



ROADSIDE VEGETATION MANAGEMENT PLAN 2024 - 2029



ACKNOWLEDGEMENT OF TRADITIONAL OWNERS

We acknowledge the Ngarrindjeri people as the traditional owners of this land on which we meet and work. We respect and acknowledge their spiritual connection as the custodians of this land and that their cultural heritage beliefs are still important to the living people today.

We recognise the living culture and combined energies of the Ngarrindjeri people our global pioneers and community members today for their unique contribution to the life of our region.

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What are the ‘Guidelines for managing Roadside Native Vegetation and Regrowth Vegetation¹’?

Native roadside vegetation is considered to be of significant ecological value, as it often contains threatened plant species and vegetation communities and provides habitat for native wildlife. As such, it is protected in South Australia under both the *Local Government Act 1999* and the *Native Vegetation Act 1991*.

However, this vegetation can create issues for road users, such as impeding vehicle movement, affecting sightlines and presenting possible hazards to errant vehicles. This means there are times when clearing native vegetation is crucial.

Under the *Local Government Act 1999*, any removal or disturbance of roadside vegetation requires the local council's permission. Under the *Native Vegetation Act 1991*, removal or disturbance of roadside vegetation also requires the consent of the Native Vegetation Council unless a specific exemption applies.

These Guidelines for the Management of Roadside Native Vegetation and Regrowth Vegetation are to provide parameters for The Rural City of Murray Bridge and the Department of Transport and Infrastructure (DTI) to manage native vegetation in road reserves to maintain the safety and visibility of roadsides while retaining important native vegetation values.

The guidelines state where, when and how to gain approval by the Native Vegetation Council (NVC), how to outline a pathway for clearing native vegetation that poses a safety concern and provide avenues for landholders adjacent to road reserves to manage vegetation in particular circumstances.

This document replaces the “Guidelines for the Management of Roadside Vegetation” (NVC 2012). One significant change is that the management of native vegetation regrowth on roadsides is now up to 20 years, in contrast, only regrowth of up to 5 years could be cleared. This change allows local councils and DIT to manage the immediate regrowth (1 m into verge) along their roadsides without requiring any approval while allowing clearance of regrowth further from the road (2-3 m) through an approval process.

The Rural City of Murray Bridge recognises the value of our Council road reserves. Roadside reserves are often the only remaining areas of remnant native vegetation, some of which are highly fragmented and isolated. These remnants are highly valued for their biological diversity serving as important wildlife corridors, a seed source for revegetation and areas of species habitat.

Roadside vegetation provides a range of environmental and social benefits. These include both aesthetic and amenity values as well as significant biodiversity values. The legacy of clearance in South Australia means that a disproportionately high amount of remnant native vegetation occurs on roadsides and road reserves, especially in the agricultural zone. Therefore, it may be the only remnant of the pre-European vegetation in a region and often contains threatened species and vegetation communities. Additionally, roadside vegetation provides benefits for road maintenance and safety, including providing shelter from wind and shade from sun glare, defining curves in roads and enhancing driver alertness, and lowering local water tables that may affect the road formation, stabilising batters and embankments and preventing establishing weeds. The Rural City of Murray Bridge is committed

¹ *Guidelines for the Management of Roadside Native Vegetation and Regrowth Vegetation under Native Vegetation Regulation 11(23), Native Vegetation Council, Endorsed 3 July 2019 (amended September 2020)*



to protecting and enhancing our natural resources. This Roadside Vegetation Management Plan is to guide Council in the management of its roadside reserves in a sustainable manner.

A complete review of the Roadside Vegetation Management Plan is undertaken every five years. The development of this Roadside Vegetation Management Plan is a crucial step toward implementing a range of environmental initiatives, which help to achieve continuous improvement towards environmentally sustainable development within the Rural City of Murray Bridge.

What legislation informs these guidelines²?

The guidelines comply with Section 25 of the *Native Vegetation Act 1991*, which relates to Guidelines for the Management of Roadside Native Vegetation and Regrowth Vegetation under Native Vegetation for the application of assistance and the management of native vegetation.

Specifically, these guidelines are prepared under, *Regulation 11(23)* Division 4, Part 3 to allow the clearance of vegetation that is growing or situated on a road reserve or rail corridor for the purpose of:

- a) ensuring the safety of persons entering or passing the land, or
- b) controlling pests on the land

Under this regulation, clearing vegetation can only occur if:

- i. the clearance complies with these guidelines;
- or
- ii. the clearance complies with a Roadside Management Plan prepared by the Local Council or DTI and approved by the Native Vegetation Council
- and
- iii. the clearance meets all the other requirements of *Regulation 11*.

Importance of protecting native vegetation

Native vegetation along roadsides is significant for many reasons:

It contains threatened plants species and vegetation communities

The legacy of land clearance in South Australia means that much of the state's remnant native vegetation is located on roadsides and in road reserves. This is particularly true in agricultural zones, Mostly, this vegetation is uncleared or ungrazed, so it may be the only remnant pre-European vegetation containing threatened plant species and vegetation communities.

It provides habitat for native wildlife.

Native vegetation provides habitat for native wildlife, and often supports populations of threatened species. For example, mature roadside trees contain resources like hollows that are less common in younger, surrounding vegetation.

Roadside vegetation, along with other remnant vegetation and scattered paddock trees, can also help wildlife, particularly birds, move through the landscape.

² *Guidelines for the Management of Roadside Native Vegetation and Regrowth Vegetation under Native Vegetation Regulation 11(23), Native Vegetation Council, Endorsed 3 July 2019 (amended September 2020)*"

Introduction



It also serves as a valuable source for pollinators and can provide seed for revegetation projects. This vegetation also provides a shelterbelt for adjoining landholders that usually requires little maintenance.

It includes aesthetic and amenity values

Roadside vegetation provides social benefits including aesthetic and amenity values. It can be beneficial for road maintenance and safety, including providing shelter from wind and shading sun glare, defining curves in roads and enhancing driver alertness.

Alternatives to clearing vegetation

While these guidelines focus on how to clear regrowth vegetation, the Native Vegetation Council encourages local councils and DPTI to continue to find alternatives to vegetation clearance where practicable. This includes installing guardrails, erecting additional signs or reducing road speed limits.

If a local council wants to undertake management of roadside vegetation in manner that is not consistent with these guidelines, it can develop a Roadside Vegetation Management Plan for their local council area for consideration by the Native Vegetation Council.

Roadside Vegetation Management Plans must be developed in accordance with Part 4 of these guidelines and must not result in clearances that significantly adversely impact native vegetation.

Note: Individual Roadside Vegetation Management Plans that are already endorsed by the Native Vegetation Council will continue to be recognised and will be re-assessed if the local council wishes to continue implementing them past their expiry date. The Native Vegetation Council reviews the plan every 5 years.



What is Roadside Vegetation?

Local councils in South Australia are responsible, under the *Local Government Act 1991*, for approximately 75,000 kilometres of roads.

The definition of a **Road** from *Roads Opening and Closing Act 1991* is

- a) a public road within the meaning of section 4 of the *Local Government Act 1999*; or
- b) an alley, laneway, walkway or other similar thoroughfare vested in a council; or
- c) in relation to a part of the State not within a council area:
 - (i). a road or street delineated and shown on a public map or plan of the State as laid out for public purposes by the Crown; or
 - (ii). a road or street opened under this Act or any other Act relating to the opening of new roads and streets; or
 - (iii). a road or street transferred or surrendered to the Minister of Local Government or the Crown by the owner or lessee for use as a public road or street; or
 - (iv). a road or street declared or dedicated under any other Act to be a public road or street,
- d) and includes part of a road.

The ***Native Vegetation Act 1991*** protects native vegetation, and the ***Local Government Act 1999*** also protects vegetation on roadsides, and any roadside vegetation removal or disturbance requires the Local Council's permission. Under the Native Vegetation Act, such removal or disturbance requires the approval of the Native Vegetation Council unless a specific exemption applies through the *Native Vegetation Regulations 2017*. Generally, clearance of roadside or railway corridors vegetation must be undertaken in accordance with ***Regulation 11(23)***.

Roadside or rail corridor vegetation management.

This regulation allows for clearance of roadside vegetation by, or on behalf of a Local Council or DIT where the vegetation that is growing or is situated on land comprising a road reserve for the purpose of—

- a) ensuring the safety of persons entering or passing the land or of property on the land; or
- b) controlling pests on the land

Under this regulation, clearance of vegetation can only occur if;

- i. the clearance complies with these guidelines approved by the Native Vegetation Council; OR
- ii. the clearance complies with a Roadside Management Plan prepared by The Rural City of Murray Bridge or DPTI and approved by the Native Vegetation Council (developed in accordance with Part 4 of these guidelines), and the clearance meets all the other requirements of *Regulation 11*.

Defining what is a roadside

The diagram below defines the terminology used within these guidelines - particularly the primary envelope and verge. It is important that any users of these guidelines are familiar with these terms as they are central in guiding what activities can and cannot be undertaken. This diagram must be read in conjunction with the definitions contained in the Glossary.

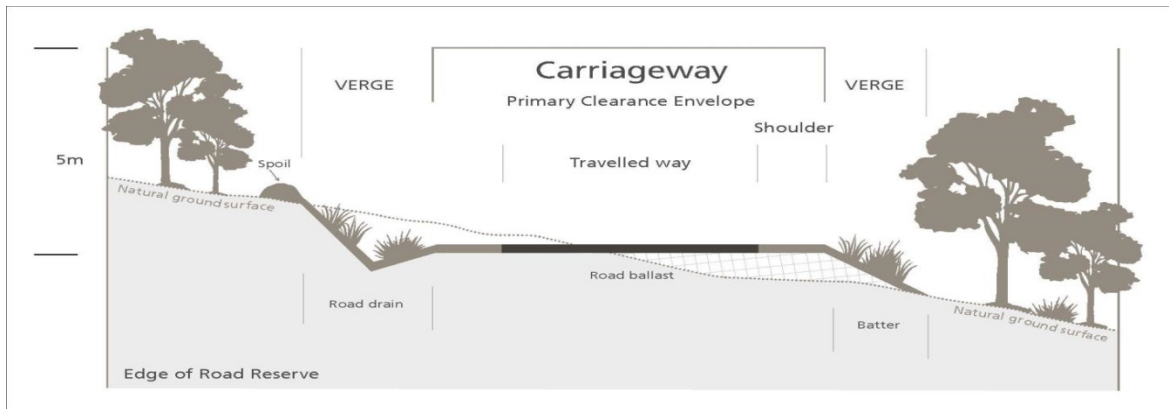


Figure 1: Definition of a Carriageway

Carriageway

Roadside vegetation - Is any vegetation growing on a road reserve, and includes vegetation on a roadside (the area adjacent to a formed road), and vegetation growing on an unmade or undeveloped road reserve; this includes native vegetation of conservation value and vegetation dominated by introduced species.



Figure 2: Road reserve showing road formation and roadside

Why is Roadside Vegetation important?

Native roadside vegetation is important for a variety of reasons. From a conservation perspective, it carries significant value, as much of the native vegetation is removed or highly disturbed within the agricultural region of the State. In some areas, roadsides support virtually the only remaining example of the original vegetation. Roadside vegetation also provides functional and social benefits.

Survey work in 1978 revealed, *“South Australia’s native roadside vegetation has been severely depleted through clearance and through several forms of ongoing disturbance. Despite this, many important areas remain, some of which are in very good condition and need to be kept free of disturbance as*



*much as possible, while others require active management to ensure that their features are not gradually degraded*³.

The benefits of preserving native vegetation on roadsides can be summarised as follows (Breckwoldt and others (1990)⁴, and Saunders and Hobbs (1991)⁵, provide further background information):

1. It contains threatened plants species and vegetation communities

- The legacy of land clearance in South Australia means that much of the state’s remnant native vegetation is located on roadsides and in road reserves. This is particularly true in agricultural zones,
- For the most part, this vegetation has never been cleared or grazed, and in some regions, it may be the only remnant pre-European vegetation that exists, so it often contains threatened plant species and vegetation communities.

2. Functional benefits

- Native vegetation on roadsides helps to lower local water tables that may affect the road formation and pavement.
- Intact native vegetation also acts as an effective, low-cost form of weed control by preventing the establishment of weeds in the roadside.
- Native vegetation on roadsides can provide valuable shelter for livestock and crops in adjacent agricultural land.
- Native vegetation can also help to define curves, creating a safer driving environment.
- Retention of native vegetation reduces the velocity of water runoff, thus reducing scour and erosion of batters and embankments.
- Shade from native vegetation keeps the road cool for road users, particularly pedestrians and cyclists, and provides shade at rest stops for travellers.
- Predatory insects (‘farmer’s helpers’) are commonly found on native vegetation.



Biodiverse roadsides increase wildlife

3. It provides habitat for native wildlife

- Substantial areas of native vegetation are on roadsides even in highly modified areas of the State. In some areas, native vegetation in road reserves is the only remnant original vegetation.
- Along with other remnant vegetation and scattered paddock trees, roadside vegetation can facilitate movements of wildlife, particularly birds, through the landscape and in turn assisting pollination of plants that may otherwise become isolated.

³ Palmer, D., and Lewis, S. (1987). *Mapping of Roadside Vegetation in South Australia*. Department of Environment and Planning, South Australia.

⁴ Breckwoldt, R. and others (1990). *Living Corridors – Conservation and Management of Roadside Vegetation*. Greening Australia, Canberra, Australia.

⁵ Saunders, D.A., and Hobbs, R.J. (1991). *Nature Conservation 2: The Role of Corridors*. Surrey Beatty & Sons, Chipping Norton, NSW, Australia.



- Roadside trees can be very old and contain resources (e.g., hollows) less common in younger surrounding vegetation⁶.
- Roadside vegetation can also provide an important seed source for revegetation projects.

4. It provides aesthetic and amenity values.

- In extensively cleared, agricultural areas remnant vegetation on roadsides provides important aesthetic visual interest to the general landscape once referred to as the “Front Garden of the Nation” by Edna Walling in 1952⁷.
- Scenic quality is important to motorists: roadside vegetation can contribute to driver alertness by offering relief from boredom.
- Remnant vegetation in road reserves often contains attractive wildflower species contributing to the natural character and tourist appeal of a district.
- In cleared areas, road reserves often represent an historical reminder of the variety of vegetation types that occurred across the landscape prior to settlement.
- Volunteers have a sense of ownership towards roadsides reserves.
- Roadside vegetation can be used as an educational tool to highlight to the public the varieties of habitats that used to belong in the area.
- It could also be said that “*we, the community, have a duty to exercise foresight in our treatment of the environment which we will hand on to our successors*”⁸

⁶ Clarke et al (2010). *Aging mallee eucalypt vegetation after fire: insights for successional trajectories in semi-arid mallee ecosystems*. Australian Journal of Botany 58: 363 – 372.

⁷ Walling, E. (1952). *Country Roads – The Australian Roadside*. Reprinted in 1985, by Pioneer Design Studio, 31 North Road, Lilydale, Victoria, Australia.

⁸ Roadside Vegetation Committee (1978). *The role and objectives of the Roadside Vegetation Committee*. Unpublished Document. Adelaide.



Biodiverse Roadside Vegetation on Browns Road.

Protecting Roadside Vegetation

State and Commonwealth legislation protects and regulates native roadside vegetation in South Australia.

Native Vegetation Act 1991 and Native Vegetation Regulations 2017

In South Australia, the *Native Vegetation Act, 1991* and the *Native Vegetation Regulations 2017* protects the clearance of native vegetation, including roadsides. This means that any clearance of native vegetation on roadsides requires the permission of the Native Vegetation Council (NVC) unless a specific regulation applies.

Regulation 11(23) Roadside or rail corridor vegetation management, allows for clearance by a local council, or someone acting on behalf of the local council, if the vegetation is growing on a road reserve in the area of the council and the person undertaking the clearance complies with either:

- a management plan prepared by the local council and approved by the NVC; or
- with NVC guidelines for the Management of Roadside Vegetation.

Some roadside activities such as clearance for new road works, fire prevention, public safety and service provision are managed under other regulations (Figure 4). Some require compensation for the clearance through either on-ground native vegetation restoration or revegetation works, or payment into a fund that supports those works elsewhere in the region.



Other statutes relevant to the protection and management of native fauna and flora on roadsides⁹

- The *Local Government Act 1999* (Section 221), where any works on road reserves require the local council's permission.
- The *National Parks and Wildlife Act 1972* prohibits the removal of native vegetation without a permit from reserves, wilderness protection zones, Crown land, and public land or forest reserves in South Australia.
- The *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*, promotes the conservation of biodiversity by providing strong protection for nationally listed species of threatened indigenous plants and animals and important habitats. Any action that significantly affects these species or habitats requires assessment and Commonwealth approval.
- The [Landscape South Australia Act 2019](#) which promotes sustainable and integrated management of the State's natural resources and makes provision for the protection of the State's natural resources.
- Numerous other Acts of parliament include, but are not limited to the *Fences Act 1975*, *Electricity Corporations Act 1994*, *Planning, Development and Infrastructure Act 2016*, *Fire and Emergency Services Act 2005*, [Work Health and Safety Act 2012](#) and *Road Traffic Act 1961*.

Threats to Roadside Native Vegetation

Purely because of its linear nature, roadside vegetation is susceptible to gradual degradation through a range of activities. This degradation can be compounded if soils are disturbed or compacted by machinery or if low native shrubs or native grasses are unintentionally driven over or cleared. Not only can native plants be unnecessarily destroyed, but conditions can also be made unsuitable for natural regeneration and management problems can also be created for adjoining landholders.

⁹ [Native Vegetation Act & Regulations](#))



Table 1: Examples of the types of threats to native vegetation on roadsides

- inappropriate fire prevention methods (e.g., boom spraying, ploughing);
- pesticide drift from neighbouring property;
- clearing for fence replacement (excessive or inappropriate method);
- clearing for new driveways (excessive or poorly located);
- weed invasion from neighbouring property;
- excessive seed harvesting;
- firewood collecting;
- disposal of rubbish and waste materials;
- inappropriate or insensitive weed control methods;
- inappropriate or insensitive vermin control methods;
- poorly designed new road construction (realignments, widening);
- poorly managed roadwork activity (e.g., stockpiles, turning areas);
- incremental clearance along road edge when grading unsealed roads;
- inappropriate vegetation control methods for sight distance;
- poor management of grading spoil (placement in roadside or table drain);
- excessive drain clearing or inappropriate disposal of drain spoil;
- installation of services where cleared land exists elsewhere;
- insensitive methods used to maintain services;
- inappropriate planting within intact native vegetation (e.g., trees in native grassland, or sedgeland);
- grazing by stock or rabbits
- off-road vehicles;
- plant disease (e.g., *Phytophthora*, Mundulla Yellows);
- inappropriate fire regimes;
- changes to hydrology;
- dryland salinity;
- lack of active management; and
- senescence (old age)
- Dust from unsealed roads.

These activities can occur for a number of reasons, but are grouped into four categories, each of which may require a different approach to minimise or eliminate the risk. Threats to roadside native vegetation can occur due to:

- **ignorance** of the law – e.g., clearance for fence lines by adjacent landholders, or inappropriate seed collection;
- **accidental** clearance – e.g., vehicles parking on roadside, grading a little wider each time, or inappropriate weed control methods;
- **illegal** use – e.g., domestic waste and weed dumping, or sheep and cattle grazing; and
- **inaction** – e.g., weeds and pests spread over time if not actively controlled



Figure 3: Left to Right - Spoil heaps: garden escapees; sour sobs and grassy weeds

Managing Roadside Vegetation

Native bushland is an efficient, self-sustaining system and, after any ground disturbance, it may take a number of years to return to a stable state. Major disturbance can unbalance the system (e.g., through



serious weed infestation) and cause long-term and sometimes irreversible damage. Often, inappropriate management activities can set up the next round of maintenance problems.

Native vegetation along roadsides needs careful management if it is to be conserved for future generations. Good roadside management practices can also generate potential savings in local council road maintenance budgets.

Low-impact management of roadside vegetation is an integral part of efficient and effective maintenance of roads.

The most important step to manage roadside native vegetation is to identify where and what it is, through roadside vegetation surveys or opportunistic observations.

Preventative measures such as the Roadside Marker system, protocols for road workers, and information to landowners should then be implemented to prevent direct clearance and physical damage to identified vegetation.

Ideally, management measures should also extend to improving the quality and quantity of the vegetation on roadsides, through weed and pest control works, rehabilitation and revegetation.



Figure 4: Observation and training in plant identification can help road workers and contractors avoid accidental damage to native plants

What is a Roadside Vegetation Management Plan?

A Roadside Vegetation Management Plan (RVMP) is a reference document encompassing a range of roadside actions prepared and owned by a local council to promote good management of roadside vegetation.

Implementation of the RVMP objectives and guidelines, combined with local council commitment and support, can result in good management outcomes for roadside vegetation, and usually with little impact on council and other user's activities on roadsides.

RVMPs must be endorsed by the Native Vegetation Council (NVC) under the *Native Vegetation Act 1991* to fulfil a legal requirement under *Regulation 11(23)* Roadside or rail corridor vegetation management). This regulation allows for clearance of native vegetation by a local council, or someone acting on behalf of the local council, where the clearance complies with a Roadside Management Plan approved by the NVC.



Context of Roadside Vegetation Management Plan

Area Covered by the Plan

The Rural City of Murray Bridge covers an area of 1,832 square kilometres and supports a population of 20,374 people. The main townships include Murray Bridge centrally located, Mypolonga in the North, Wellington in the South, Monteith in the East and Callington in the West (Figure 8).

The Rural City of Murray Bridge includes

- 1,373 km of roads;
- 474 km of sealed roads;
- 522 km of un-sealed roads;
- 377 km of undeveloped road reserves

and is responsible for the roadside vegetation along all of these roads.

Under the Local Government Act 1999, the Rural City of Murray Bridge responsibility is to ensure that roads provide for the safe movement of traffic, and is required to facilitate sustainable development and the protection of the environment and to ensure a proper balance within its community between economic, social, environmental and cultural considerations.

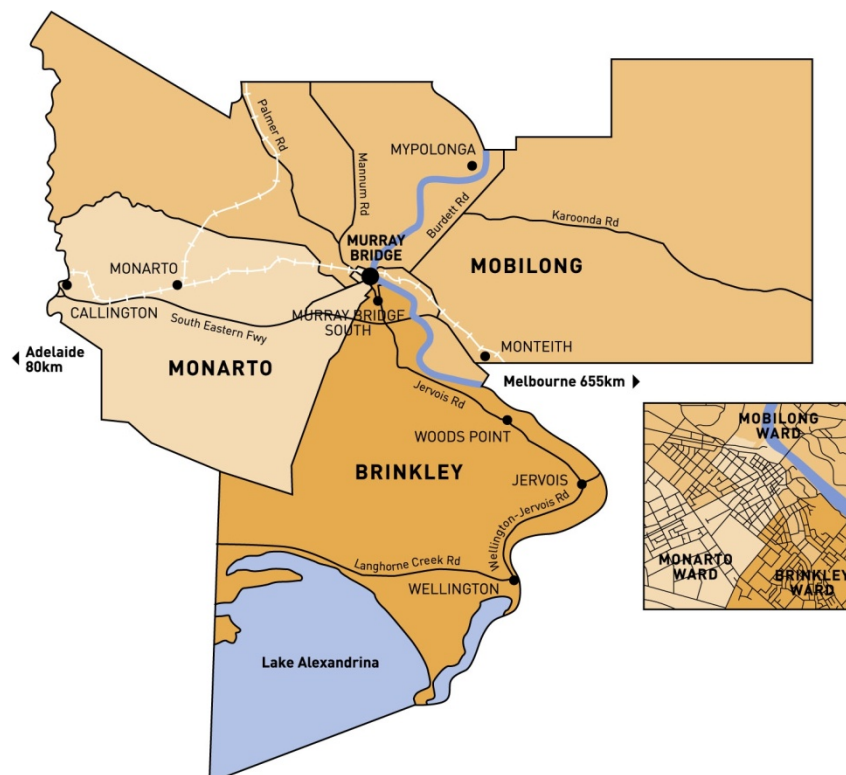


Figure 5: Rural City of Murray Bridge

There are currently 654 ha of roadside native vegetation remaining. Native vegetation cover is greatest in the east of the council area where land parcels are larger with lower rainfall, preventing many land activities that lead to significant vegetation removal/disturbance. Undulating lands to the west are extensively cleared due to higher value land, proximity to Adelaide and smaller acreage.



The range of original vegetation types is well represented within the road reserve system of the council district however, the quality varies from degraded vegetation with little conservation value (446 linear km) through to vegetation associations of high biodiversity value (479 linear km) based on the vegetation categories described.

