	4.5
Property Access Roads	100	Shared 3.5	2.75	4.5

In relation to specific hazards within the clear zones the following management principles will be followed:

5.2.1 Batters

For fill batters a minimum grade of 4:1 shall be provided where possible for the area from edge of traffic lane to the required offset for minimum Clear Zone plus design lane width set out in Table 5.3. Guard fence can be considered for protection where this minimum grade cannot be achieved. Resources will limit the amount of remedial earthworks and guard fencing that can be carried out and an ongoing program will be developed to address all identified hazards on a risk management basis.

For cut batters a minimum clearance distance for drainage shall be provided and all batters must be trimmed to have smooth faces.

5.2.2 Trees

The Austroads Guide to Road Safety – Part 9 indicates that trees of more than 100mm diameter are considered as non-frangible hazards and therefore they should not be present within the



area from edge of traffic lane to the required offset for minimum Clear Zone plus design lane width set out in Table 5.3 or within the limits of road drainage.

There are many existing trees within this area and they should either be progressively removed or protected by guard fence. Resources will limit the amount of tree clearing and guard fencing that can be carried out and clear zone improvements will be affected by progressively working through the prioritized list, prepared following risk assessments of the road network, on a highest risk first basis.

Other than in areas that are protected by guard fence no new trees shall be allowed to establish within the clear zone. These must be controlled by an annual inspection and spraying program.

Areas where the road reserve is not wide enough to provide the required offset for minimum Clear Zone plus design lane width set out in Table 5.3 shall be progressively guard fenced with work to be prioritized on a highest risk first basis. It is likely to be many years before the low trafficked roads can be addressed.

5.2.3 Utility poles

Utility poles are also non frangible hazards and should not be located within the required offset for minimum Clear Zone plus design lane width set out in Table 5.3 unless protected by a guard fence.

Existing poles within this area that are not protected or adjacent to existing trees should be brought to the attention of the pole owner and work to be prioritized on a highest risk first basis.

5.2.4 Drainage and irrigation structures

Drainage culverts should extend to the outer limits of the required offset for minimum Clear Zone plus design lane width set out in Table 5.3 and be fitted with driveable headwalls.

Culverts for access roads or intersecting roads should be located outside the required offset for minimum Clear Zone plus design lane width set out in Table 5.3 where possible and fitted with driveable headwalls.

For existing culverts a program for modification to comply shall be developed with work to be prioritized on a highest risk first basis.



Irrigation pipe crossings shall extend for the full width of the road reserve. Existing irrigation crossings shall be programmed for modification to comply by the irrigation authorities with work to be prioritized on a highest risk first basis.

Bridges shall be fitted with guard railing on the bridge structure and approaches in accordance with Austroads Guidelines.

There are many bridges that currently do not meet these requirements and a program for modification to comply shall be developed in conjunction with the bridge manager (where this is not Council) with work to be prioritized on a highest risk first basis.

For existing non-compliant bridges it is essential that they have adequate signage to warn motorists of the danger and are adequately delineated. An inspection and maintenance program shall be developed for this purpose.

5.2.5 Curves

Curves on Regional Roads shall be treated in accordance with guidelines set out in the RTA paper “Retro-fitting Road Safety to Existing Rural Roads” with works to be carried out where possible when roads are reconstructed and progressively on other curves to be prioritized on a highest risk first basis.

5.2.6 Shoulder sealing

Shoulders on roads classified as Regional, Arterial or Collector shall have shoulders sealed a minimum of 0.5m from the edge of the traffic lane. This work to occur as sections of road are reconstructed.

6. RELATED LEGISLATION, POLICIES AND STRATEGIES

6.1 Legislation

- *Local Government Act 1993*
- *Roads Act*
- *Work Health and Safety Act 2011*

6.2 Council documents

- Risk Management Policy and Framework
- Berrigan Shire 2027
- Transport Asset Management Plan 2020



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- Roadside Vegetation Management Plan 2021

6.3 Other resources

- Austroads Guide to Road Design
- RTA - *"Retro-fitting Road Safety to Existing Rural Roads"* (2007)