The original range of vegetation types are represented within the council boundaries, but are now only scattered remnant stands. The dominant vegetation communities in the district are:

- River Red-gums – *Eucalyptus camaldulensis/ Phragmites australis/ Typha domingensis Woodland.*
- River Box – *Eucalyptus largiflorens/ Muehlenbeckia florentula/ Atriplex semibaccata Woodland.*
- Samphire – *Halosarcia pergranulata/Halosarcia indica Shrubland.*
- Nitre Bush – *Nitaria billardieri Shrubland.*
- Cotton Bush – *Maireana aphylla Shrubland.*
- False Sandalwood – *Geijera linearifolia/ Myoporum platycarpum Woodland.*
- Kangaroo Grass Eastern Mount Lofty Ranges Grasslands - Spear grass Grasslands – *Lomandra multiflora / Austrostipa spp. Grasslands.*
- Spear Grass Community on Mallee Limestone Soils – *Austrostipa spp. Austrodanthonia caespitosa/ Dianella revoluta Grasslands.*
- Iron-Grass Natural Temperate Grasslands – *Lomandra effusa Tussock Grassland.*
- Peppermint Box Grassy Woodlands– *Eucalyptus odorata Open Woodland.*
- Mallee Box – *Eucalyptus porosa Low Open Woodland.*
- Blue Gum and Sheoak Woodlands – *Eucalyptus leucoxylon/ Eucalyptus fasciculosa/ Eucalyptus odorata/Allocasuarina verticillata Woodland (Monarto District).*
- Sheoak/ Blue gum Woodland – *Allocasuarina verticillata/ Eucalyptus leucoxylon Low Open Woodland.*
- Native Pine Woodland – *Callitris gracilis Woodland.*
- Very Low Mallee Woodland - *Eucalyptus incrassate*
- Very Low Mallee Woodland - *Eucalyptus socialis*
- Low Mallee - *Eucalyptus calycogona ssp. -*

(List of vegetation communities compiled with the assistance of the Goolwa to Wellington Local Action Planning Association).

Council Roadside Vegetation Policy Statement

The philosophy of the Rural City of Murray Bridge RVMP is in accordance with best practices. This includes identifying the risks and opportunities for the effective management of roadside native vegetation from possible damaging activities without compromising other essential functions of roadsides through integrating appropriate planning procedures.

Key Objectives for Roadside Vegetation

The Rural City of Murray Bridge key objectives for roadside vegetation are to:

- meet legal requirements for both the provision and maintenance of a safe road network and the protection of roadside vegetation;
- maintain and enhance the species diversity, genetic diversity, vegetation associations and habitat types currently occurring within existing roadside vegetation;
- maintain and enhance the habitat and corridor value for indigenous flora and fauna;
- minimise the adverse impacts of activities occurring within the roadside vegetation corridor;
- identify unauthorised activity in road reserves;



- improve the awareness of roadside vegetation management issues for Council the community and other authorities; and
- to achieve appropriate pest plant and vermin control.

What Does This Roadside Vegetation Management Plan Do?

The Rural City of Murray Bridge developed this RVMP to provide a consistent, integrated approach to managing roadside vegetation along municipally controlled roads.

This RVMP satisfies the following:

- it outlines what can be legally cleared on road reserves without NVC approval;
- it outlines the ecological value of roadside native vegetation in the region – e.g., what plant associations are present, their conservation significance and quality, the location of any threatened species, and the distribution of weed species of significance;
- it identifies the threats to roadside native vegetation in the region;
- it promotes the protection of roadside native vegetation from direct damage (e.g., Weed control) by either;
 - processes and procedures (codes of practice, guidelines, fact sheets); and/or
 - plant identification by vegetation survey, mapping, database, Geographic Information System (GIS) and roadside markers for the entire region or on a case-by-case basis by council staff, local experts, or Department for Environment and
- it promotes the protection of roadside native vegetation from indirect damage (e.g., weeds, pests, old age/senescence) and presents opportunities for environmental enhancement of the road network, such as guidelines and programs for weed control, weed hygiene procedures, Bushcare work and principles and other restoration works;
- guides partner organisations on council priorities for Biodiversity Management
- it sets clear policies and guidelines for activities affecting roadsides - this applies not only to road works but also to other uses of roadsides such as service provision, pest animal and plant control, property access and bushfire prevention;
- it encourages planning to minimise potential damage to roadside vegetation (combined with vegetation surveys, planning of roadworks programs well in advance can avoid areas of conservation significance and allow options that have the least impact on roadside vegetation);
- it enables Council to coordinate work programs affecting roadside vegetation and avoid ad-hoc decisions that may be detrimental to roadside vegetation;
- it enables greater efficiencies through planning - from road network planning, management of maintenance contracts and construction project planning to the development of environmental programs and strategies;
- it enhances Council and community awareness of issues affecting roadside vegetation;
- it provides a means for Council to demonstrate due diligence in our responsibility to protect and maintain native vegetation on roadsides; and
- if sufficient detail is included, can remove the need for case-by-case consultation associated with some activities (e.g., by setting out how a particular pest will be tackled in a way which minimises the impact on native vegetation. And show how any damage will be offset through replanting or natural regeneration at the completion of the work, Council may be able to avoid the requirement to obtain individual clearance approval for each case of that pest).

However, this RVMP is not:

- a means of avoiding liability if native vegetation clearance offences do occur;



- an appropriate mechanism to obtain environmental approval for any new road construction works, such as widening & upgrading;
- granting approval for all roadside vegetation clearing; or
- a stand-alone document in isolation to other management structures and controls over activities that occur in road reserves for which the Rural City of Murray Bridge has jurisdiction

How is this Roadside Vegetation Management Plan prepared?

The Rural City of Murray Bridge developed this RVMP to ensure it complies with the *Native Vegetation Act 1991*, other relevant legislative requirements and Council's Strategic Management Plans.

As part of the consultative process, issues and activities were identified that affect roadside vegetation within the district and management actions established to ensure compatibility with existing Council policies and objectives. This includes developing standard operating procedures for managing roadside activities where those activities are likely to affect roadside native vegetation.

What does this Roadside Vegetation Management Plan contain?

This RVMP contains:

- details of the Rural City of Murray Bridge's roadside vegetation survey and roadside marker scheme (Section 4);
- a discussion of management issues (activities) that may affect roadside vegetation, including procedures for approval before implementing activities, and guidelines for undertaking these activities (Section 4);
- a section on Management Actions outlining a series of actions with a program for implementation that will promote planning and improved co-operation between all roadside users in the management of road reserves (e.g., Council, local emergency services, adjacent private property owners, the NVC, and the general public) (Section 4); and
- Fact Sheets for council staff field use and / or landholders and / or the public.

How to use this Roadside Vegetation Management Plan

The Rural City of Murray Bridge uses this RVMP as a working reference document. The RVMP links to Council's Strategic and Development Plans and associated performance measures.

Council trains staff and contractors to ensure they can interpret the plan and implement the roadwork practices required to minimise damaging impacts on roadside vegetation and improve the protection of remnant vegetation.

How this Plan will be reviewed

The Rural City of Murray Bridge internally reviews the RVMP every five years to ensure compliance with the objectives of the RVMP.

This will help ensure that the RVMP stays current with respect to legislation and terminology, and to improve usability and relevance.



Roadside Vegetation Survey

Why survey Roadside Vegetation?

The Rural City of Murray Bridge has surveyed its roadsides to provide important information about the location, composition and conservation value of native plant communities and species along roadside and the extent of weed invasion and other disturbances.

Michael Hyde surveyed remnant roadside vegetation in 1996 using the standard drive-by roadside methodology, “Roadside Vegetation Survey Methodology in South Australia”. A map of remnant roadside vegetation association is in Figure 6.

This method enables the rapid, systematic collection of data describing the vegetation’s ecological value and conservation significance in road reserves, and provides information necessary for making appropriate roadside management decisions (Stokes et al, 2006).

Data collected in the field is maintained in the Roadside Vegetation Database (RVD) linked to the GIS. The standard methodology incorporates the data into a state-wide layer of roadside vegetation mapping. The RVD is part of the Environmental Database of South Australia (EDBSA) and links to the bulk of the biological survey data in South Australia.

The recognised advantages of using this survey methodology are many, including:

- contractors undertaking different regional surveys need not spend time developing methodology;
- local councils that instigate a roadside survey do not have to develop a database or mapping system;
- plant names are automatically updated if the taxonomy of a species is changed in the future; and
- data can be efficiently accessed to search for and spatially display segments of roadside that match certain characteristics (such as threatened species records, pre-European mapping, etc.).

What are the products of the Roadside Vegetation Survey?

The survey provides Council with an inventory of the condition and quality of roadside vegetation and uses it to assist Council in the development of strategies for the protection and management of roadside vegetation.

The outputs of the Rural City of Murray Bridge vegetation survey are:

- Maps displaying the information collected during the “drive-by” assessment – in particular, data collected from the roadside vegetation survey have been analysed and mapped according to the five vegetation categories;
- Data has been imported into the Rural City of Murray Bridge GIS; and
- Computer-generated reports that summarise the data collected such as vegetation association statistics (distance, condition), lists of species recorded on the survey, and roadside marker report required to determine locations for placing roadside markers under the Roadside Marker Scheme.



Outcomes stemming from the survey results include:

- implementation of the roadside marker signs identifying areas of significant and endangered roadside vegetation;
- informing Council’s planning programs for road construction and road maintenance activities of the location of high-value vegetation so that alternative routes can be considered at the planning stage;
- educational and promotional material regarding conserving important areas;
- identifying potential Significant Environmental Benefit (SEB) areas should any proposed clearance of native vegetation for road work activities be required; and
- identifying suitable sites for intensive management to protect and enhance biodiversity (e.g., Trees for Life “Bushcare” sites)

Such measures to minimise the impact of activities on roadside vegetation are likely to contribute to lower, long-term roadside and road verge maintenance costs.

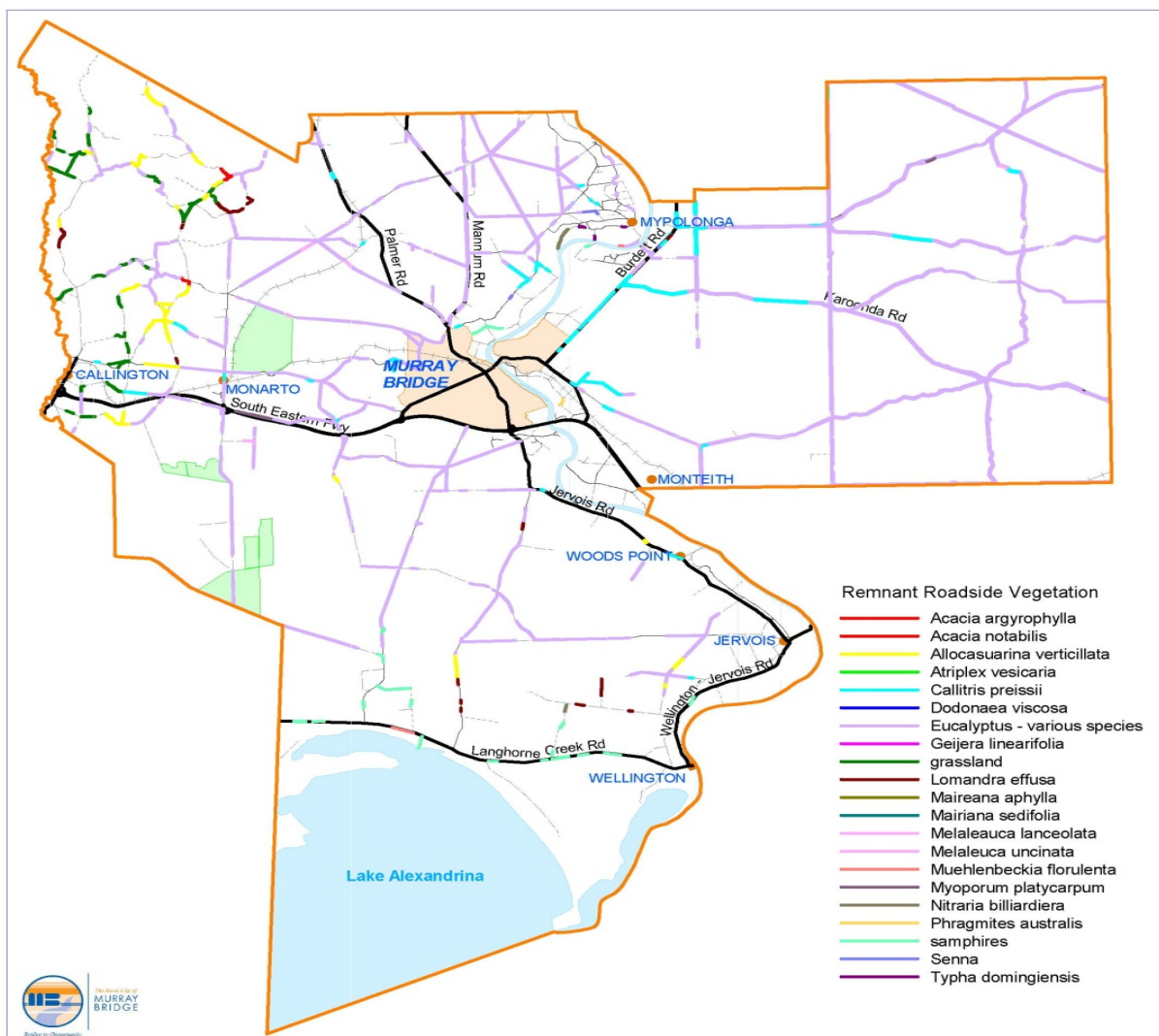


Figure 6: Remnant roadside vegetation associations



Roadside Reserve Classification

Roadside reserves are classified based on the ecological value of the existing remnant vegetation.

The *overall significance* rating provides a simple summary of the relative ecological value of the vegetation in each segment. This is based on a combination of two attributes: the conservation priority rating for the vegetation association, and the overview condition (extent of weed invasion) rating for the segment.

There are five categories of roadside vegetation based on its *overall significance* (Table 2). These range from Category A with high priority vegetation association in excellent or good condition to Category E with little or no native vegetation present.

A map of remnant roadside vegetation conditions for the road network within the Rural City of Murray Bridge is in Figure 7.

Table 2: Description of the categories of overall vegetation significance

| Category | Description |
|----------|--|
| A | Should not be disturbed; contains a high priority vegetation association in excellent or good condition |
| B | Should not be disturbed; contains a high priority vegetation association in moderate condition or a lower priority association in excellent condition |
| C | Disturbance should be avoided wherever possible; contains a high priority vegetation association in poor condition or a lower priority association in moderate condition |
| D | May be disturbed, subject to further assessment and planning; contains limited native vegetation in poor condition |
| E | May be disturbed; very little or no native vegetation present. |

Note: Even though some categories “may be disturbed”, this only means that disturbance of areas *without* native vegetation can occur, e.g., soil disturbance, and compaction by machinery or other means. Native vegetation in ALL categories (even D and E) must not be cleared unless specifically outlined in this plan.

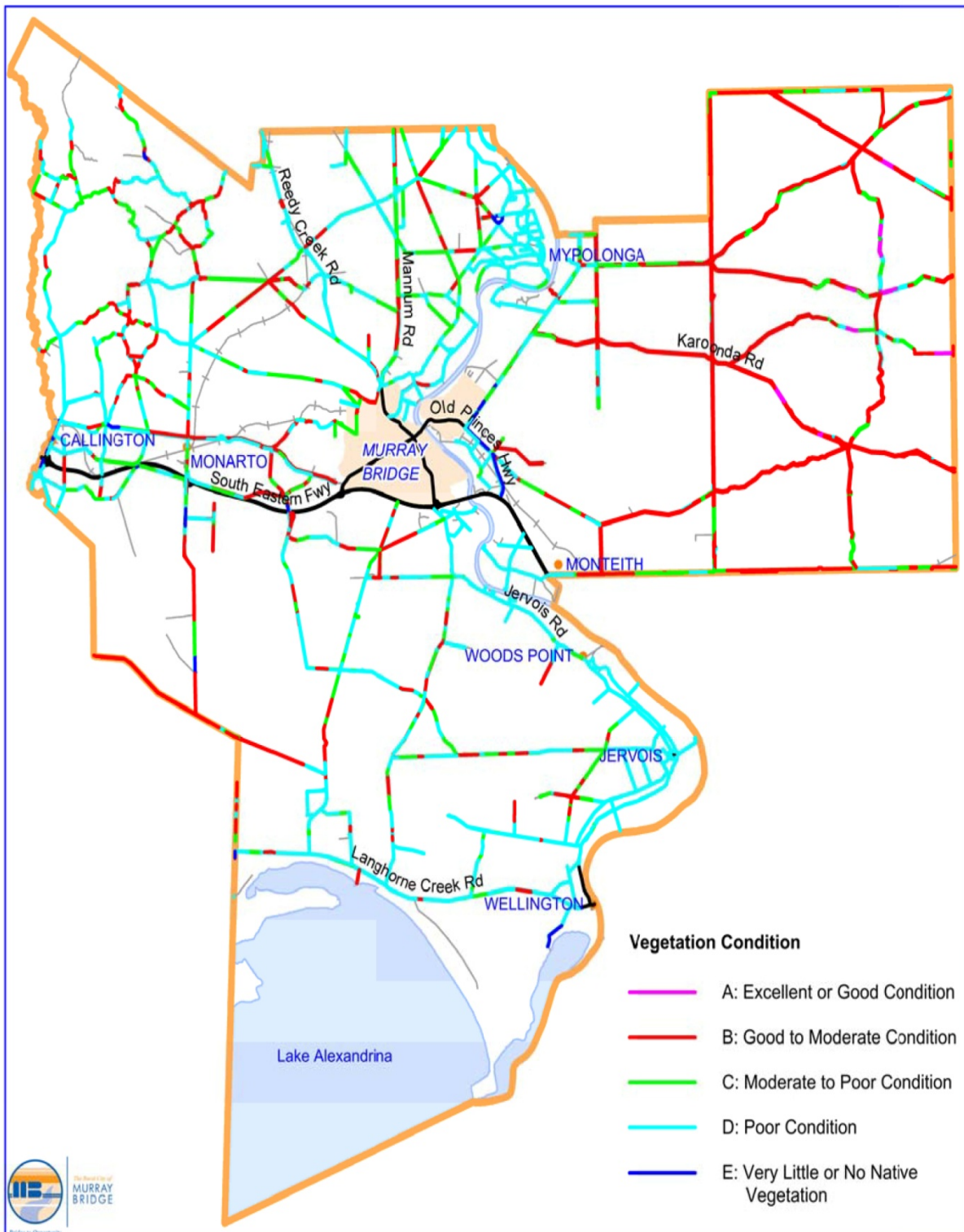


Figure 7: Map of remnant roadside vegetation condition



Hierarchical Road Classification System

The hierarchical road classification system (combined with roadside reserve classifications (refer to Section 3.3) is a useful tool to identify and recognise roads within the network containing high-quality roadside vegetation to avoid the loss of vegetation that may occur through the reclassification of a road and application of a higher clearance envelope standard (i.e., increase of clearance width). The width of roadsides supporting good quality native vegetation is maintained by recognising the roads where this occurs. A system of road classification based on functional use, including the roadside environment, allows for a consistent treatment of all roads in a network (Table 4).

An important factor to consider for route location, and road classification, is the quality of roadside vegetation. This may require the examination of several alternative routes and a detailed evaluation based on environmental social, and traffic considerations. A road classification system based on routes designated for specific traffic needs and providing for the protection of roadside vegetation will ensure that ad hoc management decisions at the expense of roadside vegetation are avoided. For example, isolated requests to clear roadside vegetation for the movement of over-dimension farm machinery are dealt with strategically and more efficiently.

The roadside environment is an important functional element of roads and road reserves. The vegetation, for example, cannot be considered independently of the soil and water that support it, and these in turn cannot be considered in isolation of the pavement.

A map of the road hierarchy for the Rural City of Murray Bridge is in Figure 8.

The four hierarchical road classification categories within the Rural City of Murray Bridge are in Table 3.

Table 3: Hierarchical Road classification categories

| Category | Description |
|----------|--|
| 1 | These sealed roads are main roads that link South Australia or National road networks or links between regional centres. |
| 2 | These are sealed roads used by residents to connect between local roads and arterial roads. |
| 3 | These roads often allow a direct route for traffic between smaller towns and may allow a passage for vehicles to access the main sealed roads. |
| 4 | These are predominantly undeveloped tracks used by adjoining property owners. |

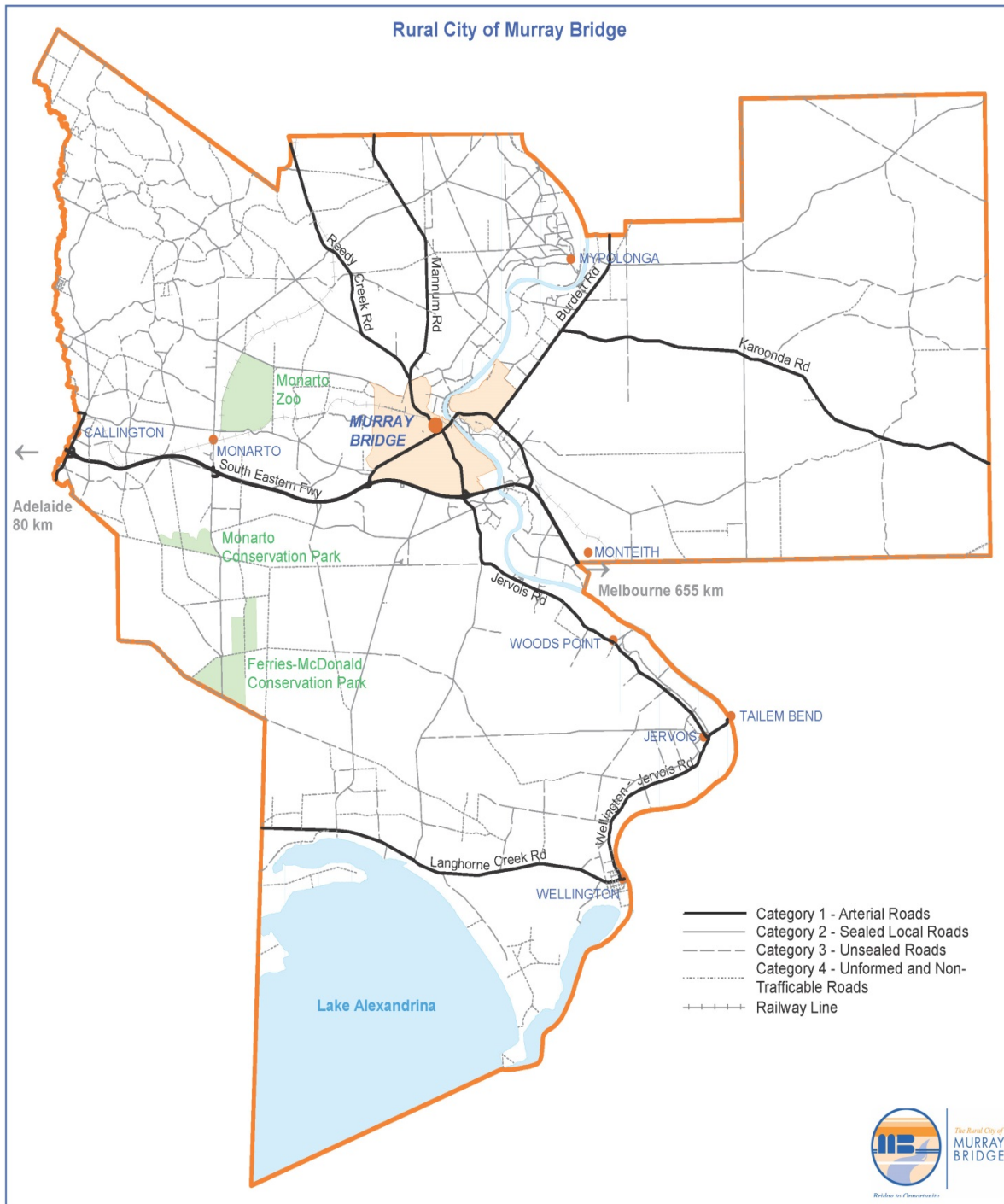


Figure 8: Hierarchical Road classification categories



Management Issues

The following sections outline the management issues relevant to the Rural City of Murray Bridge that impact on native vegetation on roadsides and provides guidelines to reduce likely impacts, as well as any consultation or assessment procedures that are required. The purpose of a risk assessment is to identify the key threats to roadside vegetation and their likelihood of occurring to develop appropriate control measures to minimise or eliminate the risk.

The guidelines that follow include a standard section entitled Consultation and Approval Procedures. This refers to the need for clearance approval, which is interpreted as follows:

- Native vegetation clearance approval is needed under the *Native Vegetation Act 1991*;
- The Native Vegetation Branch should be the first point of contact regarding such clearance, as the Unit may be able to approve clearance of a small amount of vegetation known to be common to an area and that would not impact on the biodiversity of the area.
- The Unit will determine whether the proposed clearance requires formal clearance approval from the NVC in the form of a Clearance or Regulation Application.
- The South Australian Murraylands and Riverland Landscape Board can be contacted for advice regarding native vegetation on roadsides.

Both the Native Vegetation Branch and the NVC can be contacted at:

GPO Box 1047 ADELAIDE 5001

Telephone (08) 8303 9777

Email; NVC@sa.gov.au

Web; www.environment.sa.gov.au/nativevegetation

Local contact is the South Australia Murraylands and Riverland Landscape Board on 8532 9100

Table 4 is a quick reference guide to the legal requirements under the *Native Vegetation Act 1991*



Table 4: Quick reference guide to the legal requirements of clearing native roadside vegetation

| ACTIVITY | CLEARANCE APPROVAL | |
|---|---|---|
| | NOT REQUIRED (Does not require approval under the <i>Native Vegetation Act 1991</i>) | REQUIRED (Under <i>Native Vegetation Regulations 2017</i> or clearance application to the NVC) |
| Maintenance | Maintenance of existing clearance with low impact methods | Increased clearance or high impact methods to be used |
| Maintenance of roadside vegetation not covered by Part 1 of the guidelines (Part 4) | Not applicable | Management Plan to be submitted in accordance with Part 4 of these guidelines |
| Roadside vegetation maintenance - Primary envelope (Part 1, Section 1) | Any vegetation that occurs in or extends into the primary envelope. This includes tree branches or trunks hanging into primary clearance envelope from verge or natural ground surface. | Not applicable |
| Roadside vegetation maintenance - Secondary envelope (Part 1, Section 2) | Maintenance of existing clearance around roadside furniture, for sight lines for signs, mitre drains and at intersections. | Not applicable |
| Roadside vegetation maintenance - Verge clearance of re-growth (Part 1, Section 3) | Maintenance of vegetation within the verge if; <ul style="list-style-type: none"> clearance is within 1 metre from the edge of the carriageway, and <ul style="list-style-type: none"> clearance is with low impact methods, and vegetation is less than 20 years old | Maintenance of vegetation within the verge if; <ul style="list-style-type: none"> Clearance is greater than 1 metre (but must be less than 3 metres) from the edge of the carriageway. The vegetation must be less than 20 years old and the width of clearable vegetation is depended on the Category of road and the biodiversity significance of the vegetation. |
| Public safety (Part 2, Section 4) | Not applicable | Any clearance for public safety that includes new clearance or increased clearance. |
| New Roadworks | approval required for any removal of native vegetation | All. Application submitted to the NVC under <i>Regulation 12(34)</i> Infrastructure |
| Pest Plant and Animal Control | Very minor clearance e.g., pruning for access | All but very minor clearance |
| Bushfire Prevention | Maintenance of legally established existing breaks. | Any other clearance for fire prevention, unless following a District Bushfire Management Plan under the <i>Fire and Emergency Services Act 2005</i> , or through an application to the CFS Regional Prevention Officer |



| ACTIVITY | CLEARANCE APPROVAL | |
|---------------------------|--|---|
| | NOT REQUIRED (Does not require approval under the <i>Native Vegetation Act 1991</i>) | REQUIRED (Under <i>Native Vegetation Regulations 2017</i> or clearance application to the NVC) |
| Fence lines | Trees on boundary; branches over/through fence; bushes within 100 mm if they are growing through fence. | Any clearance exceeding standards |
| Access to Adjoining Land | Maximum 5m wide – normal access. Maximum 10m wide – machinery. (Careful site selection to minimise clearance) | Any clearance exceeding standards |
| Grazing (Leased Rds.) | Long-standing grazing practices. | Any direct clearance or increased pressure on native vegetation through changed grazing |
| Grazing (general) | No native vegetation or only trees & exotic grasses present | Where understorey or regenerating veg. present |
| Removal of Plant Material | Dead vegetation other than that defined in the <i>Native Vegetation Regulations 2017</i> | Live timber, flowers or other vegetation removed e.g., brush-cutting Clearance of dead plants of a class declared by regulation to be included in the definition of native vegetation. |
| Maintaining Diversity | | Any measures involving burning, lopping or other disturbance of native vegetation. |

NOTE: As well as the above requirements under *Native Vegetation Act 1991*, any removal of roadside native vegetation needs Council approval and may require approval under other legislation, e.g., *Environment Protection and Biodiversity Conservation Act 1999*.

Consult with the relevant authority if in doubt about any of these requirements.

New Roadworks

Objectives

1. To ensure road construction activities meet road safety standards whilst ensuring minimum disturbance to roadside native vegetation.
2. Where significant vegetation is present, the Rural City of Murray Bridge will consider modifying the road construction to reduce or avoid impact on native vegetation.



Information

The Rural City of Murray Bridge sometimes needs to undertake new roadworks that involve clearing of mature or relatively undisturbed native vegetation. Such new roadworks includes:

- construction of new roads along previously undeveloped road reserves;
- widening or realignment of existing roads;
- construction of new drains, borrow-pits, and stockpile sites; and
- any other new works incidental to road construction or roadworks as defined in the *Local Government Act 1999*.



Native roadside vegetation is vulnerable to roadworks

These activities could have significant environmental impact, as the vegetation must be assessed before the works. If significant vegetation is present, it may be possible to modify the roadworks to reduce or avoid critical impact.

Particular attention needs to be given to shrub and groundcover plants, as these types of plants include many of the State's threatened species.

CONSULTATION AND APPROVAL PROCEDURES FOR NEW ROADWORKS

Clearance approval under Regulation 12(34) Infrastructure is required for new roadworks (such as construction, widening, realignment, new drains, borrow pits or stockpile sites) that involve clearance of native vegetation. Where clearance is required for public safety, Regulation 11(23) Roadside or rail corridor vegetation management may apply.

NOTE: (1) This requirement does not apply to very minor and localised clearance, such as pruning of branches or removal of one or two tree saplings or shrubs that are known to be common in the area. If in doubt as to what constitutes minor clearance, consultation with the Native Vegetation Branch is recommended.

(2) Prior to undertaking any work, consult the Native Vegetation Branch or a suitably qualified person with good plant identification skills. The site may contain small, visually insignificant plant species, such as orchids or native grasses that are of particular conservation significance.

Local councils are asked to contact the Native Vegetation Branch early in the planning and design stages of new roadworks, in order to obtain information about potential native vegetation issues and any associated clearance approval requirements under the *Native Vegetation Act 1991*, therefore minimising delays.

Under the *Native Vegetation Regulations 2017*, Regulation 12(34) Infrastructure permits clearance of native vegetation for new road works provided that it is located such that it avoids or minimises the impact on significant areas of native vegetation. In particular, new road works or widening activities should seek to avoid areas containing an intact stratum of native vegetation. These types of activities require specific NVC approval and require an SEB to offset the clearance.



Guidelines

Road Design

The Rural City of Murray Bridge will consider the following design principles when planning new roadworks (before obtaining Native Vegetation Council approval):

- Avoid vegetation communities of high conservation significance.
- One wide roadside is preferable to two narrow roadsides.
- If widening is necessary where native vegetation is present on both sides, widening on the narrow roadside is preferred.
- The value of roadside vegetation is greater where there is native vegetation adjacent (outside the road reserve).
- Drainage systems and batters will be designed to minimise sedimentation of watercourses, minimise discharge into disease-susceptible plant communities, and control erosion.
- To minimise potential environmental impacts of new roadworks, SEB requirements and the necessary clearance approvals, the Rural City of Murray Bridge will consult with DEW during the planning phase. If significant vegetation is present Council will investigate possible options to modify the roadworks to reduce or avoid critical impacts.

Road Construction

Once approval is obtained from the Native Vegetation Council, the Rural City of Murray Bridge will minimise the impact of construction on vegetation by abiding by the following guidelines:

- Identify and mark with stakes or tape any significant or protected vegetation, habitat areas and sensitive areas before the commencement of works;
- Always stay within the construction zone;
- Keep machinery and stockpiles on previously cleared land;
- Limit soil disturbances on the roadside;
- Only remove vegetation approved by the Native Vegetation Council;
- Identify the exact location of proposed stockpiles, plant compounds, access roads and turning areas to avoid any incidental vegetation damage;
- Borrow pits must be located where native vegetation will not be disturbed;
- Materials for construction work to be taken from disease and weed-free sites;
- Equipment should be cleaned on-site before moving on to other sites: this particularly applies where machinery is operating in weed-infested areas;
- Only use the appropriate type and minimum size of machinery for the job;
- Chip light material from tree removal and use as mulch to spread local seed; dispose of other waste materials at an appropriate site or leave as habitat for wildlife (hollow logs, and other woody material may be left on-site if they are spread widely and not left in a pile);
- Strip and stock-pile topsoil from areas of good vegetation, and re-use as soon as possible;
- Avoid “cleaning-up” vegetation after construction: retain stumps, and deadwood;
- If unsure about any environmental controls, contact the site supervisor or Council Environment Officer; and
- Identify any plant rescue options for translocation opportunities with Landscape SA and community groups.



Road Standards

The following standards for new road construction (*ARRB and Australian Road Standards*) are adopted by the Rural City of Murray Bridge, and are to be carried out subject to approval from the NVC under *Regulation 12(34) Infrastructure*.

To minimise potential environmental impacts of new roadworks, SEB requirements and the necessary clearance approvals, the Rural City of Murray Bridge consults with DEW during the planning phase. If significant vegetation is present the Rural City of Murray Bridge investigates the possible options to modify the roadworks to reduce or avoid critical impacts.

New Sealed Roads

- Road Carriageway Widths - New Category 1 or Category 2 (sealed) roads are to have a maximum road carriageway width of 7 m, a shoulder width of up to 2 m and a verge width of up to 1 m on either side of the edge of the sealed carriageway, see Figure 10 as an example.
- Vertical Height Clearance - The vertical height clearance envelope of new sealed roads is to be up to a maximum of 5 m from the edge of the sealed carriageway.

New Unsealed Roads

- Road Carriageway Widths
- New Category 1 or Category 2 (unsealed) roads are to have a maximum carriageway width of 7 m and a verge width of up to 3 m on either side of the carriageway, see Figure 10 as an example;
- New Category 3 roads are to have a maximum carriageway width of up to 7 m and a verge width of up to 2 m on either side of the carriageway;
- New Category 4 roads are to have a maximum carriageway width of 6 m and a verge width of up to 2 m on either side of the carriageway;
- Vertical Height Clearance - The vertical height clearance envelope of all new unsealed roads is to
 - be up to a maximum of 5.5 m from the edge of the grader line.
 - If unsure about any environmental controls, contact the site supervisor or Council Environment Officer.
 - Identify any plant rescue options for translocation opportunities with Landscape SA and community groups.



Figure 9: View of Schenscher Road



Figure 10: View of Browns Road



Roadside Maintenance

Objectives

1. To ensure a safe and efficient road system whilst ensuring minimum disturbance to roadside native vegetation.
2. To ensure best management practices for vegetation maintenance works on roadsides are understood and adhered to.

Information

Roadside maintenance refers to the clearance of regrowth vegetation (native and introduced) to maintain a road corridor or other established cleared or disturbed areas on road reserves.

Adequate vertical and lateral clearance of roadside vegetation is needed for the safe movement of legal height vehicles across the full width of the traffic lanes.

Additional clearance is usually also needed at intersections, crests, the inside of curves and around roadside furniture such as signs and delineation devices. The amount of extra clearance required varies according to the standard of the road, the type and amount of traffic and the characteristics of the vegetation.

Details about the type of clearance that is permitted for roadside vegetation maintenance and the process that needs to be followed is detailed in the following sections;

- Section 1 – Primary Clearance Envelope
- Section 2 – Secondary Clearance Envelope
- Section 3 – Verge clearance.



Living roadside verge maintained along Browns Road

General Roadside Maintenance Principles

Any clearance activities need to consider the “Mitigation Hierarchy”, this hierarchy comprises of four principles:

- a) **Avoidance**—measures should be taken to avoid clearance of native vegetation wherever possible;
- b) **Minimisation**—if clearance of native vegetation cannot be avoided, measures should be taken to minimise the duration, intensity and extent of impacts of the clearance on biological diversity to the fullest possible extent (whether the impact is direct, indirect or cumulative);
- c) **Rehabilitation** or restoration—measures should be taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been destroyed, by impacts of clearance of native vegetation that cannot be avoided or minimised;
- d) **Offset**—any adverse impact on native vegetation or ecosystems that cannot be avoided or minimised should be offset by the achievement of a significant environmental benefit that outweighs that impact.

Operating Principles

All roadside vegetation management should be undertaken using the following principles:

- Where clearance is restricted to regrowth vegetation only, clearing any vegetation that is more than 20 years old will require an application to the Native Vegetation Council.



- Use the **lowest impact methods** possible for the given activity, including minimal ground disturbance, cutting cleanly rather than breaking branches, slashing, trimming, mowing, or rolling
- Limit the use of **herbicides** to spraying around roadside furniture and for selective weed control.
- Ensuring **graders and other high impact machinery** do not intrude beyond the existing carriageway width (grading a little further each time can have significant impact over several years).
- Position mitre drains in areas devoid of native vegetation (unless clearance approval is given). Also ensure that drains do not deposit sediment into native vegetation, waterways or neighbouring private land.
- Minimise soil disturbance and general intrusion beyond the designated carriageway. Disturbance encourages weeds that compete with native species, leading to potential increases in maintenance costs. More specifically:
 - Parking or turning machinery must be parked or turned at a limited number of designated sites which do not have native vegetation;
 - Materials must be stockpiled at a limited number of designated sites which do not have native vegetation;
 - Clean equipment on-site before moving to other sites: this is particularly important where machinery is operating in weed-infested or infected areas (e.g., land affected by *Phytophthora* spp.);
 - Any required tree-trimming should follow recognised arboriculture standards;
 - Any debris from trimming operations should not be deposited on or amongst other native vegetation but should be disposed of in a manner that does not affect native vegetation, unless it is useful as habitat for wildlife, or is scattered sparsely amongst the remaining vegetation; and
 - Map threatened plant species on roadsides where possible, and carefully plan roadworks at those sites to avoid any impact to those plants. Installation of roadside markers to identify sites with threatened plant species and best practice training for staff and contractors are recommended.
- Retain native vegetation including dead timber wherever possible and integrate into revegetation programs. Take particular care to preserve areas of native grasses, which can be difficult to distinguish from exotic grasses.
- Wherever possible, clear exotic vegetation or locate proposed works on already cleared land in preference to clearing native roadside vegetation.
- Start work with clean machinery in areas of less degraded vegetation and work towards the more degraded sites. This will assist in the prevention of the spread of weeds and reduce on-going maintenance.

Along most rural roads, clearance to the necessary safety standard has already taken place, but regrowth may be encroaching back into the clearance space, often referred to as the clearance envelope (across the full width of the carriageway) or secondary clearance envelope (adjacent to the carriageway). Regrowth may also be occurring on cleared or disturbed sites such as borrow-pit sites and designated spoil heap sites.

This regrowth may be removed without clearance approval, provided that low-impact methods are used (e.g., slashing, rolling, chainsaws) and the regrowth vegetation is less than 20 years old.

Low shrubs, native grasses and groundcovers generally do not affect road safety and, where possible, should be retained in the clearance areas. These species help prevent weed invasion and erosion and can reduce roadside management costs.



Guidelines

Any clearance proposed here is not meant to imply or establish safety standards. Usually, clearance to the necessary safety standards has already taken place, and regrowth encroaching back into these clearance spaces can be cleared without approval from the NVC (see consultation and approval procedures – above). If in doubt, check with the Council Environment Officer, or contact the NVC for advice.

CONSULTATION AND APPROVAL PROCEDURES FOR ROADSIDE MAINTENANCE

- (a) Clearance approval is not generally needed for maintenance of existing roadside vegetation clearances by low-impact methods if the vegetation is less than 20 years old.
- (b) Clearance approval is needed where:
- clearance exceeding previously established safety standards is proposed, such as construction of new open drains; new stockpiles or work areas outside approved clearance envelope; or other maintenance requiring increased clearance, in which case:
 - regrowth vegetation is extended up to 20 years old requires consultation with, and approval from, the Native Vegetation Branch - (previous only regrowth of 5 to 10 years of age or less was permitted to be cleared).
 - regrowth has reached the stage where high-impact methods (e.g., bulldozing) are proposed; OR
 - new works are proposed (see Box, page 31).

If in doubt, check with the Native Vegetation Branch for advice.

Code of Practice

The Rural City of Murray Bridge implemented the following code of practice with the Council Community Biodiversity Officer as delegated responsible officer.

1. Minimise Weed and Disease Spread

- clean down machinery in appropriate areas before entering and leaving the worksite
- program work to begin with clean machinery in high conservation areas and work toward degraded sites
- only use soil or fill from a weed or disease-free site

2. Turn-around Points

- on narrow roads of high or medium conservation value, identify machinery turn-around points where native vegetation will not be damaged
- locate stockpiles, turn-out or lay-down areas on existing cleared land

3. Grading and Drain Cleaning Operations

- avoid damage to roots, bark and limbs
- avoid working inside the drip line of trees, and where root damage and soil compaction may occur
- remove drain spoil and dispose of appropriately
- the grader must not intrude beyond the existing carriageway width (grading a little further each time can have significant impact over several years)



4. Herbicides

- only use herbicides where vegetation control by mechanical methods is inappropriate
- avoid over-spray by not spraying in windy conditions

5. Vegetation Removal

- avoid “cleaning up” vegetation and retain stumps, and dead wood where possible
- carefully prune trees using low impact methods following recognised arboriculture standards
- avoid damaging undergrowth when removing trees
- dispose of waste materials at an appropriate site or leave as habitat for wildlife (hollow logs, and other woody material may be left on-site if they are spread widely and not left in a pile)
- low shrubs, native grasses and groundcovers generally do not affect road safety and, where possible, will be retained to help prevent weed invasion and erosion
- particular care to be taken at sites with Significant Roadside Marker signs

6. Machinery Choice

- only use the appropriate type and minimum size of machinery for the job
- Erosion Control
- remove as little vegetation as possible and encourage the growth of native vegetation on batters, maintain drainage systems, and minimise soil disturbance

Primary Clearance Envelopes

The **primary clearance envelope** refers to the area of the road that will support regular vehicle movement within the carriageway (travelled way and shoulder). Clearance is permitted within the envelope, as it is important to maintain the safety of the road users.

In addition to the Operating Requirements listed on Page 36, specific requirements apply for primary clearance envelopes:

1. Vegetation clearance is required to allow for **legal-height** vehicles (i.e., vehicles measuring 4.6 m in height or less) to pass along the full width of the carriageway. To allow for regrowth between pruning and sagging of branches caused by wet or windy conditions, maintain a clearance height of up to 5.5m within the primary clearance envelope.
2. For **sealed roads**, measure the primary clearance envelope of **up to 5.5 m** from the **edge of the shoulder**, which represents the edge of the carriageway.
3. For **unsealed roads**, measure the primary clearance envelope of **up to 5.5 m** from the **edge of the grader line**, which is taken to be the edge of the carriageway. Keep grading to the pre-existing width.
4. Any regrowth native vegetation may be cleared within the carriageway where it extends into the primary clearance envelope, and limbs extending into the primary clearance envelope can be trimmed back to the trunk or major limb, in a manner to maintain the health of the tree (see Figure 2). It is not permitted to remove to the base.



Clearance of vegetation within the Primary envelope:

Any native vegetation may be cleared within the carriageway where it extends into the primary clearance envelope (up to 5.5 m high and across the whole of the carriageway). Any limbs extending into the primary clearance envelope can be trimmed back to the trunk or, if the trunk extends into the primary clearance envelope, back to ground level using a saw or chainsaw, in a manner to ensure the health of the tree is maintained where possible. (Figure 11).

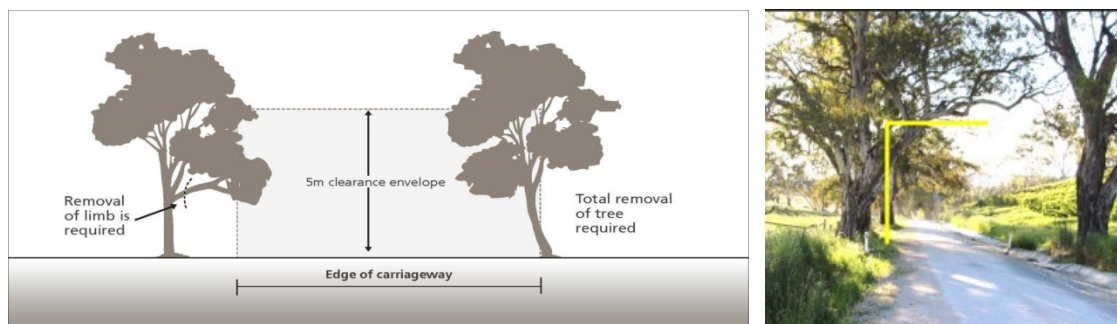


Figure 11: Clearance of vegetation within primary clearance envelope up to 5 m high:
a. (Left hand side) removal of limbs hanging into primary clearance envelope; or
b. (Right hand side) removal of the whole tree to base if trunk leans into primary clearance envelope.

Maintenance of clearance envelope.

CONSULTATION AND APPROVAL PROCEDURES FOR THE PRIMARY CLEARANCE ENVELOPE

No approval or consultation with the NVC is required for clearance within the Primary clearance envelope.

Secondary Clearance Envelopes

- The **secondary clearance envelope** refers to the area surrounding roadside furniture to allow for sufficient sight lines for road users. The envelope encompasses the regrown vegetation, which affects the ability to see upcoming traffic, signs, and roadside furniture. This also includes managing regrowth to maintain guardrails.
- Vegetation in this envelope can only be cleared to how it was when the road was constructed or the roadside furniture was installed (i.e., only vegetation that has grown or regrown in areas previously lawfully cleared for the construction, installation or maintenance of the road or associated infrastructure may be cleared).

In addition to the Operating Requirements listed on Page 37, specific requirements apply for secondary clearance envelopes:

Clearance of vegetation within Secondary Envelope

The following clearance can occur within the secondary clearance envelope:

- Vegetation growing up to **500 mm around roadside furniture** (Figure 12).



- Vegetation growing on the **approach side of signs and road delineation markers** to ensure they are visible from a distance equivalent to the stopping sight distance for the speed environment of the road according to Austroads standards (Figure 14).
- At road intersections **where corners are created, existing verge clearance can be maintained** for safe sight distance according to Austroads standards.
- To maintain mitre drains, maintain **existing clearance**. Confine clearance to the original extent of the drain and do not push cleared debris into native vegetation within the natural ground surface.

Note: Large trees cannot be removed after the installation of roadside furniture, such as guardrails, without Native Vegetation Council approval. No Native Vegetation Council approval is required for clearance within the Secondary Clearance envelope as defined above and within the diagrams below.

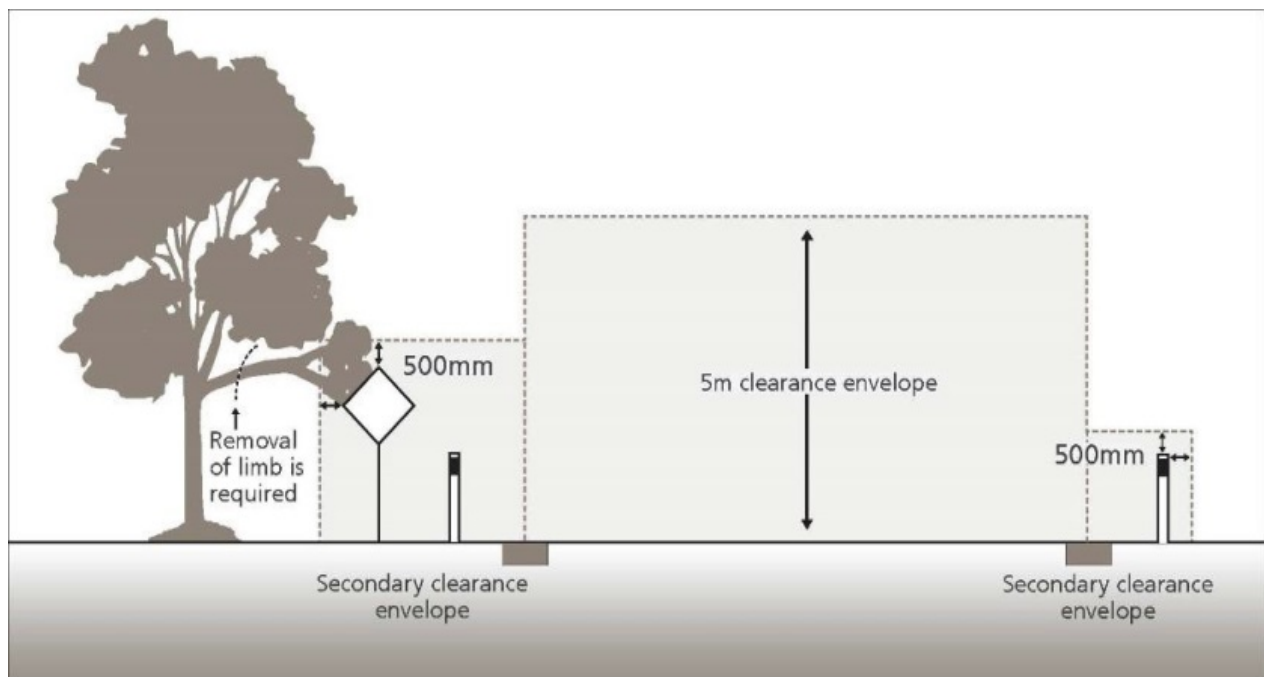


Figure 12: Secondary clearance envelope around existing roadside furniture



Figure 13: Secondary Clearance Envelope around a sign

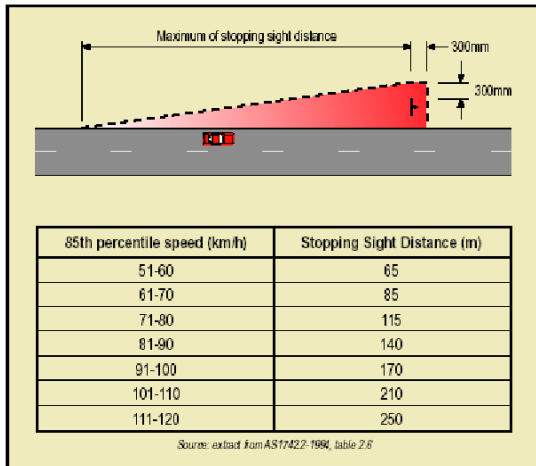


Figure 14: Stopping Sight Distance



Figure 15: Vegetation clearance envelope on Schenscher Road



Table 3.2: Safe intersection sight distance (SISD) and corresponding minimum crest vertical curve size for sealed roads (S<L)

| Design speed (km/h) | Based on safe intersection sight distance for cars1 h1 = 1.1; h2 = 1.25, d = 0.362; Observation time = 3 s | | | | | |
|---------------------|---|-----|-----------------------|-----|-----------------------|-----|
| | R _T = 1.5s ³ | | R _T = 2.0s | | R _T = 2.5s | |
| | SISD (m) | K | SISD (m) | K | SISD (m) | K |
| 40 | 67 | 4.9 | 73 | 6 | - | - |
| 50 | 90 | 8.6 | 97 | 10 | - | - |
| 60 | 114 | 14 | 123 | 16 | - | - |
| 70 | 141 | 22 | 151 | 25 | - | - |
| 80 | 170 | 31 | 181 | 35 | - | - |
| 90 | 201 | 43 | 214 | 49 | 226 | 55 |
| 100 | 234 | 59 | 248 | 66 | 262 | 74 |
| 110 | - | - | 285 | 87 | 300 | 97 |
| 120 | - | - | 324 | 112 | 341 | 124 |
| 130 | - | - | 365 | 143 | 383 | 157 |

Figure 16: Safe Site distance for sealed roads (Taken from Australian Road Research Board).

Verge Clearance

It may be necessary for a Local Council to undertake additional clearance within the verge beyond what is permitted in the Primary and Secondary envelopes due to fast-growing native vegetation within particular roadsides. In these cases, the local council may need to manage regrown verge vegetation.

In addition to the Operating Requirements listed on Pages 36-37, specific requirements apply for verge clearance:

Clearance of vegetation within the verge can occur subject to the following criteria:

1. Clearance is only of regrowth vegetation less than **20 years old** that has previously been cleared as part of roadside maintenance (determined from local council works records, by the size of the trees in the regrowth, or by comparing aerial images of various dates) can be cleared.
2. Clearance is undertaken using **low impact methods** only and should retain native vegetation at a minimum height of 10 cm above ground level (Note; high impact methods include any activity that disturbs the soil or results in plants being uprooted, e.g., graders or bulldozers). Any regrowth trees (with a trunk circumference greater than 10cm) can be removed by poisoning or cut and stump-grind only; and
3. Clearance within the verge, measured from the edge of the carriageway, must be within the maximum widths set out in Table 5 (to a maximum of 3 m for arterial and collector roads, 2 m for a local road); but
 - a. must be confined to a maximum width of 1 metre in **Type A** (vegetation with high conservation significance) roadside vegetation; or
 - b. must be confined to a maximum width of 2 metres in **Type B** (vegetation with moderate conservation significance) roadside vegetation.

Manage verges in a manner to not encourage introduced plants or fast-growing shrubby natives that lead to worse ongoing management problems (e.g., fire hazard, reduced visibility). This commonly occurs when the soil surface is disturbed using high impact methods. Low impact methods do not generally affect the soil surface and aim to retain existing vegetation (e.g., mower, slasher, hydro-



axe). Use of an offset mower/slasher enables regrowth on the verge to be managed effectively without needing to drive machinery on the verge.

In some instances, there is no or little verge with the natural ground surface extending to the shoulder or edge of the carriageway. This usually occurs when the carriageway is widened at some stage after the original road construction. Removal of native vegetation to create a new verge is a road upgrade and is not covered by this section of the guidelines.

Table 5: Road types with maximum proposed road widths in metres. Based on Austroads 2016 Guidelines, Austroads 2006, Guide to road design. Part 3: Geometric design. Austroads, Sydney.

| Road type | Description | Carriageway | | Height (m) | Verge (m) | TOTAL (m) |
|--|---|-------------------|--------------|------------|----------------|-----------|
| | | Travelled way (m) | Shoulder (m) | | | |
| A – Arterial Category 1 or 2 (unsealed) | Principal roads, either sealed or should be sealed | 6 | 1.5 | 5 | 3 - both sides | 15 |
| B – Collector Category 3 | Unsealed secondary roads | 6 | 1 | 5 | 3 - both sides | 14 |
| C - Local roads Category 4 | Local traffic only | 5 | 1 | 5 | 2 - both sides | 11 |
| D - Un-made | Un-opened or vehicle track only | NA | NA | NA | NA | NA |

The width of the verge varies depending on the category of the road, and whether the carriageway has been widened post-construction of the original road. The proposed width of the verge depends on road type and is based on Austroads (2016) guidelines (Table 6).

Process of clearance assessment and approval

To undertake clearance within the verge as permitted by this Section, the following process is to be undertaken:

1. Annual works program

Local Councils to determine which roads are to be managed annually, or on an ad hoc basis.

2. Regrowth

Determine if the regrowth vegetation is less than 20 years of age. This can be determined from Local Council works records, by the size of the trees in the regrowth, or by comparing aerial images of various dates. Where regrowth cannot be determined to an acceptable standard, as determined by the Native Vegetation Council using the methods above, then it will be treated as remnant vegetation.

3. Extent of proposed clearance

Local council determines the width of the verge clearance that is required. Although these guidelines permit clearance up to particular parameters, avoid native vegetation clearance where there are practicable alternatives.



4. Native Vegetation Council approval

If clearance of the verge is less than 1 m from the edge of the carriageway, clearance can occur with no approval. OR

If clearance of the verge is greater than 1 m from the carriageway, the Local Council must undertake an assessment of the roadside vegetation with the assistance of a suitably qualified person, which include:

- tertiary qualifications in botany (or a related field)
- 10 years' experience in a related area
- demonstrated knowledge in plant identification

If the proposed clearance of the verge is greater than 1m from the carriageway, the Annual Works Form datasheet contained in Appendix 1 needs to be completed and discussed with the Native Vegetation Council.

The assessment of proposed verge clearance needs to consider the conservation significance as set out in Table 6. The intent is to allow adequate management of roadside vegetation while minimising impacts on areas of significant and important native vegetation.

To assist this process, the quality of roadside vegetation in many areas has been assessed and mapped by a suitably qualified person during the development of existing Roadside Vegetation Management Plans (under the 2012 guidelines). Also, the locations of nationally or state-listed plant species along roadsides have been mapped in many areas, as has the roadside marker scheme.

Environmental information is available through the online database (NatureMaps). NatureMaps allows the user to display environmental attributes for their region and roadsides. Figure 17 displays the location of significant native vegetation on roadsides. <https://data.environment.sa.gov.au/NatureMaps/Pages/default.aspx>

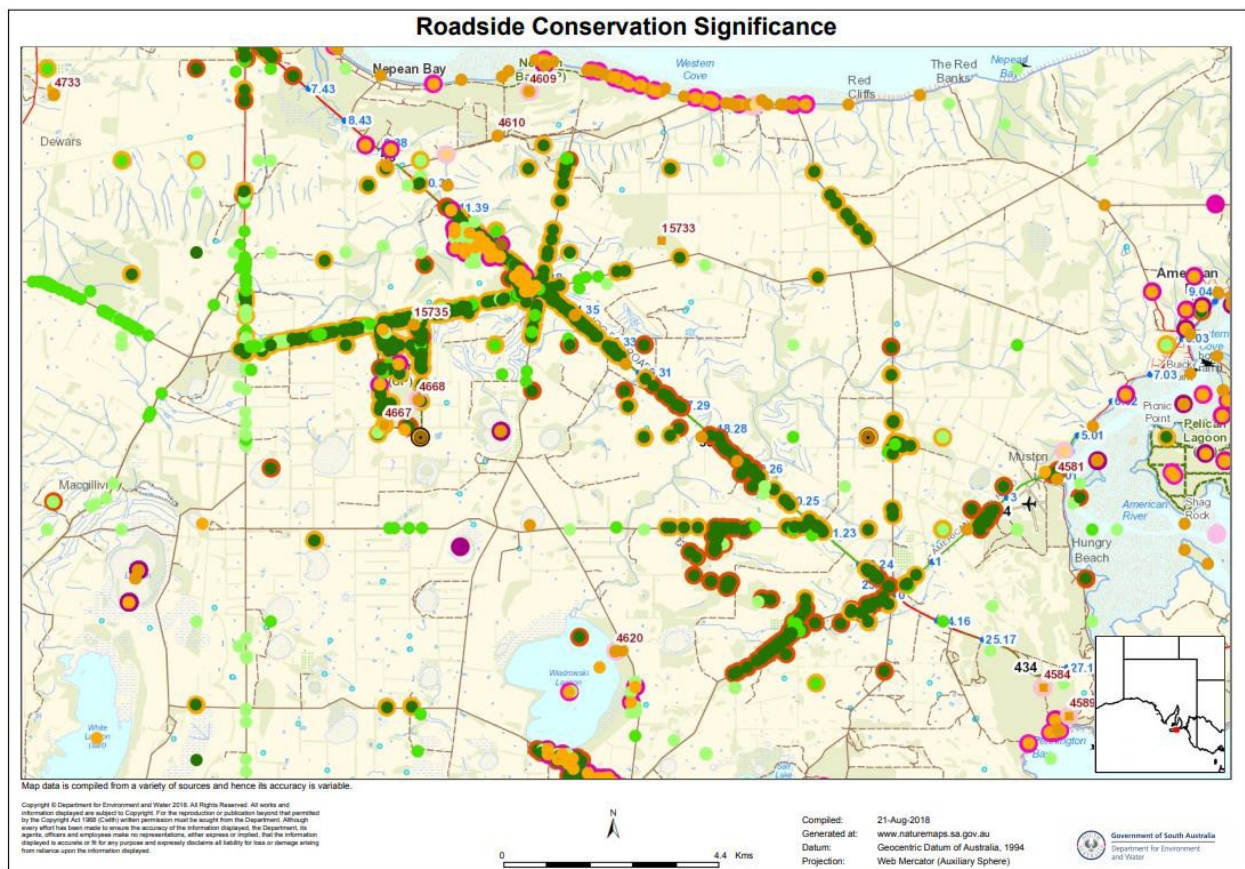


Figure 17: Extract from NatureMaps

An on-ground assessment of the roadside vegetation is supplements this information for the roads to be managed. In undertaking the vegetation assessment, address the attributes in Table 7 and the form in Appendix 1.

5. Submit the form to the NVC for consideration

The local council completes and submits the form in Appendix 1, for the roads that will be subject to vegetation management, to the Native Vegetation Council. The Native Vegetation Council will consider the Guidelines for the Management of Roadside Native Vegetation and Regrowth Vegetation 16 information provided and if approved, Local council can undertake the clearance using the conditions contained in these guidelines.

6. Undertake record-keeping

To ensure compliance with the guidelines, local council and DPTI are required to take 'before and after' photos of the clearance, with an appropriate scale to indicate the width of the verge clearance. Documenting the clearance works will allow the Native Vegetation Branch to audit the works undertaken and provide evidence of compliance if any concerns are received from the public.

7. Ensure compliance to avoid future limitations

To ensure compliance under the regulations, if a clearance occurs outside of the parameters stated within these guidelines, the Native Vegetation Council may limit any future clearance by the offending local council to vegetation less than 5 years old. In addition, any breach will be forwarded onto the Department for Environment and Water Compliance Unit for consideration and action.



Table 6: Roadside Vegetation quality categories (adapted from Stokes A.L, Heard L.M.B, Carruthers S., Reynolds T. (2006) Guide to the roadside vegetation survey methodology in South Australia. DEH, Adelaide).

| Vegetation significance categories | Vegetation description |
|------------------------------------|--|
| Type A | <ul style="list-style-type: none"> Vegetation in Excellent condition - Very little or no sign of alien vegetation in the understory; close resemblance to probable pre-European condition; or Vegetation containing a species or communities listed under the <i>National Parks and Wildlife Act 1972</i>, or <i>Environment Protection and Biodiversity Conservation Act 1999</i>; or Vegetation in an IBRA association with vegetation cover of 5% or less. Roadside vegetation is less than 5 m in width in total (including both sides of the road). |
| Type B | <ul style="list-style-type: none"> Vegetation in Good condition - High proportion of native species and native cover in the understory; a reasonable representation of probable pre-European vegetation; or Vegetation within an area delineated by roadside marker scheme; or Vegetation in an IBRA association with vegetation cover of 10% or less, but higher than 5%. Roadside vegetation is less than 10 m in width in total (including both sides of the road). |
| Type C | <ul style="list-style-type: none"> Vegetation in Moderate condition - Substantial invasion of aliens, but native understory persists; for example, maybe a low proportion of native species and high native cover, or a high proportion of native species and low native cover. |
| Type D | <ul style="list-style-type: none"> Vegetation in Poor condition - The understory consists predominantly of alien species, although a small number of natives persist. |
| Type E | <ul style="list-style-type: none"> Vegetation in Very poor condition - The understory consists only of alien species. |

CONSULTATION AND APPROVAL PROCEDURES FOR THE VERGE

Clearance of vegetation greater than 1 metre into the verge from the edge of the carriageway requires the approval of the Native Vegetation Council.

Consultation with the Native Vegetation Branch is required if the width of the verge is unclear.

Any other clearance can occur without the approval of the Native Vegetation Branch if undertaken in accordance with the requirements of this Section. (<1 m into verge).

Where approval is required, local council are required to complete and submit the Annual Works form contained in Appendix 1 to the Native Vegetation Branch.

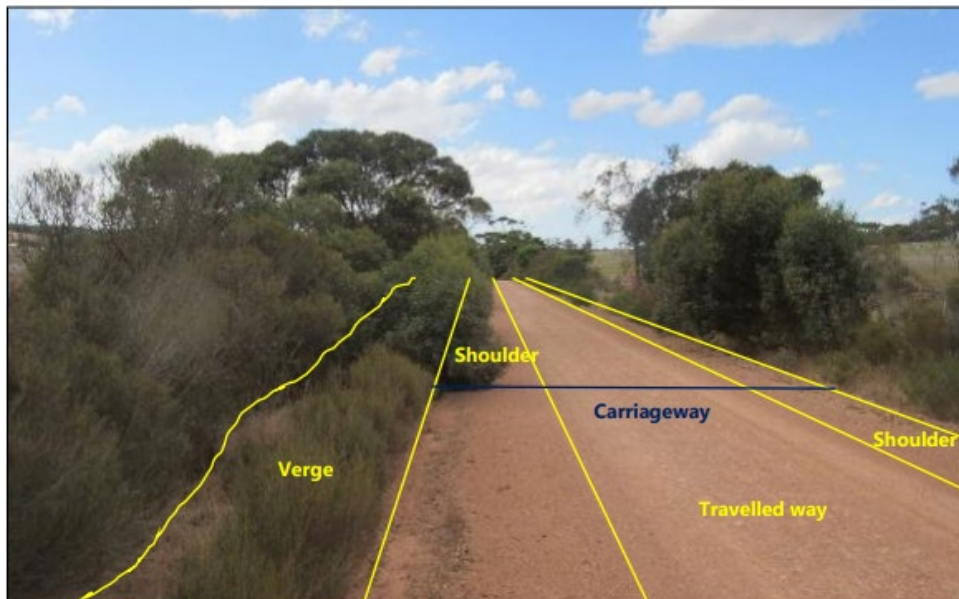


Figure 18: The spoil and regrowth indicates the extent of the verge.



Figure 19: Travelled way and carriageway are the same widths in this instance, with verge regrowth clearance restricted to understorey only.

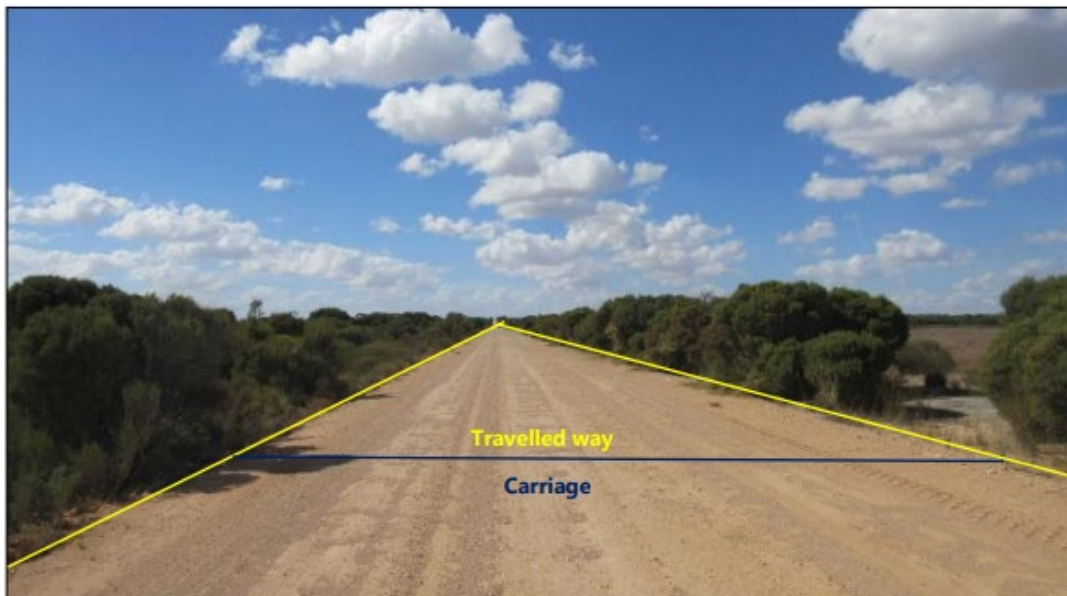


Figure 20: In this instance, there is only remnant vegetation remaining on either side of the road. Any clearance beyond the carriageway would require an application.



Figure 21: Verge is directly adjacent to the bitumen, and regrowth clearance is restricted to understorey only in this instance. The large trees would not fall under these guidelines and clearance would require an application, as they are not considered regrowth.



Public Safety

The section covers native vegetation clearances permitted to be undertaken if required for public safety, and are therefore beyond the scope of Part 1 – Management of roadside vegetation. This Framework for Public Safety covers clearances that need to be undertaken for safety measures related to sight distances, intersections, clearance adjacent to the travelled-way, or other safety concerns that cause a risk to people or property.

The purpose of this framework is to provide guidance when the Public Safety Framework may apply for clearance of **frangible**¹⁰ (vegetation that can typically bend) and **non-frangible**¹¹ (vegetation that cannot bend) native vegetation on roadsides, intersections and rail crossings. The section allows for clearance to occur beyond that provided for in Part 1 – Management of roadside vegetation, where required for public safety. The section allows for clearance to occur for safety measures related to sight distances, intersections, clearance adjacent to the travelled way, or other safety concerns that cause a risk to people or property.

The public safety framework **does not** apply to any clearance associated with new works or upgrades of infrastructure. This includes intersection realignment/modification, road widening activities, retrospective upgrade works, new intersections and new road works such as new roads, construction of rest areas, installation of safety cameras and overtaking lanes or weigh stations. Clearance associated with new works or upgrades requires application and approval under *Regulation 12(34)* Infrastructure.

For the framework to apply, the road authority can clear non-frangible native vegetation within specified distances along sealed and unsealed roads and at rail crossings, intersections and curves with written approval from the NVC. It is a requirement that the road authority as far as practicable addresses the Mitigation Hierarchy to avoid or minimise the impacts that any proposed actions may have on biodiversity or native vegetation (see Part 1 General Roadside Maintenance Principles for a full explanation of the Mitigation Hierarchy). Clearance will be approved without the need for an SEB requirement.

Note that some activities may also require approval under other legislation; for example, the *Development Act 1993* and the *Environment Protection and Biodiversity Conservation Act 1999*.

Any areas approved for clearance under this framework can subsequently be maintained under *Regulation 11(23)* either following the guidelines for the Management of Roadside Vegetation or incorporated into the Maintenance Section of the Council's Roadside Vegetation Management Plan (RVMP).

Note: This Framework for Public Safety replaces the previous Framework for clearance of Native Vegetation under *Regulation 11(23)* Roadside or rail corridor vegetation management (October 2012).

¹⁰ Understorey vegetation or plants with slender stems which give way break or uproot on impact

¹¹ Plant species with a stem diameter (at maturity) of 100mm or greater with rigid, large or sturdy stems which will not readily break, bend or crush upon impact by a typical passenger vehicle, and could be expected to inflict significant damage to the vehicle and possibly cause injury to vehicle occupants.



Public Safety Categories

In this framework, there are three categories for assessing clearance of native vegetation on roadsides, intersections and rail crossings for public safety purposes. The three clearance categories are:

Category 1 - Sight distance line/triangles at road intersections and rail crossings

This section applies to both frangible and non-frangible native vegetation to address an existing risk to public safety along road intersections and rail crossings.

The size of the sight triangle established under the Austroads Guide is dependent upon factors such as traffic volume, designated road speed and daily vehicle and heavy vehicle usage. This approach is easy to implement and transparent in its calculation of approved sight distance lines for vegetation clearance associated with road intersections and rail crossings and are consistent with a nationally accepted benchmark used by road authorities.

Where practicable, calculating the visibility triangle for the clearance of native vegetation should be limited to meet the required standards as outlined in Austroads Guide to Road Design: Part 4: Intersections and Crossings-General (2009). The determination of the offset from the edge of the travel way is dependent on the stopping sight distance, which in turn increases with speed. Consequently, alternative mechanisms to remove the safety issue must be fully considered.

The clearance of **non-frangible** native vegetation along sight lines should be limited to targeted removal.

Depending upon the type of vegetation/biodiversity present within the sight triangle, trimming of understory **frangible** native vegetation (if required) should be limited to a height that sustainably maintains the understory and not cleared down to bare earth.

Category 2 - Clearance adjacent to the edge of the travelled way

This is the area defined as a zone where non-frangible native vegetation can be cleared adjacent to the edge of the travelled way for sealed roads, or adjacent to the edge of the grader line as defined in Councils' infrastructure plan for unsealed roads. It applies differently to the following situations;

1. Category 2 (Sealed- ≤ 80 km/h)
2. Category 2 (Sealed- > 80 km/h)
3. Category 2 (Unsealed)

This section outlines what can be done to manage **non-frangible** native vegetation to protect Public Safety along sealed and unsealed roads based on set widths from **the edge of the travelled way**.

Non-frangible vegetation may be removed with NVC approval if it presents a road safety issue and the road authorities first demonstrate that they have considered the Mitigation Hierarchy (Part 1) to avoid or minimise the impacts that any proposed actions may have on biodiversity or native vegetation. The road authority must show it has considered other safety improvement options as opposed to clearance. On sealed roads, the Category 2 zone is dependent upon road speed design (km/hr). On unsealed roads, the Category 2 zone is not dependent upon road speed design (km/hr) rather it is based on set widths from the edge of the travelled way. The Category 2 zone is based on *Austroads guideline* that demonstrates a 50% probability that a vehicle travelling at speeds and hitting **non-frangible** native vegetation within that Category 2 zone, would likely result in a casualty or serious injury.



Sealed Roads

On sealed roads with a speed design of less than 80 km/hr, up to 2 metres of **non-frangible** native vegetation can be reduced, modified or removed from **the edge of the travelled way** for public safety.

On sealed roads with a speed design of greater than 80 km/hr, up to 3 metres of **non-frangible** native vegetation can be reduced, modified or removed from **the edge of the travelled way** for public safety.

Table 7: Sealed Roads - Category 2 zone widths adjacent to the edge of the travelled way

| Speed limit (km/hr) | Category 2 zone widths adjacent to the edge of the travelled way |
|---------------------|--|
| ≤80 km | 2 m |
| >80 km | 3 m |

Unsealed Roads

On unsealed roads, up to 2 metres, either side of the defined carriageway (the edge of the grader line as defined in Councils' infrastructure plans) can be cleared of **non-frangible** native vegetation for the purpose for public safety. The Category 2 zone is capped at a total width including the carriageway itself of up to 12 metres.

This option is tailored to take into account varying road widths. It caters for narrow unsealed roads where only 2 m of **non-frangible** native vegetation can be cleared either side (i.e., 4 m carriageway width plus 2 m **non-frangible** clearance either side total 8 metres). Conversely, a 10 m carriageway can only clear 1 metre either side of the carriageway as the Category 2 zone is capped at 12 m (Table 8).

It caters for wider roads where the road design incorporates an existing safety margin within the carriageway width.

Table 8: Category 2 zone widths adjacent to the edge of the travelled way

| Carriageway width (metres) | Category 2 zone - carriageway width plus 1m either side of Carriageway (capped at 12 m) |
|----------------------------|---|
| 6 m | $6 + 1 + 1 = 8$ m |
| 6.5 m | $6.5 + 1 + 1 = 8.5$ m |
| 7 m | $7 + 1 + 1 = 9$ m |

Category 3 - Clearance beyond Category 1 and 2 zones

This is the area beyond the Category 1 and 2 zones. If the road authority can demonstrate that the non-frangible native vegetation is a risk to public safety, clearance may be approved.

Category 3 applies to the areas/activities that are out of the scope of Category 1 and Category 2 but still may present as a public safety concern; this includes:

- Beyond Category 1 approved sight distance triangles/lines, or
- Beyond Category 2 specified distances from the edge of the travelled way,
- Applies only to safety treatments which result in clearing:
 - Less than 6 scattered trees (**non-frangible**)
 - Less than 0.5 ha canopy area of non-frangible vegetation, and
- Applies to trees that present a danger of falling or a limb or some other part of the plant falling, causing a risk to people or property. Consider any application concerning this provision against the requirements of *Native Vegetation Regulation 8(6)* – Safety of Persons and property.



If the proposed safety treatments do not fall within this threshold, the framework will generally not apply. However, the Native Vegetation Council will consider matters on a case-by-case basis where sufficient justification can be provided.

For the justification of clearance of non-frangible native vegetation within this Category, the road authority should demonstrate that they have considered the Mitigation Hierarchy (Part 1) to avoid or minimise the impacts that any proposed actions may have on biodiversity or native vegetation. The road authority needs to show it has considered other safety improvement options as opposed to clearance.



Figure 22: Vegetative management by cutting with a saw and slashing prunings on the ground



Table 9: Summary of clearance rules applying to road categories

| | Category 1 Sight distance line/triangles at intersections and rail crossings | Category 2 Clearance adjacent to edge of travelled way | Category 3 Clearance beyond category 1 and 2 zones |
|--|---|--|---|
| Justification | Consideration must be given to: Mitigation Hierarchy and other safety improvement options to be detailed in the application form | | |
| Clearance that can be applied for | <p>Clearance of both frangible and non-frangible native vegetation (if required) for the establishment of safe sight lines at road intersections and rail crossings</p> <p>Clearance must be consistent with clearance guidelines outlined in <i>Austrroads Guide to Road Design: Part 4: Intersections and Crossings-General 2009</i>, and AS 1742.7:2007 <i>Manual of uniform traffic control devices, Part 7: Railway Crossings</i>.</p> | <p>Sealed roads Removal of non-frangible native vegetation:</p> <ul style="list-style-type: none"> • ≤80km/hr = up to 2 m from the edge of travelled way • >80km/hr up to 3 m from the edge of travelled-way <p>Unsealed roads</p> <ul style="list-style-type: none"> • up to 2 m either side of the edge of the grader line, capped at a total width including the travelled-way itself of up to 12 m | <p>Areas or activities beyond the scope of Category 1 and Category 2 but still present as a public safety concern</p> <p>AND</p> <p>Applies only to safety treatments which result in clearing:</p> <ul style="list-style-type: none"> ➢ Less than 6 non-frangible scattered trees ➢ Less than 0.5 hectares canopy area of non-frangible vegetation <p>AND</p> <p>Applies to trees that present a danger of falling, or if a limb or some other part of the plant is in danger of falling, causing a risk to people or property</p> <p>Note: the Native Vegetation Council will consider matters that do not meet the above criteria on a case-by-case basis, should sufficient justification be provided.</p> |
| Application | Complete application form – refer to Appendix 2 | | |
| Written approval | Clearance approved by the Native Vegetation Council or a delegate | | |



Guidelines – Public Safety Clearance



Figure 23: Pruning may be required to maintain clearance near power lines

If clearance greater than that considered exempt in Section 3.2 - Roadside Maintenance, is proposed-

- Firstly, contact NVB.
- Acting on their advice, provide the necessary data for the NVB to assess whether *Regulation 11(23)* Roadside or rail corridor vegetation management is applicable or whether clearance falls under *Regulation 12(34)* Infrastructure

Installation and Maintenance of Services

Objectives

1. To minimise the impact of installation and maintenance of services to native vegetation within road reserves.
2. To maintain a safe operating environment for services.

Information

Traditionally, services such as power lines, water supplies, gas and telecommunications are often established along road reserves. Construction of these services can involve clearing native vegetation, as can ongoing maintenance of those services.

Some service providers have their own external codes of practice for installation and maintenance of their service, for example the “Telecommunications Code of Practice 1997”.

The Rural City of Murray Bridge has adopted some general procedures to further protect native vegetation within road reserves. This section describes how the use of road reserves for installation and maintenance of power, water, and telecommunication and gas services is controlled.



Guidelines – Installation and Maintenance of Services

New Services

Consultation and Approval Procedures for Clearance Associated with installation and Maintenance of Services

Clearance approval is required for clearance associated with any new services or maintenance clearance in excess of existing standards (excluding carriers authorised under the *Telecommunications Act 1997* to install a low impact facility); Refer to *Regulation 12(34) Infrastructure*.

Approval is not required for maintenance of existing clearances – refer to *Regulations 8(4) Clearance under the Electricity Act 1996 or Emergency Management Act 2004* and *8(2) Maintenance of Infrastructure*.

Any new services require a submission to the NVC under *Native Vegetation Regulation 12(34) Infrastructure – Building or provision of infrastructure*. This regulation permits clearance of native vegetation for the construction or expansion of a building or infrastructure that the Minister for Environment and Conservation considers being in the public interest, provided that it is located such that it avoids or minimises the impact on significant areas of native vegetation.

Note: For Telecommunications, a carrier authorised by the Australian Communications Authority under the *Telecommunications Act 1997* to install a low impact facility (e.g., underground cable) is immune from some State and Territory laws, and environmental laws, including the *Native Vegetation Act 1991*. However, the carrier must comply with the requirements of the *Telecommunications Act* and the *Telecommunications Code of Practice 1997*.

Maintenance of services

Maintenance works associated with electricity supply and other infrastructure, such as water and gas, are permitted under *Native Vegetation Regulations 8(4) Clearance under the Electricity Act 1996 or Emergency Management Act 2004* and *8(2) Maintenance of Infrastructure*. See A Guide to the Regulations under the *Native Vegetation Act 1991* for more information, http://www.environment.sa.gov.au/Conservation/Native_vegetation/Managing_native_vegetation.

The Rural City of Murray Bridge requirements are to inform the NVC of any works that are to occur on roadsides.



Pest Plant and Animal Control

Objectives

1. Reduce the establishment of new pest plants and animals in road reserves.
2. Reduce the spread of existing pest plants and animals and their range and numbers.
3. Reduce the impacts of pest plants and animals on roadside native vegetation.
4. Minimise disturbance and damage to native vegetation.

Information

Pest plants and pest animals are also commonly known as ‘weeds’ and ‘feral animals’. They can invade rural land or natural habitats and because of their characteristics and/or location, they can cause economic, ecological, physical or aesthetic problems, often with significant potential impacts on local and regional biodiversity.

Pest plants and animals can be categorised as those that require control under legislation (“**declared**” species) and those that, whilst still damaging, are not considered significant enough to warrant legislative control at this stage.

The control of declared species on roadsides falls under the jurisdiction of the regional **Landscape Boards** under the **Landscape South Australia Act 2019**. Landholders are responsible for the control of pest species on their land and Landscape Boards have the responsibility to control declared pest plants or pest animals on road reserves.

Within some local council areas, **landholders** may be required to contribute to the control of pests on adjacent roadsides. Where landholders opt to control the pests on adjacent roadsides, they must seek approval of the Landscape Board and the local council. Local councils can only give consent if they are acting in accord with the **Native Vegetation Act 1991** and have the relevant approvals or exemptions regarding clearance.

In this instance, any clearance of native vegetation must be compliant with *Native Vegetation Regulation 8(15)* – Plant and Animal Control. Under this regulation is a guideline that describes the level of impact on native vegetation that is permitted. See the following link for details -

https://www.environment.sa.gov.au/files/sharedassets/public/native_veg/nvc-guideline-plant-animal-control-fact.pdf.



Rabbit warrens on a roadside.



Gazania infestation.



Weeds of National Significance (WoNS): Thirty-two Weeds of National Significance have been identified by Australian governments based on their invasiveness, potential for spread and environmental, social and economic impacts. A list of 20 WoNS was endorsed in 1999 and a further 12 were added in 2012. Ten of these are listed below and most apart from Bridal Creeper and Boxthorn are low in numbers with the Rural City of Murray Bridge.

Consultation and Approval Procedures for Pest Plant and Animal Control

- (a) Clearance approval is required where a proposed animal or plant control program is likely to cause significant damage to native roadside vegetation.

“Significant” in this context includes:

- ripping of warrens where native vegetation will be affected;
- non-selective spraying in mixed weeds/native vegetation; and
- burning of native vegetation to assist pest control.

It does not include minor damage, such as removal of branches to gain access to pests.

The NVMB Unit is able to determine whether the proposed clearance is of a sufficiently significant nature to warrant referral on to the NVC for decision.

- (b) In districts where there are serious problems with roadside pest control, local Boards are encouraged to develop overall management strategies in consultation with the Native Vegetation Branch. This can avoid the need for consultation with the Unit on a case-by-case basis. This approach has been adopted in several local council areas.
- (c) Where pest control works are planned that could affect roadside native vegetation, the local authorised Landscape SA Management Officer should be the first point of contact. The need for consultation with the Native Vegetation Branch can then be determined.

Bridal Creeper (*Asparagus asparagoides*); although this is a WoNS, rust fungus has significantly reduced the threat within the Rural City of Murray Bridge. The current thoughts are watch and see as control can have a detrimental effect on native vegetation if not treated correctly. **Prickly Pear** (*Austrocylindropuntia* spp., *Cylindropuntia* spp., *Opuntia* spp., *Vachellia nilotica*), **Boneseed** (*Chrysanthemoides monilifera* subsp. *monilifera*), **African Boxthorn** (*Lycium ferocissimum*), **Blackberry** (*Rubus fruticosus* aggregate), **Silver Nightshade** (*Solanum elaeagnifolium*), **Athel Pine** (*Tamarix aphylla*), **Gorse** (*Ulex europaeus*), **Cotton Bush** (*Gomphocarpus physocarpus*), **Bridal Broom** (*Retama monosperma*), **Silverleaf Nightshade** (*Solanum elaeagnifolium*), **Boneseed** (*Chrysanthemoides monilifera*), **Gorse** (*Ulex europaeus*), **Dog Rose** (*Rosa canina*), **White Weeping Broom** (*Retama monosperma*), **African Lovegrass** (*Eragostris curvula*), **Rhodes Grass** (*Chloris gayana*), **Buffel Grass** (*Cenchrus ciliaris*).

The Rural City of Murray Bridge recognises its responsibility to help prevent the further spread of pest plant and animal species and will assist landholders through a partnership approach to prevent the spread into private landholdings and roadsides through abatement programs and the provision of information on control methods.

Guidelines – Pest Plant and Animal Control

Some important basic principles are:

- small infestations of weeds may be best dealt with using minimum disturbance techniques such as hand-pulling (while still minimising soil disturbance) and ‘cut-and-swab’ with herbicide;



- it is usually best to work from the best areas of bush or areas of low weed infestation towards denser infestations;
- spot-spray and selective herbicides should be used carefully to avoid off-target damage of native plants;
- where natural regeneration of native species is not occurring, revegetation with local native species can be an effective long-term means of weed control;
- pest control methods usually require an integrated approach using several methods to both control the pests and minimise impacts on native vegetation.

General Guidelines

Under Section 221 of the *Local Government Act, 1999*, it is illegal for landholders to undertake pest plant and animal control work on the road reserve adjoining their property without authority from the Rural City of Murray Bridge.

Where adjoining landholders are planning roadside pest control that could affect native vegetation, the Murraylands and Riverland Landscape Board should be the first point of contact. The need for consultation with the Native Vegetation Conservation Section can then be determined.

The Rural City of Murray Bridge in collaboration with landholders controls pest plants other than declared species.

In districts where there are serious problems with roadside pest control, local Landscape Boards are encouraged to develop overall management strategies in consultation with the Native Vegetation Branch. This can avoid the need for consultation with the Unit on a case-by-case basis.

Suitably qualified contractors or Council staff trained in the identification of native vegetation and weeds will be used to implement control procedures that minimise disturbance and damage to native vegetation.

Impacts to native vegetation during control works must be minimised according to the requirements of the Landscape SA Act 2019, and also comply with NVC guidelines 'Clearance of Native Vegetation associated with the Control of Plant and Animal Pests' (excerpt below) – see the NVC website for full details.

The clearance of native vegetation during programs for control of declared animals and plants must be kept to the minimum needed for effective pest control (following advice from the local Landscape Authorised Officer and must be using these guidelines.

1) Pruning of Native Vegetation

The pruning of native vegetation, if essential to provide access for pest animal and plant control, is acceptable provided that it is kept to a minimum and does not affect the overall viability of the plant(s) involved.

2) Spraying of herbicides in Native Vegetation

Spraying of declared plants in native vegetation is acceptable provided that a careful and selective approach is used (e.g., spot-spraying) and damage to nearby native vegetation is avoided or minimised. The use of herbicides must be in strict accordance with Landscape SA advice and with instructions for use provided by the manufacturer.

Any broader spraying program in native vegetation (e.g., boom-spraying) requires the endorsement of the Native Vegetation Branch (NVB), DEW, and may require the consent of the NVC through a clearance application.



3) Removal of entire native plants

The removal of entire native plants (if considered essential to facilitate animal and plant control) must be discussed with and endorsed by the NVB.

This consultation can take one of two main forms:

a) Case-by-case consultation

Minor clearance of native species known to be common in a district may be resolved through verbal or electronic communication without the need for a site assessment by NVB staff (8204 1910). For larger scale clearance, or for cases where the identity of the native plants is unclear, a site inspection will usually be undertaken.

NOTES:

- (i) In this situation, either the landholder undertaking the work or the State authorised officer, the authorised officer should initiate the consultation by contacting the NVB.
- (ii) Whether a proposed clearance is “minor” (and therefore not warranting a site inspection) will be determined through discussion between the NVB and the landholder / authorised officer. As a guide, the clearance of up to ten Kangaroo Thorn (*Acacia ligulata*) for rabbit control, or up to ten Nitre Bush (*Nitraria billardierei*) for rabbit or boxthorn control could be regarded as “minor”.
- (iii) Where minor clearance is agreed without an NVB inspection, it will be recorded by notation on the appropriate file. By notifying the NVB, any reports of illegal clearance can be managed or dispelled rapidly. Where an NVB inspection is undertaken, any endorsement is to be advised in writing.
- (iv) If as a result of the above consultation, the NVB determines that a clearance proposal is of particular environmental significance or sensitivity, the proposal is to be referred to as a clearance application to the NVC. This may occur, for example, where a substantial area of native vegetation is involved, or where the clearance involves plant species of particular conservation significance.

b) Consultation based upon a broader planning approach

- Broader planning arrangements may be developed between Landscape SA Boards and the NVC.
- For example, it may be agreed that certain methods will be applied within a Board district for control of pests often associated with particular native species - such as boxthorn or rabbits associated with Nitre Bush, or rabbits associated with Banksia-heath vegetation. This would be in the form of a management plan initiated by the local board and prepared in consultation with the NVB. Once endorsed by the NVC, the plan could be put into effect and the need for consultation with the NVB about each program would be avoided.
- It is envisaged that plans of this type would normally be prepared on a Board basis. However, there may be issues and management approaches of State-wide relevance, in which a State-wide management plan could be prepared, presumably at the initiation of the Landscape Board.



4) The control of declared animals and plants in native vegetation should take the following factors into account:

- the removal of tree saplings or more mature trees is not normally necessary for pest control;
- very localised pest control issues might be manageable with hand-held equipment rather than heavier machinery which causes a greater environmental impact;
- there is an increasing range of pest control equipment available, some of which is less environmental impacting than the equipment used more traditionally;
- any control method involving soil disturbance has the potential to promote the further establishment of declared plants or other introduced plants which may disrupt the ecology of the native vegetation: Soil disturbance should be minimised and control works should be followed with site monitoring and selective eradication of any introduced plants which re-establish; and fire has some potential for inclusion in pest control programs in native vegetation to improve access, reduce the bulk of declared plants, and possibly to promote the regeneration of native species: however, the issues associated with fire can be complex and any such burning in native vegetation should be discussed with the NVB to avoid the possibility of a breach of the Act.

Plant Diseases

Objectives

1. To minimise the spread of Broomrape and other soil-borne diseases in the local council area.
2. To manage infected areas in such a way as to minimise the effect on the environment and recreational activities.
3. To protect uninfected areas and minimise the risk of them becoming infected.
4. To promote a “Whole of Community” approach to the management of Broomrape (and /or other diseases) in the local council area.

Information

Diseases of native plants such as *Phytophthora* and Mundulla Yellows can occur along road reserves. Currently, there is no *Phytophthora cinnamoni* or Mundulla Yellows within the Rural City of Murray Bridge.

For further information on *Phytophthora* and Mundulla Yellows contact the DEW’s Biosecurity Ecologist, Nature Conservation Unit or contact the Native Vegetation Branch for advice.

Broomrape¹²

Australian native broomrape (*Orobanche cernua* Loefl. var. *australiana*) is widely distributed but rare, parasitises native daisy bushes and has been found growing on native plants along the Murray River.

Exotic Broomrape is a parasitic plant that can be found on many broad-leaved plants; known hosts are canola, carrot, lettuce, tomato, capeweed and vetch. Broomrape was first discovered in 2000 when it was reported as scattered across a 70 x 70 km area near Murray Bridge, South Australia. Any movement of soil, water and or plant material has the potential to spread Broomrape to new areas.

¹² https://www.pir.sa.gov.au/_data/assets/pdf_file/0011/288947/branched_broomrape.pdf

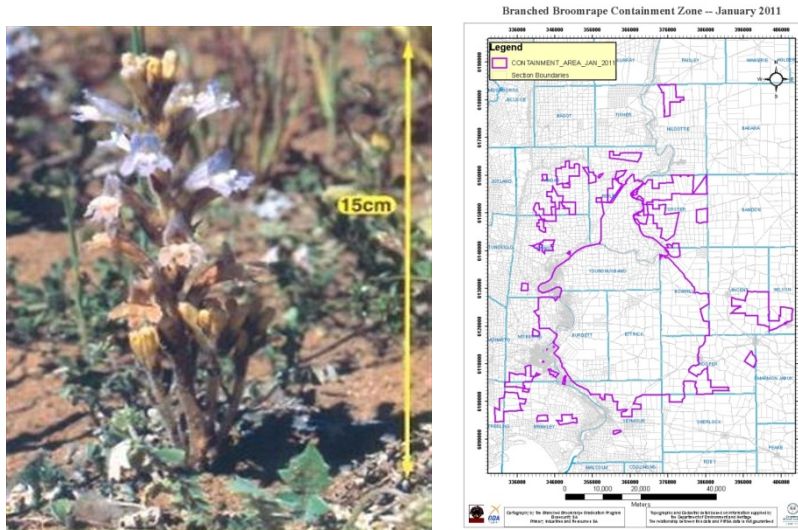


Figure 24: Area showing infestation of Broomrape in South Australia

Guidelines – Plant diseases

Permission

Any activity occurring within a road reserve infested with a soil-borne plant disease such as Broomrape requires the consent of the DEW (Landscape SA 8532 9100).

Consent will only be granted if work is conducted according to appropriate guidelines of best practice.

Management Guidelines

The Rural City of Murray Bridge has been identified in a vulnerable area for Broomrape, and will adhere to the 'Branched Broomrape Management Guidelines'¹³.

This provides a framework for the management of Broomrape by all Government and non-government organisations, landholders, community groups and individuals.

Some general principles include:

- avoid driving, riding or walking in areas when soils are wet and sticky;
- stay on designated roads and track because vehicles, bikes and people moving off roads into infested areas may pick up infested soil and transfer it to uninfested areas;
- contact the Broomrape centre to be disinfected before leaving an infested area; and
- obey road signs because roads and tracks may be closed, sometimes permanently, to help stop the spread of Broomrape.

For further information on Broomrape contact the PIRSA's [Biosecurity Ecologist](#), Nature Conservation Unit or contact the Native Vegetation Branch for advice.

¹³https://www.pir.sa.gov.au/_data/assets/pdf_file/0014/238001/On_Property_Management_of_Branched_Broomrape_v_2.pdf



Clearance for Fence lines

A landholder who wishes to clear native vegetation on a road reserve to enable **construction or maintenance of a boundary fence** requires local council consent.

Objectives

1. To enable landholders to gain appropriate access to fence lines for maintenance and construction purposes.
2. To minimise the impact and disturbance of native vegetation by clearance for fence line construction and maintenance.
3. To encourage alternative approaches for erecting fences that minimise clearance of roadside native vegetation.

Information

A landholder who wishes to clear native vegetation on a road reserve, to enable construction or maintenance of a boundary fence, requires written permission from the Rural City of Murray Bridge under the *Local Government Act 1999* (Section 221), and may, depending on the amount of vegetation involved, also require NVC approval.

In granting any consent, the Rural City of Murray Bridge must comply with the standards outlined below.

Consultation and Approval Procedures

Clearance approval from the NVC is required for any vegetation clearance along fence lines that exceeds the following standards:

- **Where the roadside vegetation consists largely of trees, only branches protruding through or overhanging the fence, or trees growing on the actual fence alignment, can be removed.**
- **Where shrubs or bushes are growing through the fence line, that vegetation growing within 100 mm of the fence alignment can be trimmed. Whole shrubs must not be removed if only foliage is on the fence.**

Consultation with the Native Vegetation Council and Native Vegetation Biodiversity Management Unit should occur through the local council.

If rare or threatened plant species are present, all care should be taken to protect them. If necessary, contact the Native Vegetation Branch for advice.

Note: These requirements take into account that the adjoining landholder can usually clear up to 5 metres width on the private land abutting the road, thus allowing for vehicular access to the fence (see *Regulation 8(14) – Fences*). NOTE that this does not provide an automatic right to clear a five-metre strip along a fence. If vegetation on an adjacent property is located within five metres but does not

Guidelines – Fence line clearance for installation

Permission

- Removal of native vegetation on a road reserve for construction or maintenance of a boundary fence requires the consent of the Rural City of Murray Bridge.
- Vegetation growing on the boundary alignment may be trimmed to the alignment.



- Posts are permitted to be placed on the boundary alignment however, wire/ mesh must be on the inside of the property for ease of installation, maintenance and safety so that stock cannot push the wire over.
- Clearance may be required where a post is proposed to be installed up to 100mm around each post onto Council's road reserve.
- Where the roadside vegetation consists of mallee trees, limbs & stumps growing on the fence alignment or up to 100mm of the fence alignment may be trimmed up to 100 mm, leaving all other mallee upright or leaning away from the fenceline. Council Senior Horticultural Officer (Arborist) will assess any trees that may present a risk and may be required to be removed.
- Where the roadside vegetation consists of single stemmed trees, only branches protruding through or overhanging the fence, or trees growing on the actual fence alignment, may be removed where they impact on the fence.
- Where large shrubs, shrubs, ground covers, climbers, sedges or grasses are growing through the fence line, the vegetation growing within 100 mm of the fence alignment can be trimmed as required for the wire to be clear of obstruction up to 100 mm.
- In granting any consent, Council will comply with the following requirements:
 - Clearance approval from the NVC is required for any native vegetation clearance along fence lines which exceeds the above standards.
 - If rare or threatened plant¹⁴ species are present, all care should be taken to protect them. If necessary, contact the Native Vegetation Branch for advice.
 - Any unauthorised clearance will be referred by the Rural City of Murray Bridge and to the Native Vegetation Branch.

These requirements take into account that the adjoining landholder can usually clear up to five metres in width on the private land abutting the road, thus allowing for vehicular access to the fence – refer to *Regulation 8(14) – Fences*.

Clearance methods

- Low impact methods of clearance (e.g., minimal ground disturbance, cutting cleanly rather than breaking branches, slashing, trimming, mowing, or rolling) should only be used when clearing vegetation to reduce potential weed invasion and erosion problems.
- Cleared vegetation should not be deposited on or amongst other native vegetation but should be disposed of in a manner that does not affect native vegetation, unless it is useful as habitat for wildlife, or is scattered sparsely amongst the remaining vegetation.

Re-locating fences

- Landholders wanting to replace boundary fences may consider re-locating the new fencing a few metres into their properties to minimise potential impacts on roadside vegetation. This can also potentially reduce construction and maintenance costs. The narrow strip between the old and the new fence can be maintained clear of any regrowth to minimise impacts on the new fence, and also act as a firebreak between the roadside and the property. **This is strongly supported.**
- An alternative to the removal of trees in line with the property boundary may include constructing a simple strut arrangement that allows a fence to deviate a short distance around a tree. Wires are not attached directly to the tree, thus minimising potential damage to the tree (Figure 30).

¹⁴ Rare and threatened plant species are defined in the Schedule of the *National Parks and Wildlife Act 1972* or the *Environment Protection and Biodiversity Conservation Act 1999*. Removal of plants listed under the *Environment Protection and Biodiversity Conservation Act 1999* may require approval under that Act.



Note: the below approach may not be appropriate for smaller trees, and an effort should be made to avoid structural roots when placing the posthole for the strut next to the tree.



Figure 25: Fence Line Arrangement

Left and middle: A simple strut arrangement that allows a fence to deviate a short distance around a tree. Wires are not attached directly to the tree, thus minimising potential damage to the tree. Right: The same strut arrangement seen from the side. The strut holding the wires away from the tree is directly behind the trunk.



Figure 26: Poor relocation of a fence line

Left: Soil disturbance increases the presence of weed infestation and dumping vegetation onto road reserve smothers understory plants. This is illegal works.

Right: Unclean cutting causes infection and disease.



Figure 27: Excellent fence line and roadside clearance

Clearance for Access to Adjoining Land

New access points are often needed from the road to adjoining land. For example, a primary producer may need new access to a paddock, possibly to cater to wide farm machinery.

When clearing for access, **the highest priority is the safety** of the person accessing the property. The conservation of native vegetation is secondary, but once safety has been addressed, the clearance option that requires the least disturbance of native vegetation of the lowest conservation significance should be selected.

Where clearance of native vegetation is unavoidable, the following standards should not be exceeded:

- For normal vehicle access: 5 m wide plus minimum clearance of frangible vegetation for sight distance along the road reserve.
- For wider farm vehicles: 10 m wide plus minimum clearance of frangible vegetation for sight distance along the road reserve.
- If rare or threatened plant species are present, all care should be taken to protect them. If necessary, contact the Native Vegetation Branch for advice.

These guidelines do not apply to clearance required to establish access for new development or use (e.g., associated with a new house site) or where an existing access point is available. In these circumstances, an application under *Regulation 12(34)* Infrastructure is required.



Figure 28: Poor Driveway sight clearance



Good driveway sight clearance

Consultation and Approval Procedures for Access to Adjoining Land

Clearance of roadside vegetation to provide access to adjoining land requires the consent of the Rural City of Murray Bridge.

If there is more than one option which will provide safe access, the option which involves least disturbance of native vegetation or vegetation of lower conservation significance, should be selected.

Where some clearance of native vegetation is unavoidable, this should not exceed the following standards:

Guidelines – Clearance for access to adjoining land

Permission

- Removal of native vegetation on a road reserve to provide access to adjoining land requires the consent of the Rural City of Murray Bridge.
- Clearance approval from the NVC is required for any native vegetation clearance that exceed the above standards.
- Any unauthorised clearance will be referred by the Rural City of Murray Bridge to the Native Vegetation Branch.

Clearance methods

- Low impact methods of clearance (e.g., minimal ground disturbance, cutting cleanly rather than breaking branches, slashing, trimming, mowing, or rolling) should only be used when clearing vegetation according to these standards, to reduce potential weed invasion and erosion problems.
- Cleared vegetation should not be deposited on or amongst other native vegetation but should be disposed of in a manner that does not affect native vegetation, unless it is useful as habitat for wildlife, or is scattered sparsely amongst the remaining vegetation.



Avoiding unnecessary clearance

- Care must be taken to avoid plant communities of conservation significance and naturally open areas such as native grassland, sedgeland and wetland.
- Where possible, access points will not be permitted on Category “A” (i.e., best quality) road reserves.
- A suitably qualified person will conduct an inspection to assess options for access points, and negotiate an access point that is safe and minimises disturbance to native vegetation.

Fire Management

In certain areas, manage native vegetation for fire management to assist during times of bushfire, to reduce fuel loads and to encourage ecological processes.

Ecological purposes:

Bushfire has been part of the Australian landscape for millions of years. Australian ecosystems have successfully adapted to the presence of bushfire. In some cases, native vegetation relies on bushfires for important ecological processes such as reproduction, and land managers have long recognised the value of using prescribed burning to support these processes.

The local council may conduct a prescribed burn in an area of native vegetation if the burn is intended to improve ecological processes. This type of prescribed burn must be undertaken according to a management plan approved by the Native Vegetation Council or a delegate.

This also includes prescribed burning of native vegetation by Indigenous communities as part of ongoing cultural land practices. It is important to also seek advice from the South Australian Country Fire Service (CFS) before submitting any plan to the Native Vegetation Council.

Firebreaks in roadside vegetation

Native vegetation occurring in road reserves has important value and should be protected where possible. Any modification of this vegetation requires the consent of The Rural City of Murray Bridge, as well as consent under the CFS clearance controls. Two types of firebreaks may be considered for road reserves:

Fenceline firebreak

- Where there is native vegetation on a road reserve adjoining cleared land, the firebreak should be established on the cleared land and not on the road reserve.
- Where there is native vegetation on a road reserve adjoining a block of native vegetation a firebreak should only be required on one side of the fence line. In either case, CFS approval is required.

If a firebreak is placed on a road reserve, approval would need to be obtained from the CFS Chief Officer. **5.9.4 Transverse firebreak**

- A firebreak may be established across a road verge to break a continuous length of roadside vegetation. These breaks may be for firefighting vehicles to access adjoining paddocks.
- Breaks should be established at property access points or, where possible, sections of road reserve that do not contain native vegetation.
- The maximum width of a firebreak should be 20 m, which includes the width of the property access track.
- The distance between adjoining firebreaks should not be less than 500 m.
- Any firebreaks need to be approved by the CFS Chief Officer.



Consultation and Approval Procedures for Fire Management

Clearance associated with firebreaks and fuel reduction within the road reserve require approval from the CFS.

For ecological burning, CFS advice should be sought before submitting a management plan to the Native Vegetation Council.

Consultation and Approval Procedures for Bushfire Protection

Clearance associated with firebreaks and fuel reduction within the road reserve require approval from the CFS

For ecological burning, seek CFS advice prior to submitting a management plan to the Native Vegetation Council.

Guidelines – Bushfire Hazard Reduction

All bushfire protection works on roadsides should link in with the Council’s Bushfire Management Plan for the district that has been endorsed by the Regional Bushfire Management Committee.

Bushfire Management planning is focused on risk assessment of life, property and environmental values threatened by bushfire, followed by planning and implementation of strategies to mitigate those risks.

Planning includes:

- strategic placement of fuel breaks and fire access tracks per GAFLC Guidelines¹⁵;
 - adoption of Zoning Principles in response to risk assessment; and
 - consultation with the SA CFS to plan and evaluate fire prevention works that provide the best practices for the conservation and fire prevention on roadsides
- Native Vegetation Branch.



Grassy weeds in particular, can create a fire hazard on roadsides

Clearance methods

- Low impact methods of clearance (e.g., minimal ground disturbance, cutting cleanly rather than breaking branches, slashing, trimming, mowing, or rolling) should be used wherever possible when clearing vegetation to reduce potential weed invasion and erosion problems.
- Grazing and herbicide use should only be contemplated where no or minimal impact upon native vegetation is likely (such as where there are mature trees over exotic grasses (i.e., no native understorey and no evidence of natural regeneration of the tree species).
- Limit the use of herbicides to spraying:
 - around roadside furniture;
 - for selective control of particular weeds where it is the most appropriate means of control;

¹⁵ GAFLC (2008). *South Australian Firebreaks, Fire Access Tracks and Sign Standards Guidelines*. Government Agencies Fire Liaison Committee, Government of South Australia, Adelaide.



- to control the growth of potentially serious weeds on firebreaks (subject to the approval of the SA CFS Regional Prevention Officer); or
- when weather conditions will minimise the likelihood of spray drift affecting non-target plants
- Only remove vegetation that is referred to in the approved Bushfire Management Plan (e.g., strategic clearance, removal of fine fuel), and retain all other vegetation including dead timber.
- Such work should preferably be combined with a native vegetation re-establishment program.
- In the vast majority of cases, adequate fuel reduction on roadsides can be achieved by selective planning focusing on the removal of exotic vegetation. Take particular care to avoid areas of native grasses, which can be difficult to distinguish from exotic grasses.

Prescribed burning for fuel reduction

- Prescribed burning of native vegetation if followed up with weed control methods such as selective spraying or hand weeding, can be a useful management tool for lowering fuel levels thereby minimising the threat of a bushfire burning vast areas across the landscape.
- Careful planning and management are required before implementing a prescribed burn including preparation of a prescribed burn plan that is approved by the SA CFS Regional Prevention Officer. [Fire can also encourage weed invasion, thus increasing fire hazard within a short time, and if used too frequently or at the wrong time or intensity, can lead to loss of biodiversity over time].
- The advice can be sought from the CFS Regional Prevention Officer.

Other considerations

- Where a well-vegetated road reserve adjoins cleared farmland, any required fuel break should be established on the cleared land rather than through clearance of roadside vegetation.
- Any applications to revegetate roadsides must be assessed and approved by the Council Fire Prevention Officer to ensure bushfire risk is not increased for areas that are designated as strategic fuel reduced zones.
- Design weed slashing programs to begin with clean machinery in areas of good vegetation condition and work towards the more degraded sites. This will assist in the prevention of the further spread of weeds.

Grazing

Objectives

To minimise any impact of grazing by stock on roadside reserves where native vegetation is present.

Information

Grazing of stock in areas of native vegetation can have a severe impact: damaging plants, assisting weed invasion, preventing natural regeneration and compacting and polluting the soil. The *Native Vegetation Act 1991* controls the grazing of native vegetation. Roadside grazing can also be controlled by Council using by-laws under the *Local Government Act 1999*.



Figure 29: Stock grazing on the roadside

Grazing of roadsides is not permitted by the Rural City of Murray Bridge.



Grazing of areas comprising native species (including native grasslands) requires clearance approval under the *Native Vegetation Act 1991*. Native grasslands, in particular, may be difficult to distinguish from introduced grasses, and take care to avoid small or visually insignificant species such as annuals, orchids and other small native ground cover species.

Many undeveloped road reserves are leased to adjoining landholders for grazing or cropping. Where grazing has historically occurred, then this may continue at the same frequency and duration without NVC approval, however, any change of stock, or increase in frequency or duration of grazing, or grazing of areas without any previous history of grazing, requires NVC approval.

Consultation and Approval Procedures for Grazing of Roadsides

Clearance approval is required for any grazing (other than associated with droving – see next section) likely to cause damage to native roadside vegetation. This includes roadsides where:

- native shrub and understorey species are present; or
- there is evidence of recent or periodic regeneration of native plant species

Modification of native vegetation on leased roads, by changed grazing practice that increases the pressure on native vegetation, also needs clearance approval from the NVC.

Where important native vegetation is identified on leased roads, it will be protected through a management agreement or through removal of the area from the lease. Consultation with, and confirmation from, the Native Vegetation Branch is recommended.

Guidelines – Grazing

Council does not allow stock to graze on roadsides reserves.

- On undeveloped road reserves that are leased to adjoining landholders for grazing where grazing has historically occurred, then this may continue at the same frequency and duration without NVC approval, however, any change of stock, or increase in frequency or duration of grazing, or grazing of areas without any previous history of grazing, requires NVC approval.
- Any unauthorised clearance caused by grazing will be referred by Council staff to the Native Vegetation Branch.

Droving stock

Objectives

1. To manage potential damage to roadside native vegetation from the droving of stock.
2. To protect roadside native vegetation of high conservation significance from the impacts of droving stock.

Information

The droving or movement of stock on roadsides requires written permission from the Rural City of Murray Bridge under the *Local Government Act 1999* (Section 221). It is recognised as a necessary practice within some areas of the region as part of normal farm management.

The droving or movement of stock does not require approval under the Native Vegetation Act 1991. However, routes that contain important stands of native vegetation should be avoided as much as possible to minimise damage to native roadside vegetation.



If there is no practical alternative, and stock are to travel through native vegetation, then stock must be kept moving at all times to minimise incidental grazing and subsequent damage to native vegetation (otherwise may constitute a breach of *Native Vegetation 1991 Act* – see grazing section).



Droving stock on the road

Guidelines – Droving stock

Consultation and Approval Procedures for Droving Stock

No NVC approval is required if stock are kept moving at all times, and areas of native vegetation of particular conservation significance are avoided as much as possible. Movement of stock on roadsides does not require the consent of the Rural City of Murray Bridge, however the following guidelines apply:

Permission

The movement of livestock that is part of normal farm management, from one property to another is permitted if there are no practical alternatives to avoiding the road reserve.

Where the movement of livestock is over a long distance, consultation shall be held with the local Landscape SA Authorised Officer, and the Native Vegetation Branch.

Any unauthorised clearance caused by stock droving will be referred by the Rural City of Murray Bridge to the Native Vegetation Branch.

Clearance methods

Stock must be kept moving at all times.

Stock must be free of pest plants and disease.

Avoiding unnecessary clearance

Movement of stock along Category A and B roadsides, or roadsides containing known populations of threatened species, plant communities of conservation significance or naturally open areas such as native grassland and sedgeland, should instead be diverted where possible along roadsides containing vegetation of lesser value, i.e., Category E, D, and last preference C.



If the roadside vegetation has not yet been surveyed, a suitably qualified person(s) will conduct an inspection to identify vegetation along the proposed route.

Signage

Appropriate signage must be placed an adequate distance from the stock moving along roads warning vehicles of the potential hazard.

Recreational Trails on Road Reserves

Objectives

1. To minimise the impacts of recreational activities on native roadside vegetation.

Information

Road reserves (both developed and undeveloped) are subject to a range of recreational pressures. For example, there is an expanding network of walking trails on roadsides in many areas of the State. Horse and bike trails are being established on some roadsides.

Any new trails where native vegetation will be impacted require an application to the Native Vegetation Council under the *Native Vegetation Regulations 2017, Regulation 12(36)* Recreation Track.



Recreational Trail

All of these activities have the potential to disturb native vegetation.

Recreational vehicle activities on roadsides are not permitted, but walking trails may be acceptable if certain principles and practices are adhered to (see guidelines below), and NVC approval is sought.

Consultation and Approval Procedures for Recreational Trails on Road Reserves

The development of any recreational trails along road reserves must include consultation with Council and with the Native Vegetation Branch where the trail would pass through or immediately alongside native vegetation.

Under the *Native Vegetation Act 1991*, clearance approval is required for any trail development involving clearance of native vegetation. The Rural City of Murray Bridge does not permit recreational vehicle activities on roadsides containing native vegetation, but will allow lawfully established walking trails provided that certain principles and practices contained in this RVMP are adhered to.

Guidelines – Recreational use Permission

- Any planned recreational event within a road reserve requires written permission from the Rural City of Murray Bridge.



- Any unlawful off-road activities within road reserve areas will be reported to the Rural City of Murray Bridge, Police, and if damage to native vegetation occurs, the NVC.

Proposals for recreational trails may be acceptable if the following principles are adhered to:

- Any trails need to be part of an overall district or regional trails plan developed with the local council.
- Trails should not be established where clearance of native vegetation would result. **Only** if the trail is a vital part of a network and if there is no reasonable alternative should any clearance of native vegetation be contemplated. Should any proposed trail pass through or immediately adjacent to native vegetation,
- consultation with the Native Vegetation Branch must occur, and clearance approval is required for any clearance of native vegetation;
- Trails must not be established where the soil type and/or slope could result in erosion unless specific measures to prevent erosion are implemented.
- Trails must not be established where their use is likely to introduce weeds or assist the spread of weeds on the road reserve unless there is a clear commitment to a weed control program.
- Effective monitoring programs must be incorporated into any trail development.
- Existing or planned recreational trails along Category A and B roadsides, or roadsides containing known populations of threatened species, plant communities of conservation significance or naturally open areas such as native grassland and sedgeland, should instead be diverted where possible along roadsides containing vegetation of lesser value, i.e., Category E, D, and last preference C.
- If the roadside vegetation has not yet been surveyed, a suitably qualified person(s) will conduct an inspection to identify vegetation along the proposed trail route.

Existing trails

- Maintenance of existing trails only requires the consent of the Rural City of Murray Bridge.
- The location of existing trails should be reviewed in light of the guidelines above, to ensure that where possible, important areas of native vegetation are protected and/ or enhanced.

Cultivation and Cropping

Objectives

To manage potential damage to roadside native vegetation from cultivation and growing of crops.

Information

Cultivation of roadsides (for fire prevention, weed control, or cropping) can have devastating impacts on any remaining remnant native vegetation through the physical removal of plant species, run-off from fertilisers and pesticides altering the nutrient status of the soil and exposing fallowed soil to weed invasion and erosion potential. Cultivation and growing crops on roadsides are only a technique for consideration on roadsides without, or adjacent to areas without, remnant vegetation.



Within the Rural City of Murray Bridge, there are many surveyed road reserves, which have never been developed as roads. Many of these undeveloped road reserves are leased to adjoining landholders for cropping purposes. Some are totally cleared and pass unmarked through farm paddocks. These areas may be suitable for cropping or revegetation projects. Undeveloped road reserves have relatively undisturbed native vegetation and are of high conservation value. In these areas cropping practices will not be permitted.

Cropping on roadsides or along undeveloped roads needs clearance approval from the Native Vegetation Council if native vegetation is present.



Figure 30: Illegal cultivation of a roadside

Consultation and Approval Procedures for Cultivation and Cropping

Under the *Native Vegetation Act 1991*, approval is required for cultivation or cropping on roadsides where native understorey or regenerating native vegetation is present.

Guidelines – Cultivation and cropping

Permission

- Cultivation or cropping within a road reserve requires written permission from the Rural City of Murray Bridge.
- Any unauthorised clearance of road reserve native vegetation caused by cultivation or cropping will be referred by the Rural City of Murray Bridge to the Native Vegetation Branch.

Existing cultivation and cropping

- Landholders currently cropping in road reserve areas require ongoing permission from the Rural City of Murray Bridge.

Removal of Plant Material

Objectives

- To promote the statutory requirements for retaining roadside native vegetation.
- To limit the extent of damage caused by the removal of roadside native vegetation.
- To ensure that only a sustainable amount of native vegetation is removed from roadsides.

Information

The removal of plant material from roadsides includes:

- cutting of live timber for safety purposes only;



Figure 31: Harvesting Broom Bush



- brush-cutting (*Melaleuca uncinata*);
- seed collection; and
- flower harvesting

All such activities require written permission from the Rural City of Murray Bridge and other constraints may apply – as set out below.

CONSULTATION AND APPROVAL PROCEDURES FOR REMOVAL OF PLANT MATERIAL

Removal of plant material from roadsides and road reserves requires clearance approval under the *Native Vegetation Act 1991* in the following instances:

- removal of “dead plants” as defined under the *Native Vegetation Regulations 2017*;
- cutting of live timber (requires separate approval process);
- the cutting of brush (*Melaleuca uncinata*) unless it is undertaken in accordance with these guidelines or an approved RVMP; and
- the harvesting of flowers.

In the case of seed collection, a permit is needed from the Department for Environment and Water, Permit Unit, who can also provide guidance as to how collect seed.

Removal of plant material from road reserves also requires the consent of the Local Council.

The Rural City of Murray Bridge will ensure that removal of plant material from roadsides is undertaken in accordance with the guidelines in this plan and that appropriate permits have been issued.

Guidelines – Removal of plant material

Permission

- Removal of plant material within a road reserve as set out below requires written permission from the Rural City of Murray Bridge.
- Any unauthorised clearance of road reserve native vegetation caused by activities will be referred by the Rural City of Murray Bridge staff to the Native Vegetation Branch.

Collection of dead timber

- Dead timber should not be “tidied up” on roadsides, and **removal is not permitted** unless outlined as necessary for fuel reduction in the approved the Region 3 Bushfire Plan¹⁶ – see Bushfire Hazard Reduction section of this Plan), to assist rabbit control, or to remove timber which is hazardous to traffic or fencing.

Dead timber on roadsides is not controlled under the *Native Vegetation Act 1991*, except in the case of dead plants in some parts of the state that provide habitat for nationally threatened species, which are defined as native vegetation under Section 3(1) of the *Native Vegetation Act 1991*¹⁷. Contact the

¹⁶ <http://www.cfs.sa.gov.au/site/home.jsp>

¹⁷ Dead plants (under the definition of native vegetation in section 3(1) of the Act), means the class of plants, or parts of plants, comprising trees of a species indigenous to South Australia

(a) that have a trunk circumference (measured at a point 300 millimetres above the base of the tree) of –

- (i) in the case of a tree located on Kangaroo Island – 1 metre or more; or
- (ii) in any other case – 2 metres or more; and



Figure 32: Illegal clearance when constructing new fence lines



Figure 33: Overspray killing shrubs and native grasses

Native Vegetation Branch for further details, including a fact sheet “Dead trees as native vegetation”. Also available at; <https://www.environment.sa.gov.au/topics/native-vegetation/clearing> Despite this, the Rural City of Murray Bridge controls this activity under the *Local Government Act 1999*, as dead timber, both standing and fallen:

- provides cover and foraging places for native fauna,
- shelters young seedlings and small plants adapted to and protected by the sheltered conditions provided by fallen timber,
- protects from severe sunshine and drying winds,
- may protect small plants physically from grazing by rabbits, kangaroos etc.,
- provide optimal conditions for survival – darker and moister micro-habitats, and
- is important in the recycling of nutrients.

The development of hollow timber takes many years and is a limited resource for wildlife, and therefore should not be collected for firewood. Retention of dead timber (and fallen leaves, bark and twigs) is also encouraged so that soil disturbance and the creation of open areas suitable for weed invasion is minimised.

The removal of dead timber from all roadsides is prohibited.

Cutting of live timber

Any cutting of live timber outside of the scope of guidelines in this plan requires the consent of the Rural City of Murray Bridge and clearance consent under the *Native Vegetation Act 1991*.

Brush-cutting

The cutting of brush (*Melaleuca uncinata*) on roadsides requires clearance approval unless it is undertaken per other guidelines in this plan.

(b) that provide or have the potential to provide, or are a [part of a group of trees or other plants (whether alive or dead) that provide, or have the potential to provide, a habitat for animals of a listed threatened species under the *Environment Protection and Biodiversity Conservation Act 1999* of the Commonwealth, is declared to be included in that definition.



Seed collection (cuttings and specimens)

Revegetation programs using local species are strongly supported and roadsides are often ideal sites for seed collection. However, care is needed to minimise damage to the parent plant and to avoid depleting the seed supply to such an extent that natural regeneration of plants on the roadside is affected.

The **collection of seeds, cuttings and specimens** from native vegetation from roadsides, requires the **consent of The Rural City of Murray Bridge**. A permit is also needed under the *National Parks and Wildlife Act 1972* and can be requested from the Permit Unit, Department of Environment and Water:

http://www.environment.sa.gov.au/Do_It_Online/Plant_permits. The Unit can also guide seed collection methods.

On private land, seed collection requires the consent of the landholder and, if the plant is a prescribed species under the *National Parks and Wildlife Act 1972*, a permit from the Department is also needed. It should be noted that expertise is required to know how and when to collect seed from some native plants to ensure the collection of viable seed. Such expertise should be sought from the regional Landscape Board.

The collection of seeds, cuttings or other specimens from native plants does not require consent from the NVC provided that damage to the plant is not substantial. As a guide, cutting a substantial branch off a tree or bush to collect seed would not be regarded as exempt; nor would the removal of virtually all harvestable seed from a single plant.

Nevertheless, the Rural City of Murray Bridge will give preference to seed collecting permits associated with local revegetation projects, and tree trimming programs (for verge maintenance) will be undertaken in consultation with local revegetation groups to facilitate the collection of seed from trimmed vegetation.

Flower harvesting

The harvesting of flowers from roadsides requires the consent of the local council and clearance consent from the NVC. The local council should be the first point of contact. Harvesting of roadside flowers, particularly for commercial purposes, is not favoured because of its impact on the vegetation and on the landscape or amenity of the area.



Plant seeding



Flower harvesting



Maintenance of Biodiversity

Objectives

To promote community interest and involvement in maintaining and where possible, enhancing, roadside biodiversity (plants and animals).

Information

Along some roadsides, there is evidence of a steady decline of native vegetation not associated with direct clearance. Several factors may be contributing to this, many of which are exacerbated by the long narrow shape of roadside vegetation. These include, but are not limited to:

- senescence (old age) and lack of natural regeneration;
- herbicides or other chemicals used on adjoining farmland, or used for weed control on roadsides;
- animal pests and methods used to control them;
- mistletoe infestation;
- lerp infestation;
- Competition from exotic species (garden escapees, illegal dumping of garden waste, invasion from adjacent land ;)
- Inappropriate fire regimes; and
- Broomrape (see section 5.6).



Figure 34: Biodiverse roadside

In some cases, a form of disturbance (such as burning or pollarding (pruning)) may be proposed as a means of enhancing vegetation health or diversity in the longer term. Such activities constitute clearance in terms of the *Native Vegetation Act 1991* and therefore require clearance approval under the Act or the *Native Vegetation Regulations 2017*. For example, burning an area may be required to promote natural regeneration in an area where species are declining. Alternatively, removal of mistletoe or lopping of limbs may be proposed as a short-term means of protecting unhealthy host trees heavily infested with mistletoe.

Such activities must be carefully planned and the results must be monitored.

Some Regulations allow for the clearance of native vegetation to address some of these problems. Refer to 'A Guide to the Regulations under the *Native Vegetation Act 1991* for more information: http://www.environment.sa.gov.au/Conservation/Native_vegetation/Managing_native_vegetation.



Ecological Prescribed Burning

Prescribed burning for ecological purposes requires careful planning and management. Proposed works are to be carried out under a management plan that has been approved by the NVC. The following is a list of information that should be included in the plan:

- a clear demonstrated focus on biodiversity outcomes, such as a tool for managing threatened species, enhancing ecological communities, managing pest species, maintaining a diversity of vegetation age classes or preventing large areas of habitat burning across the landscape in a single fire event;
- site survey information identifying flora and fauna species present;
- detailed aerial map(s) identifying vegetation communities, topography and areas identified for burning an environmental risk assessment table identifying impacts and mitigating actions;
- any *EPBC Act 1999* matters also need to be addressed;
- a logistic prescribed burn plan to be approved by SA Country Fire Service; and
- a monitoring program that will assist in the evaluation of the effects of fire on vegetation communities and for planning future adaptive management strategies



Thelymitra nuda

Advice can be sought from the Native Vegetation & Biodiversity Management Unit.

Mistletoe Infestation¹⁸

Mistletoes are flowering plants that use other plants to obtain water and mineral nutrients and photosynthesise their own products. The species of mistletoe along rural roadsides are native to South Australia and are protected under the *Native Vegetation Act 1991*. They provide important habitats for many fauna species, such as birds, butterflies, possums, ants and other insects. In particular, mistletoes are a summer food source for nectar-feeding animals such as honeyeaters, and a food source for native butterflies like the rare *Genoveva azure* whose larvae eat the leaves and flowers of the Box Mistletoe (*Amyema miquelii*) on Eucalyptus species, and Drooping Mistletoe (*Amyema pendula* ssp. *pendula*) on Stringybark Eucalypts and Blackwood.

In some areas of the State, mistletoe infestations appear to be contributing significantly to tree decline. The factors involved in these infestations are not well understood but appear to be linked with the extent of general vegetation clearance and the accompanying loss of wildlife habitat creating an imbalance. Often trees are in poor health due to degradation of surrounding vegetation and are perhaps more susceptible to the impacts of mistletoe. Higher germination and establishment rates of mistletoe on trees with less canopy, and greater dispersal of seed by the Mistletoe bird in open woodlands, have also been suggested as possible explanations of the association of high levels of mistletoe on trees that are in poor health (Ward and Paton, 2004)¹⁹.

¹⁸<https://www.environment.sa.gov.au/topics/native-vegetation/clearing/landscape-management-problems>

¹⁹ Ward, M. and Paton, D. (2004). *Box Mistletoe (Amyema miquelii) occurrence and host condition in Eucalyptus woodlands of the Mount Lofty Ranges, South Australia*. Report for the Native Vegetation Council, South Australia. School of Earth and Environmental Sciences, University of Adelaide.



Figure 35: Close-up of mistletoe



***Amyema miquelii* in a pink gum, Mt Lofty Ranges**

In severe cases, the removal of mistletoe or lopping of affected limbs may be acceptable as a short-term means of protecting the host tree. These actions constitute clearance and require clearance approval under the *Native Vegetation Act 1991* or the *Native Vegetation Regulations 2017* (photos may be emailed to the Native Vegetation Branch who can then issue advice or grant clearance approval). Protection and/or enhancement of the health of affected trees, by fencing-off from livestock grazing and restoring the affected area through natural regeneration or revegetation with a range of indigenous plants, is seen to be the best overall approach.

Lerp Infestations

Lerps are native leaf-sucking insects which frequently attack red gums (e.g., in the Mount Lofty Ranges) and pink gums (e.g., in the South East). The visual impact can be severe with entire trees being defoliated. In some cases, trees already stressed by other factors may die, but usually, they will recover.

In a natural bushland setting, lerps are generally kept in check by native birds such as pardalotes, which feed on the waxy scale-like covering (the “lerp”), beneath which the immature stage of the insect, shelters and feeds. In disturbed environments such as roadsides – and particularly where understorey plants have been reduced – bird populations are depleted and problems such as lerp infestations are more likely to occur. Restoration of roadside vegetation communities is therefore the recommended management approach.

Community Groups

Within the Rural City of Murray Bridge, there are several locations where volunteer groups using minimal disturbance techniques to maintain biological diversity or to promote regeneration of native species are actively managing roadside vegetation. This involves weeding, fencing and rubbish collection.

Consultation and approval procedures for maintaining biodiversity on roadsides

Maintaining roadside biodiversity (plants and associated fauna) can be a complex issue and close consultation with the Native Vegetation Biodiversity Management Unit is recommended.

Where modification of roadside vegetation using measures, such as lopping, burning or other disturbance of native vegetation is proposed as a tool in maintaining diversity, clearance approval is required from the Native Vegetation Council.



Active groups manage areas including

Reedy Creek Road, Murray Park and Morphett Reserve Bush Care Sites. The Eastern Hills & Murray Plains Catchment Group, Goolwa to Wellington LAP, Murray Mallee LAP and Kanmantoo/Callington Landcare Group.

Garden Escapees

Intentional dumping of garden waste on roadsides can create new weed infestations.

Garden plants can also escape into bushland and onto roadsides adjacent to properties. Residents adjacent to good roadside vegetation should select garden plants with a low potential to spread, or consider using local native species instead.

Guidelines – Maintenance of Vegetation Diversity

Permission

- Modification of roadside vegetation (e.g., by burning or pollarding) within a road reserve for maintenance of vegetation diversity requires written permission from the Rural City of Murray Bridge and the NVC.
- Any unauthorised clearance of road reserve native vegetation caused by activities will be referred by the Rural City of Murray Bridge staff to the NVB.

Proposals

- Any proposals involving disturbance of native vegetation to maintain vegetation diversity will be developed in close consultation with the NVB.
- Revegetation of the affected area with a range of indigenous plant species should be considered in combination with or instead of disturbance, for example, in the case of mistletoe and lerp attack.

Clearance Methods

- These activities will be carefully planned and the results must be monitored.
- Trimming or pruning of vegetation using appropriate, low impact cutting tools is required - consult with the NVBM Unit for advice for all proposals to help determine best practice.

Prevention

Opportunities to promote interest in roadside vegetation biodiversity will be developed where possible, e.g., providing information to rate-payers - discouraging illegal dumping and explaining the consequences of weed spread, clear guidelines for activities such as weed control and firewood collection, and promote the importance of roadside vegetation in partnership with other organisations.



Figure 36: Biodiversity of plants on roadsides is important



Protection of Native Vegetation of High Conservation Significance

Objectives

- To identify, record and protect roadside native vegetation of high conservation significance.
- To reverse the deterioration of roadside native vegetation by improving management practices.

Information

Roadsides may contain plants or vegetation types of high conservation significance (i.e., threatened at a national, state, or local level, and/or vegetation classed as Category A and B). These locations must be identified, recorded and protected.

While all native vegetation on roadsides is protected and must not be cleared unless clearance is considered exempt as defined in this plan, vegetation of high conservation significance requires:

- extra precautions (such as signage) to prevent accidental damage; and
- active management (such as Bushcare work) to prevent a decline in quality (also see next section – Restoration).

Vegetation of high conservation significance is important to the region as it can:

- provide habitat for native animals and plants, including endangered species;
- assist the movement of native animals to move from one habitat area to another; and
- provide unique genetic reference areas for sourcing seed for revegetation projects.



Roadside Marker System

The Rural City of Murray Bridge has assessed its roadside vegetation through a roadside vegetation survey and has identified the conservation significance for roads throughout its region. The Rural City of Murray Bridge area contains 11 km of roadways that are considered to support native plants or vegetation associations of high conservation significance.

There are nine nationally recognised threatened plant species recorded within the Rural City of Murray Bridge. Three of these species along roadsides, 38 species threatened at a state level and 41 species threatened at a regional level have been recorded. Two vegetation associations are listed as threatened at the national/state/local level. **Iron-grass Natural Temperate Grassland** of South Australia rated Critically Endangered and **Peppermint Box (*Eucalyptus odorata*) Grassy Woodland** of South Australia rated Critically Endangered.



Consultation and Approval Procedures for activities in areas of Vegetation of High Conservation Significance

Any activity in areas of high conservation significance requires consent from the Rural City of Murray Bridge.

Any activity in areas of high conservation significance involving native vegetation clearance also requires clearance approval from the Native Vegetation Council.

Guidelines – Protection of Vegetation of High Conservation Significance

Permission

- Any activity occurring in areas of high conservation significance requires consent from the Rural City of Murray Bridge, and if native vegetation clearance is proposed, then consent is required from the Native Vegetation Council.
- Any activity impacting on vegetation of National Significance needs to be referred to *The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999)*.
- Any unauthorised clearance of road reserve native vegetation caused by activities will be referred by the Rural City of Murray Bridge to the Native Vegetation Branch.

Roadside surveys

- Roadside vegetation surveys have been undertaken using the standard DEW roadside vegetation survey methodology to determine where significant vegetation occurs.
- The overall ecological significance of sections of roadside vegetation has been determined.

Database

- A site register or database for significant roadside flora has been developed and will be used by the Rural City of Murray Bridge relating to all roadwork activities. The “Roadside Marker System (RMS)” has prioritised significant locations.

Roadside markers and Bushcare work

- A site marking system to identify significant sites “Roadside Marker System (RMS)”, particularly for Council staff or contractors, has been implemented to ensure the protection of significant sites.
- In consultation with Trees for Life, the Local Action Planning group and/or Regional Ecologist, Bushcare sites (see next section – Restoration) will also be encouraged wherever possible to help actively manage these important areas of native vegetation.

Roadside Activities

- Training programs for Council staff and others (e.g., contractors), and development of work procedures to ensure the protection of significant sites, has been implemented by the Rural City of Murray Bridge Environment Officers with local contractors and SA Water.
- A map of the vegetation categories for the road network within the Rural City of Murray Bridge will be used to minimise or avoid any loss or disturbance of native vegetation of conservation significance by locating proposed development or roadside works away from these areas.



- If it is not possible to avoid loss of native vegetation when planning roadworks, the Rural City of Murray Bridge will use the data collected and associated maps to identify areas of roadside vegetation, that can be managed better as a way of providing a SEB offset, which would be a requirement for clearance of vegetation associated with any new works under *Native Vegetation Regulations 12(34) Infrastructure*.

Restoration of roadside vegetation

Objectives

- To encourage the re-establishment of native vegetation along roadsides in parts of the Local Council area where native vegetation has been identified as cleared or degraded.
- To prevent further degradation within road reserves giving high priority to rehabilitation works along roadsides containing native vegetation of high construction significance.

Information

Roadside vegetation within the Rural City of Murray Bridge varies from Category A vegetation with very high conservation value (pristine remnant vegetation) to Category E vegetation with low conservation value.

The Rural City of Murray Bridge is committed to roadside restoration. Council recognises the ecological and aesthetic importance of restoring, maintaining and enhancing roadside native vegetation as areas of habitat for wildlife, to increase the biological diversity and seed stock of the area, and to create linkages for wildlife movement. Other benefits include improving the amenity of an area, reducing the risk of soil erosion and soil salinity and possibly reducing the risk of fire through appropriate fire management practices.

The Rural City of Murray Bridge is located within the South Australian Murraylands and Riverland Landscape Board and intends to follow the SA Murraylands and Riverland Landscape Board 2021-2026 Regional Landscape Plan, and will consider priorities and management actions as outlined in the Environment Management Plan 2020-2024,

Council will consider allowing areas of degraded vegetation to rehabilitate through natural regeneration and carefully controlled management practices. Council will consider in previously cleared or degraded roadsides using local native species to establish linkages with remnant bushland areas in the district. If further information on revegetation strategies in the region becomes available (such as revegetation plans), this RVMP will incorporate the recommendations wherever possible.

Within the Rural City of Murray Bridge, there are several locations where community groups use minimal disturbance techniques to maintain biological diversity or to promote regeneration of native species are actively managing roadside vegetation.

General advice regarding restoration can be obtained from local Landscape Boards and organisations such as Trees for Life (Bush Care Sites), and advice about local native species can be obtained from the Native Vegetation Branch. Further information can also be found in 'Habitat Restoration Planning Guide for Natural Resource Managers'²⁰ on the State government website:

http://www.environment.sa.gov.au/Knowledge_Bank/Science_research/Seascapes_landscapes_and_communities/Landscape_restoration/Publications

²⁰ Clarke, I., Stokes, Z. and Wallace, R., (2010). *Habitat Restoration Planning Guide for Natural Resource Managers*. Government of South Australia, through Department of Environment and Natural Resources, Adelaide.



Consultation and Approval Procedures for Restoration of Roadside Vegetation

It is essential (and a legal requirement) that the permission of the Rural City of Murray Bridge be obtained for roadside revegetation programs. Planned revegetation programs will be conducted under Council's authorisation and will incorporate other Council maintenance policies aimed at minimising soil disturbance and associated weed establishment, control introduced plants and animals, and restrict grazing or development along roadside areas in the district.

Proposals must also take into account the existing native vegetation present, and consultation with the Native Vegetation Council is required where revegetation is to occur within areas of existing vegetation, particularly open areas (i.e., areas possessing few if any trees or shrubs) as some areas of the State naturally had areas of open grassland, sedgeland and wetland.

Guidelines – Restoration of Roadside Vegetation

Permission

- Any activity occurring in rehabilitated and revegetated areas requires consent from the Rural City of Murray Bridge, and if native vegetation clearance is proposed, then consent is also required from the NVC.
- Any unauthorised clearance of road reserve native vegetation caused by activities will be referred by Council to the Native Vegetation Branch.

Roadside rehabilitation and restoration

- Rehabilitation of existing roadside vegetation is usually seen as the priority for restoration work, however, depending on the desired goals, reconstruction of habitat from scratch may be implemented.
- The Rural City of Murray Bridge will undertake the rehabilitation and revegetation of suitable, degraded areas of road reserve through natural regeneration of native plant species and through utilising local native species.
- Restoration and rehabilitation programs will only be undertaken after the overall ecological significance of sections of roadside vegetation has been determined in the vegetation survey.
- Natural regeneration should be encouraged in High and Medium Conservation Value roadsides.
- Take care when planning the planting of trees or shrubs in areas dominated by native grassland species. The area may be naturally occurring grassland and therefore disturbance may constitute clearance under the *Native Vegetation Act 1991*. Consult with Council's Environment Officer.

Database

- Rehabilitated sites will be recorded on the site register or database.
- Sites will be monitored with photo-point photos.

Roadside markers and bushcare work

- Roadside Revegetation Sites are to the "Roadside Marker System (RMS)" to ensure the protection of significant sites.



- In consultation with Trees for Life, the Local Action Planning group and/or Murraylands and Riverland Landscape Board, Bushcare sites will also be encouraged wherever possible to help actively manage these important areas of native vegetation.
- The Rural City of Murray Bridge will continue to encourage and promote the maintenance and improvement of roadside vegetation diversity through the support of existing groups, and where appropriate the establishment of more local community groups to undertake restoration activities.



Figure 37: Map and photo of Iron grass Natural Temperate Grassland, nationally listed as critically endangered.

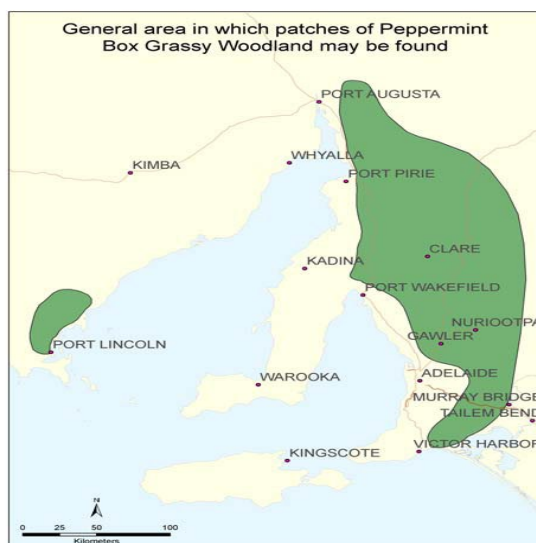


Figure 38: Map & photo of Peppermint Box Grassy Woodland, nationally listed as critically endangered



Plants of National Significance

The plants listed below are protected by the *Environment Protection & Biodiversity Conservation Act (EPBC Act 1991)*. The species below are located on Council roads with Roadside Significant Markers (RSM). It is mandatory to contact Council's Environment Officer or Biodiversity Officer before any works where Roadside Significant Marker signs are located.

| Plants of National Significance | |
|-------------------------------------|------------------------|
| <i>Acacia menzeli</i> | Menzels Wattle |
| <i>Acacia resinocarpa</i> | Resin Wattle |
| <i>Caladenia colorata</i> | Coloured Spider-orchid |
| <i>Olearia pannosa ssp. pannosa</i> | Silver Daisy Bush |
| <i>Prostanthera eurybioides</i> | Monarto Mint bush |
| <i>Pterostylis arenicola</i> | Sandhill Greenhood |
| <i>Senecio macrocarpus</i> | Large-fruit Groundsel |
| <i>Stackhousia annua</i> | Annual Candles |
| <i>Thelymitra epipactoides</i> | Metallic Sun-orchid |

| Plants of State Significance | |
|---|------------------------|
| <i>Acacia lineate</i> | Streaked Wattle |
| <i>Acacia montana</i> | Mallee Wattle |
| <i>Acacia rhigiophylla</i> | Dagger-leaf Wattle |
| <i>Acacia simmonsiana</i> | Hall's Wattle |
| <i>Acacia trineura</i> | Three-nerve Wattle |
| <i>Austrostipa densiflora</i> | Fox-tail Spear-grass |
| <i>Austrostipa echinata</i> | Spiny Spear-grass |
| <i>Austrostipa pilata</i> | Prickly Spear-grass |
| <i>Bothriochloa macra</i> | Red-leg Grass |
| <i>Brachyscome basaltica var. gracilis</i> | Swamp Daisy |
| <i>Caladenia flaccida</i> | Drooping Spider-orchid |
| <i>Calotis scapigera</i> | Tufted Burr-daisy |
| <i>Ceratophyllum demersum</i> | Hornwort |
| <i>Daviesia benthamii ssp. humilis</i> | Mallee Bitter-pea |
| <i>Dianella longifolia var. grandis</i> | Pale Flax-lily |
| <i>Diuris behrii</i> | Behr's Cowslip Orchid |
| <i>Eragrostis lacunaria</i> | Purple Love-grass |
| <i>Eremophila gibbifolia</i> | Coccid Emubush |
| <i>Eremophila subfloccosa ssp. Glandulosa</i> | Green-flower Emubush |
| <i>Eucalyptus fasciculosa</i> | Pink Gum |
| <i>Haloragis eichleri</i> | Eichler's Raspwort |
| <i>Juncus prismatocarpus</i> | Branching Rush |
| <i>Lawrenca berthae</i> | Showy Lawrenca |
| <i>Lepidium pseudoruderale</i> | Peppergrass |



| Plants of State Significance | |
|--|-------------------------|
| <i>Lomandra multiflora ssp. multiflora</i> | Many-flower Mat-rush |
| <i>Lythrum salicaria</i> | Purple Loosestrife |
| <i>Myriophyllum papillosum</i> | Robust Milfoil |
| <i>Olearia passerinoides ssp. glutescens</i> | Sticky Daisy-bush |
| <i>Olearia picridifolia</i> | Rasp Daisy-bush |
| <i>Philotheca angustifolia ssp. Angustifolia</i> | Narrow-leaf Wax-flower |
| <i>Poa fax</i> | Scaly Poa |
| <i>Poa drummondiana</i> | Knotted Poa |
| <i>Podolepis jaceoides</i> | Showy Copper-wire Daisy |
| <i>Pratia concolor</i> | Poison Pratia |
| <i>Sclerolaena muricata var. villosa</i> | Five-spine Bindyi |
| <i>Veronica gracillis</i> | Slender Speedwell |
| <i>Veronica decorosa</i> | Showy Speedwell |

| Plants of Regional Significance | |
|---|---------------------------|
| <i>Acacia myrtifolia</i> | Narrow-leaf Myrtle Wattle |
| <i>Acacia pycnantha</i> | Golden Wattle |
| <i>Acrotriche depressa</i> | Native Currant |
| <i>Adiantum aethiopicum</i> | Common Maiden-hair |
| <i>Allocasuarina luehmannii</i> | Bull Oak |
| <i>Brunonia australis</i> | Blue Pincushion |
| <i>Caladenia leptochila</i> | Narrow-lip Spider-orchid |
| <i>Caladenia toxochila</i> | Bow-lip Spider-orchid |
| <i>Calocephalus citreus</i> | Lemon Beauty-heads |
| <i>Calochilus robertsonii</i> | Purplish Beard-orchid |
| <i>Cheiranthra alternifolia</i> | Hand-flower |
| <i>Correa aemula</i> | Hairy Correa |
| <i>Cymbopogon obtectus</i> | Silky-head Lemon-grass |
| <i>Diuris orientis</i> | Wallflower Donkey-orchid |
| <i>Dodonaea subglandulifera</i> – | Peep Hill Hop-bush |
| <i>Eleocharis sphacelata</i> | Tall Spike-rush |
| <i>Eremophila bignoniiflora</i> | Bignonia Emu bush |
| <i>Eucalyptus viminalis ssp. cygnetensis</i> | Rough-bark Manna Gum |
| <i>Gahnia trifida</i> | Cutting Grass |
| <i>Glycine canescens</i> | Silky Glycine |
| <i>Goodenia albiflora</i> | White Goodenia |
| <i>Hakea rugosa</i> | Dwarf Hakea |
| <i>Helichrysum adenophorum var. adenophorum</i> | Branched Everlasting |
| <i>Juncus caespiticus</i> | Grassy Rush |
| <i>Juncus flavidus</i> | Yellow Rush |



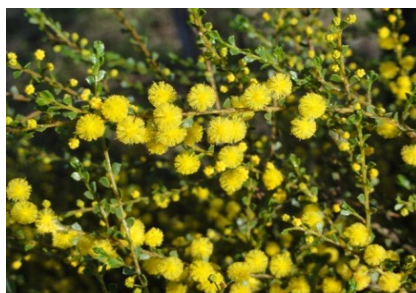
| | |
|---|-------------------------|
| <i>Leptoceras menziesii</i> | Hare Orchid |
| <i>Leucopogon woodsii</i> | Nodding Beard-heath |
| <i>Melaleuca pauperiflora ssp. mutica</i> | Boree |
| Plants of Regional Significance | |
| <i>Olearia teretifolia</i> | Cypress Daisy-bush |
| <i>Orthoceras strictum</i> | Horned Orchid |
| <i>Phyllanthus saxosus</i> | Rock Spurge |
| <i>Pterostylis erythroconcha</i> | Red Shell-orchid |
| <i>Ranunculus pachycarpus</i> | Thick-fruit Buttercup |
| <i>Solanum capsiciforme</i> | Capsicum Kangaroo-apple |
| <i>Solanum lacunarium</i> | Lagoon Nightshade |
| <i>Stellaria filiformis</i> | Thread Starwort |
| <i>Styphelia exarrhena</i> | Desert Heath |
| <i>Teucrium corymbosum</i> | Rock Germander |
| <i>Thelymitra azurea</i> | Azure Sun-orchid |
| <i>Viola sieberiana</i> | Tiny Violet |
| <i>Wilsonia rotundifolia</i> | Round-leaf Wilsonia |

Menzel's Wattle - (*Acacia menzliei*)



Photos from Pallamanna Road

Resin Wattle – (*Acacia retinocarpa*)



Photos from Pope Road

Silver Daisy Bush - (*Olearia pannosa ssp. pannosa*)





Undeveloped Road Reserves

Throughout South Australia, many surveyed road reserves are undeveloped as roads. Some are totally cleared and pass unmarked through farm paddocks. Although of low ecological value, these areas may be suitable for revegetation projects. Other undeveloped road reserves have relatively undisturbed native vegetation and are of high conservation value.

Leased Roads

Many undeveloped road reserves are leased to adjoining landholders for **grazing or cropping**. In this situation, any clearance of native vegetation (e.g., for cropping purposes) would require clearance approval, as would any change in grazing practice, which increased the pressure on native vegetation.

Where important native vegetation is identified on leased roads, it should be protected through a Land Management Agreement⁶ or Heritage Agreement⁷, or through the removal of the area from the lease.

Road Closures

Proposed road closures by local councils need careful consideration as these sites are often important for native vegetation conservation or as potential revegetation corridors. Both the opening and closing of roads is controlled in South Australia through the **Roads (Opening and Closing) Act 1991**.

Sale of these areas into private ownership could expose significant vegetation to increased risk of degradation unless protection provisions are put in place, such as a Heritage Agreement or Land Management Agreement.

CONSULTATION AND APPROVAL PROCEDURES FOR UNDEVELOPED ROAD RESERVES

The consultation and approval requirements of these guidelines apply generally to undeveloped road reserves. In addition, local councils should advise the Native Vegetation Branch about any proposed road closures.

Modification of native vegetation on leased roads, by direct clearance or changed grazing practice, requires clearance approval.

Management Actions



Management Actions

This section outlines actions with a program for implementation that will further enhance the management of roadside vegetation in the Rural City of Murray Bridge area.

The Action Plan for the Rural City of Murray Bridge is presented below, with actions listed in the order that the Management Issues are addressed in Section 4.

The action plans and guidelines from this document will become a standard reference within Council. Read the Roadside Vegetation Management Plan in conjunction with Councils Development Plans and Strategic Plan.



Table 9: Action Plan for the Rural City of Murray Bridge - Actions are listed below each management issue

| Activity | Action Statement | Timeline | Page |
|---|--|-----------------------|-----------|
| New Roadworks | | | 28 |
| Vegetation Survey | Refer to vegetation category mapping or, where vegetation has not been surveyed, conduct a vegetation survey, along proposed new road works to determine if works are likely to have a significant impact on native vegetation. Consult with the NVB. | As required | |
| Stakeholder Consultation | Consult with relevant stakeholders before planning development and road infrastructure, to ensure that (in particular) damaging activities along Category A and B roadside vegetation can be avoided, and routes can be selected along with areas without roadside vegetation. | As required | |
| Construction Works | Engineer design to minimise vegetation impacts. | As required | |
| Capacity Building | Train workers and contractors in erosion control, vegetation removal and vegetation protection measures before commencement of works. | Ongoing | |
| Roadside Maintenance | | | 32 |
| Road Classification | Maintenance of clearance envelopes to provide adequate sight distance will be based on previous clearance envelopes. However, the upper limit should be bound by the nominal width of the road according to the function or hierarchy of the road. | Approx. every 5 years | |
| Site Inspections | Conduct site inspections before the commencement of maintenance activities to reduce potential impacts of maintenance work on native vegetation. | Ongoing | |
| Public Safety | | | 46 |
| Safety Audit | Conduct a road safety audit to identify roads with a high risk to public safety. | Ongoing | |
| Category A-C Site Assessments | Site assessments on roads with Category A-C vegetation will be conducted to ensure appropriate low impact clearance methods are used to minimise damage to vegetation of high conservation significance. | Ongoing | |
| Installation and Maintenance of Services | | | 51 |
| Permit requirements | Council to provide service authorities with the appropriate information regarding permit requirements before any proposed new works on roadsides commence. | Ongoing | |



| Activity | Action Statement | Timeline | Page |
|--|--|----------------------------|-----------|
| Training | Ensure that contractors and staff from service authorities involved in the installation or maintenance of services (particularly on high conservation value roadsides) have the appropriate skills. | 5 yearly or new contractor | |
| Mapping | Map potential routes for new or replacement services to identify cleared land or low conservation value roadside vegetation. | As required | |
| Notification | Notify adjacent landholders if proposed works are likely to have an impact on their land. | As required | |
| Pest Plant and Animal Control | | | 53 |
| Develop a Management Plan | Murraylands and Riverland Landscape Board have a pest plant and animal management action plan. | Ongoing | |
| Mapping | Map infestations of priority pest plant species. | As required | |
| Priorities | Prioritise pest plant and animal species for eradication or containment. | Ongoing | |
| Standard Operating Procedures | Develop and implement a Standard Operating Procedure for pest plant and animal control activities using standard minimal disturbance techniques (e.g., work from best to worst areas). | Ongoing | |
| Raising Community Awareness | Develop community awareness programs to ensure landholders understand their responsibilities regarding pest plants and animal control activities on roadsides. | Ongoing | |
| Monitoring | Monitor outbreaks of declared weeds. | As required | |
| Eradication | Produce a strategy to eradicate such outbreaks. | Ongoing | |
| Plant Diseases | | | 57 |
| Contain and minimise the spread of plant diseases | Map and monitor locations of pest plant (e.g. Broomrape) in the Rural City of Murray Bridge. | Ongoing | |
| Minimise effect on the environment and recreational activities | Use appropriate hygiene procedures when undertaking roadworks to prevent spread from infected areas, erect signage on-site to identify pest plant (e.g. Broomrape) locations. Promote information on locations and methods to be used (web site/Council office/papers). | Ongoing | |
| Uninfected areas protected from infection | Hygiene procedures and stations to be advertised/provided as per Guidelines (wash down stations at entrances to reserves). | As required | |
| Raising community awareness | Dissemination of information relating to pest plant (e.g. Broomrape) in affected areas. | As required | |



| Activity | Action Statement | Timeline | Page |
|---|---|-------------------------|-----------|
| Fenceline Clearance | | | 59 |
| Raising community awareness | Ensure landholders understand the requirements for clearing on roadsides. Encourage landholders to ensure that all litter and rubbish is removed from the roadside at the completion of works and is properly disposed of. | Ongoing | |
| Approval Process | Provide information to landholders notifying any removal of roadside vegetation for maintenance/ construction of fence lines requires Council approval. | Ongoing | |
| Clearance for access to adjoining land | | | 63 |
| Minimal impacts to vegetation | Provide property access to landholders through Council control road reserves that have minimal impact on native vegetation. Where possible locate access through less dense/poor native vegetation. | Ongoing | |
| Sight Triangles | Ensure safe sight distance triangles for the clearance of native vegetation meet the required standards. | Ongoing | |
| Bushfire Protection | | | 65 |
| Bushfire Management Strategy | In conjunction with the Council Fire Prevention Officer implement an approved BMS. | Revised annually (June) | |
| Reduce High Fuel Loads | Liaise with CFS, Council Fire Prevention Officer and landholders adjoining Council roadside reserves to develop and implement strategies to reduce areas of high fuel loads that have been identified in the BMP as Asset Protection or Bushfire Buffer Zones. | Revised annually (June) | |
| Protect Category A-C Vegetation Sites | In the BMP ensure Category A-C vegetation sites are identified and techniques are appropriate to protect these areas. | Revised annually (June) | |
| Map Strategic Fire Breaks | Record as part of the Council BMP, the conservation categories of roadsides designated as strategic fire breaks in conjunction with DEW. | Revised annually (June) | |
| Prioritise Strategic Fuel Breaks | Develop a priority list of Strategic fuel breaks and roadways for broad-scale fire prevention purposes. Develop an annual maintenance program to establish standards for: <ul style="list-style-type: none"> the identified roads; dates to be achieved; management plans for site-specific conflict areas in conjunction with DEW and Landscape SA | Revised annually (June) | |
| Conduct Ecological Burns | The application under <i>Native Vegetation Regulations</i> 11(25) Ecological restoration and management of vegetation and will require a Management Plan endorsed by the NVC. | As required | |



| Activity | Action Statement | Timeline | Page |
|--|--|----------|-----------|
| Grazing | | | 66 |
| Grazing Licences | The issuing of grazing licenses will only be granted roadsides where there are no native shrub or understorey species present, and where there is no evidence of recent or periodic regeneration of native plant species. | Ongoing | |
| Undeveloped Road Reserves | Grazing of native vegetation in undeveloped road reserves requires clearance approval from the NVC if there is any change in grazing practice which increases the pressure on native vegetation. Important native vegetation to be protected through a management agreement, or removal of the area from the lease. | Ongoing | |
| Droving Stock | | | 68 |
| Raising Community Awareness | Promote landholders understanding about the value of roadside vegetation and of the potential impact stock droving has on roadside vegetation. | Ongoing | |
| Monitoring Impacts | Monitor impacts of stock droving on roadside native vegetation. | Ongoing | |
| Category A and B Vegetation | Discourage the droving of stock along Category A - C vegetation except where no suitable alternative route is found. | Ongoing | |
| Recreational Use of Road Reserves (Including Undeveloped Roads) | | | 69 |
| Raising Community Awareness | Promote communities understanding of the value of roadside vegetation and the potential impact recreational use of road reserves has on roadside vegetation. Discourage the recreational use of road reserves in Category A - C vegetation. | Ongoing | |
| Monitoring Impacts | Monitor impacts of recreational use of road reserves on roadside native vegetation. | Ongoing | |
| Promotion | Promote the environmental and tourist benefits of lawfully established and recognised public recreational tracks. | Ongoing | |
| Cultivation and Cropping | | | 70 |
| Permit Requirements | Cropping works on roadsides is not permitted within the Rural City of Murray Bridge. | N/A | |
| Community Awareness | Ensure landholders are aware that cropping works on roadsides is not permitted within the Rural City of Murray Bridge. | N/A | |
| Removal of Plant Material | | | 71 |
| Permits | Permits for seed collection on roadsides will be given preference for local revegetation projects. DEW and Council permission is required for seed collection. | Ongoing | |
| Tree Trimming | Tree trimming programs (for verge maintenance) will be undertaken in consultation with local revegetation groups to facilitate the collection of seed from trimmed vegetation. | Ongoing | |



| Activity | Action Statement | Timeline | Page |
|--|---|----------|-----------|
| Community Awareness | Distribute information to landholders on the guidelines for removal of plant material on road reserves. | Ongoing | |
| Maintenance of Biodiversity | | | 78 |
| Community Awareness | Promote community interest and involvement in roadside vegetation management. | Ongoing | |
| Community Involvement | Involve local people and appropriate tertiary, government or other institutions in roadside disturbance/vegetation maintenance projects. | Ongoing | |
| Expertise | Provide the local community with direct access to local expertise. | Ongoing | |
| Monitoring | Monitor the effectiveness of roadside management techniques and ascertain any changes in condition. | Ongoing | |
| Priority Setting | Identify high and medium conservation value roadsides to aid in the maintenance of vegetation diversity. | Ongoing | |
| Protection of Native Vegetation of High Conservation Significance | | | 81 |
| Roadside Vegetation Surveys | Conduct roadside vegetation surveys to determine where significant species or vegetation occurs. | Ongoing | |
| Roadside Marker System | Establish and manage a Roadside Marker System to identify significant sites (vegetation of high ecological value), particularly for Council staff or contractors. | Ongoing | |
| Site Register | Develop a comprehensive Register of sites showing all threatened or significant vegetation and fauna areas, linked to standard Council databases. | Ongoing | |
| Training | Conduct training programs Council staff and others (e.g., contractors) Ensure all contractors and service providers are aware of the roadside quality and sites of significance before any works commence. | Ongoing | |
| Work Procedures | Develop work procedures to ensure the protection of significant sites. | Ongoing | |
| Monitoring | Monitor signed sites and review management (if necessary) in consultation with Landscape SA, NVC, the local community, field expert or the site nominator. | Ongoing | |
| Bush Care | In consultation with Trees for Life, Bush Care sites will be encouraged wherever possible to help actively manage important areas of native vegetation. | Ongoing | |
| Restoration of Roadside Vegetation | | | 83 |
| Priority Areas | Priority will be given to roadsides of high conservation significance, linking with the Murraylands and Riverland Landscape Board on regional priorities for revegetation and possible funding. | Ongoing | |



| Activity | Action Statement | Timeline | Page |
|-----------------------------|--|----------|------|
| Seed Collection | Collection of local native seed for annual revegetation program. | Ongoing | |
| Pest Control | Conduct pre/post pest plant and animal control work to encourage regeneration and rehabilitation of roadside vegetation. | Ongoing | |
| Community Participation | Involve Landcare and Community groups in programs for the planting of indigenous vegetation on roadside corridors. | Ongoing | |
| Raising Community Awareness | Provide information such as indigenous species lists and potential growers to the community to encourage authorised planting of local indigenous species on roadsides. | Ongoing | |



ANNUAL WORKS CLEARANCE PROPOSAL FORM UNDER REGULATION 11(23) – Verge clearance >1m

Local Council details

| | | |
|---|---|-------------------|
| Name of Local Council: | Authorised by Name: (CE or Delegated Authority) | Signature: |
| Local Council Project Supervisor: | Phone: | Email: |
| Local Council Staff/Contractor undertaking work: | Phone: | Email: |
| Start date: | Finish date: | |

| | Map reference No. | Road name | Road type (Arterial/Collector local) | Distance of road to be cleared (km) | Photo number | Threatened species present | Threatened communities present |
|---|-------------------|-----------|--|--|--------------|----------------------------------|--------------------------------------|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |



| | | | | | | |
|----|--|--|--|--|--|--|
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |

Continue details from item 1-10 below:

| | Vegetation Category (as per Table 3) | Age of the regrowth (years) | Width of roadside vegetation (m) total | Extent of verge clearance (m) from edge of carriage way | Clearance method (High or low method) | Assessor or relevant material* | Date assessed |
|---|---|-----------------------------------|---|---|---|-----------------------------------|---------------|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |

- Provide an aerial map locating where the clearance is proposed (clearance area overlay) to be cross referenced to the table.
- Provide representative photos of section of vegetation proposed to be cleared and where possible indicate photo locations (with coordinates).
- Provide for reasons for requiring the clearance of the verge.

***Note: a vegetation assessment is not required if there is existing information relating to the roadside vegetation, such as past roadside surveys.**

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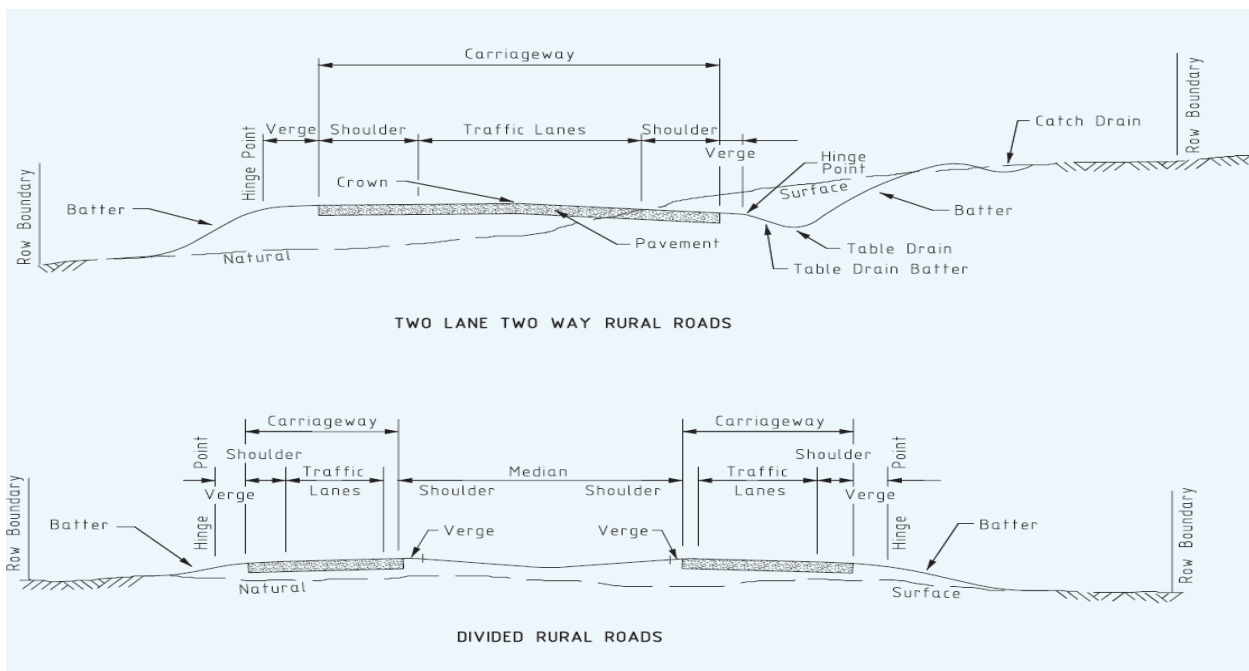
Glossary

Abbreviations

| | |
|------|--------------------------------------|
| DEW | Department for Environment and Water |
| LGA | Local Government Association |
| NVB | Native Vegetation Branch |
| NVC | Native Vegetation Council |
| RVMP | Roadside Vegetation Management Plan |

Definitions

Some of the terms commonly used in relation to roadside vegetation management in South Australia are listed below and, in the case of road construction, illustrated in the following diagram [except where specifically referenced, these terms are defined for the purpose of these guidelines]:



Typical Cross Sections of rural roads - Taken from *Rural Road Design: A Guide to the Geometric Design of Rural Roads* (Austroads, 2003) Update according to final design – see Guidelines.

Biological diversity or biodiversity - means the variety of life forms represented by plants, animals and other organisms and micro-organisms, the genes that they contain, and the ecosystems and ecosystem processes of which they form a part (*Native Vegetation Act 1991*).

Carriageway – That portion of a road or bridge devoted particularly to the use of vehicles, inclusive of the shoulders and auxiliary lanes (Austroads, 2003).

Catch drain - a surface channel constructed along the high side of a road or embankment, outside the batter to intercept surface water (Austroads, 2003).

Clearance (from the *Native Vegetation Act 1991*) means –

- (a) the killing or destruction of native vegetation;
- (b) the removal of native vegetation;
- (c) the severing of branches, limbs, stems or trunks of native vegetation;
- (d) the burning of native vegetation;
- (e) any other substantial damage to native vegetation, and includes the draining or flooding of land, or any other act or activity, that causes the killing or destruction of native vegetation, the severing of branches, limbs, stems or trunks of native vegetation or any other substantial damage to native vegetation.

Clearance envelope – the area where vegetation clearance is required to allow for the passage of legal height vehicles across the full width of the carriageway.

Secondary - clearance envelopes are further areas required to be kept clear of vegetation adjacent to the carriageway for adequate visibility of other traffic, signs and other roadside furniture.]

Dead plants - (under the definition of native vegetation in section 3(1) of the *Native Vegetation Act 1991*), means the class of plants, or parts of plants, comprising trees of a species indigenous to South Australia –

- (a) that have a trunk circumference (measured at a point 300 millimetres above the base of the tree) of –
 - (i) in the case of a tree located on Kangaroo Island – 1 metre or more; or
 - (ii) in any other case – 2 metres or more; and
- (b) that provide or have the potential to provide, or are a [part of a group of trees or other plants (whether alive or dead) that provide, or have the potential to provide, a habitat for animals of a listed threatened species under the *Environment Protection and Biodiversity Conservation Act 1999* of the Commonwealth, is declared to be included in that definition.

Dead timber (firewood) – in this plan generally refers to woody debris from standing or fallen dead trees or branches. It does not usually encompass fine fuels – which generally refer to grass, leaves, bark and twigs less than 6 mm in diameter (SA CFS web site).

Droving or Movement of Stock - Moving stock, usually cattle or sheep, from one place to another by driving them slowly on foot along roadways or stock routes.

Formation - The surface of the finished earthworks, excluding cut or fill batters (Austroads, 2003).

Frangible - Understorey vegetation or plants with slender stems which give way break or uproot on impact

Grazing of Stock - Using a particular area for grazing rather than for movement of livestock.

Indigenous (or Native) Vegetation - Local (naturally established) native vegetation species of the type occurring prior to European settlement in this district.

Landscape SA – Landscape SA Boards replaced NRM Boards in 2019. *Landscape SA Act 2019* replaced *Natural Resource Management Act 2004* in 2019

Local council – *in these guidelines has the same meaning as* “council” under the *Local Government Act 1999*; i.e., a council constituted under that Act; the principal role being “...to provide for the government and management of its area at the local level and, in particular—

- (a) to act as a representative, informed and responsible decision-maker in the interests of its community; and
- (b) to provide and co-ordinate various public services and facilities and to develop its community and resources in a socially just and ecologically sustainable manner; and
- (c) to encourage and develop initiatives within its community for improving the quality of life of the community; and
- (d) to represent the interests of its community to the wider community; and
- (e) to exercise, perform and discharge the powers, functions and duties of local government under this and other Acts in relation to the area for which it is constituted”

Native vegetation – under Section 3(1) of the *Native Vegetation Act 1991*: native vegetation means a plant or plants of a species indigenous to South Australia including a plant or plants growing in or under waters of the sea but does not include—

- (a) a plant or part of a plant that is dead unless the plant, or part of the plant, is of a class declared by regulation to be included in this definition; or
- (b) a plant intentionally sown or planted by a person unless the person was acting—
 - (i) in compliance with a condition imposed by the Council under this Act or by the Native Vegetation Authority under the repealed Act, or with the order of a court under this Act or the repealed Act; or
 - (ii) in pursuance of a proposal approved by the Council under Part 4 Division 2; or
 - (iii) in compliance with a condition imposed by a Minister, statutory authority or prescribed person or body under—
- (c) the *River Murray Act 2003*; or
- (d) *South Australia Landscape South Australia Act 2019*; or
- (e) any other Act prescribed by the regulations for the purposes of this paragraph;”

Natural regeneration - new growth of indigenous native plants from seed or sucker growth.

Non-frangible - Plant species with a stem diameter (at maturity) of 100mm or greater with rigid, large or sturdy stems which will not readily break, bend or crush upon impact by a typical passenger vehicle, and could be expected to inflict significant damage to the vehicle and possibly cause injury to vehicle occupants.

Pavement – That portion of a road designed for the support of, and to form the running surface for, vehicular traffic (Austroads, 2003).

Public road (from section 4 of the *Local Government Act 1999*), is —

- (a) any road or land that was, immediately before the commencement of this Act, a public street or road under the repealed Act; or
- (b) any road—
 - (i) that is vested in a council under this or another Act; or
 - (ii) that is placed under a council's care, control and management as a public road after the commencement of this Act, but not including an alley, laneway, walkway or other similar thoroughfare vested in a council; or
- (c) any road or land owned by a council, or transferred or surrendered to a council, and which, subject to this Act, is declared by the council to be a public road; or
- (d) any land shown as a street or road on a plan of division deposited in the Lands Titles Registration Office or the General Registry Office and which is declared by the council to be a public road; or
- (e) any land transferred or surrendered to the Crown for use as a public road that was, immediately before the transfer, held by a person in fee simple or under a lease granted by the Crown, (and includes any such road that is within the boundaries of a public square);

Property Line - The boundary between a road reserve and the adjacent land (Austroads, 2003).

Remnant Vegetation - Surviving indigenous vegetation.

Road (from *Roads (Opening and Closing) Act 1991*) is —

- (a) a public road within the meaning of section 4 of the *Local Government Act 1999*; or
- (ab) an alley, laneway, walkway or other similar thoroughfare vested in a council; or
- (b) in relation to a part of the State not within a council area—
 - (i) a road or street delineated and shown on a public map or plan of the State as laid out for public purposes by the Crown; or
 - (ii) a road or street opened under this Act or any other Act relating to the opening of new roads and streets; or
 - (iii) a road or street transferred or surrendered to the Minister of Local Government or the Crown by the owner or lessee for use as a public road or street; or
 - (iv) a road or street declared or dedicated under any other Act to be a public road or street, and includes part of a road

Roadside - the strip of land between the road formation and the boundary of the road reserve.

Roadwork (from the *Local Government Act 1999*) means—

- (a) the construction of a road; or
- (b) the maintenance or repair of a road; or
- (c) the alteration of a road; or
- (d) the construction of drains and other structures for the drainage of water from a road; or
- (e) the installation of fences, railings, barriers or gates; or
- (f) the installation of traffic control devices, traffic islands or parking bays; or
- (g) the improvement of a road including (for example)—
 - (i) landscaping and beautification; or
 - (ii) installation of road lighting; or
- (h) the installation of amenities or equipment on or adjacent to a road for the use, enjoyment or protection of the public; or
- (i) the installation of signs on or adjacent to a road for the use or benefit of the public;

Road furniture - A general term covering all signs, streetlights and protective devices for the control, guidance and safety of traffic, and the convenience of road users.

Road reserve - Refers to land set aside for a road, whether constructed or not, and extends from property boundary on one side to property boundary on the other side.

Roadside vegetation - Is any vegetation growing on a road reserve, and includes vegetation on a roadside (the area adjacent to a formed road), and vegetation growing on an unmade or undeveloped road reserve; this includes native vegetation of conservation value and vegetation dominated by introduced species.

Secondary clearance envelopes - are areas required to be kept clear of vegetation adjacent to the carriageway for adequate visibility of other traffic, signs and other roadside furniture.

Shoulder – The portion of formed carriageway that is adjacent to the traffic lane and flush with the surface of the pavement (Austroads, 2003).

Sight Triangle - The area of land between two intersecting roadways over which vehicles on both roadways are visible to each driver (Austroads, 2003).

Significant Environmental Benefit - The *Native Vegetation Act 1991* includes provisions requiring the clearance of native vegetation to be offset by an environmental gain, referred to by the legislation as a 'Significant Environmental Benefit' (SEB).

- The rationale for an SEB offset recognises that clearance of native vegetation will result in the loss (even temporary) of habitat, biodiversity and/or other environmental values, in a landscape that has already been significantly modified by human settlement.
- The SEB provides a mechanism to minimise that loss by managing, restoring or re-establishing areas of native vegetation that result in a better outcome for the environment.

Mitre drain - The side drain of a road adjacent to the shoulder, having its invert lower than the pavement base and being part of the formation (Austroads, 2003).

Threatened Species - Threatened species are those plant and animal species considered to be at risk of extinction in the wild.

Travelled way - That portion of a carriageway ordinarily assigned to moving traffic, and exclusive of shoulders and parking lanes (Austroads, 2003).

Traffic Lane - A portion of the carriageway allocated for the use of a single line of vehicles.

Unmade road - Means a road that is not sealed with bitumen (or other surfacing material) for use by motor vehicles. (*Roads (opening and closing) Regulations 2006*).

Undeveloped road – A surveyed road reserve that has never been developed as a road. Some are totally cleared and pass unmarked through farm paddocks, and others retain native vegetation.

Verge – That portion of the formation not covered by the carriageway or footpath (Austroads, 2003).



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