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## Roadside Vegetation Management Plan

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(IE2015-8098)

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## Recommendations

1. That this road reserve management plan be adopted by District Council of Barunga West.
2. That vegetation surveys be considered for all developed road reserves, if funding is available.
3. That the undeveloped road reserves be considered for survey for their conservation values, if funding of a consultant is available.
4. That Council staff and contractors be familiarised with the management plan.
5. That significant remnant roadside vegetation be marked in accordance with the protocols used in South Australia.
6. That the public be informed of Councils roadside vegetation management plan.
7. That the plan be reviewed following the release of the Native Vegetation Council's *Guidelines to Roadside Management Plan* document.
8. That any contracts employing outside contractors shall incorporate clauses requiring compliance with the roadside vegetation management plan.

## Introduction

Roadside Vegetation Management Plans are an important tool to enable local governments to meet their obligations under the Native Vegetation Act 1991 and associated Regulations. The Act contains protective and penalty clauses designed to prevent the un-necessary damage or destruction of native vegetation. However, local governments are chartered with a number of activities which may damage vegetation or otherwise compromise the Act. Some engineering and management activities likely to damage vegetation are exempted under the Act, whereas some traditional methods are not. The purpose of this management plan is to outline work practices which protect native vegetation and meet the requirements of the Act, while still providing the minimum of restrictions on local government engineering and maintenance responsibilities.

This report sets out the major issues to be addressed in roadside management in the Barunga West district. Additional management guidelines will apply to those roads which have been mapped using the Roadside Vegetation Drive-By Survey methods as designed by Planning SA and Transport SA. It is Council's desire that the remaining roads be considered for mapping, when suitable funds can be accessed by Council.

A large number of issues are relevant to the management of roadside native vegetation. They are summarised in Table One and then explained in detail in the following text. Many of the present uses of, and impacts on, roadside vegetation are detrimental to the conservation value of the vegetation. Some are necessary, some require careful planning, and some should be discontinued. For example, engineering works and maintenance of existing roadways must be continued, although they may at times compromise ideal conservation management. Pest control and fire hazard reduction on roadsides are issues which need to be considered, but require carefully planned guidelines to prevent damaging native vegetation unnecessarily. There are a number of amenity and recreational uses of the roadsides such as motorbike riding which are traditional, but should be discouraged or prevented.

The roadside survey maps (refer to Appendix C) describing the location and condition of remnant native vegetation on roadsides which accompanies this report should always be referred to when decisions regarding roadside management or activities are made which are likely to impact on remnant roadside vegetation. District Council of Barunga West maintains an extensive road network, as shown in Table Two.

## Key Objectives

The Key Objectives for roadside vegetation within the boundaries of the District Council of Barunga West are:

- 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
- Establish and maintain an assessment process of minor clearance proposals to ensure compliance with the Plan and the Native Vegetation Act
- Clearly identify unauthorized activity in road reserves
- Improve the awareness of roadside vegetation management issues for District Council staff and contractors, the community and other authorities

## Table 1 – Native Vegetation Management Issues on Barunga West Roadsides

ISSUES	STATUS	ACTION	ROAD CLASSES
<b>CONSERVATION ISSUES</b>			
Undeveloped Road Reserves	Unprotected	Survey and protection required	
Revegetation	Continuing	Planning and approval required	Not in A or B
Seed Collection	Necessary	Some control required	
Roadside Marking	Desirable	Initiate in district	A, B, C some D
Staff Awareness	Necessary	Initiate in district	
<b>FUNCTIONAL ISSUES</b>			
Vegetation Removal	Necessary	Only per management plan	
Road Construction	Necessary	Provide guidelines	
Road Maintenance	Necessary	Provide guidelines	
Road Safety	Necessary	Provide guidelines	
Work Site Rehabilitation	Necessary	Include in works planning	
Vehicle & Machinery Use	Necessary	Minimise vegetation disturbance	
Stormwater Drainage	Necessary	Seek lowest impact sites	Not in A, B, or C
Building & Development	Justify	Minimise vegetation disturbance	
Service Provisions	Necessary	Minimise vegetation disturbance	Avoid A and B
Stockpiles & Dumpsites	Necessary	Not in native vegetation	Not in A, B, C or D
<b>RURAL LAND USE ISSUES</b>			
Cropping	Controlled	Permit required	Not in A, B, C or D
Grazing	Controlled	Permit required	Not in A, B, C or D
Stock Movement	Necessary	Minimise vegetation disturbance	
Fire Hazard Reduction	Necessary	Firebreaks not on roadsides	
Earthmoving & Ploughing	Justify	Planning and permit required	Not in A, B, C or D
Clearance Along Fencelines	Necessary	Minimise	
Property Access	Necessary	Minimise	
Vermin & Weed Control	Justify	Permit required if in vegetation	
<b>CULTURAL AND RECREATIONAL ISSUES</b>			
Firewood Collection	Undesirable	Prohibit	Not in A, B, C or D
Wayside Stops	Controlled	Only designated areas	Not in A, B, C or D
Recreational Vehicles	Detrimental	Prohibit roadside use	Not in A, B, C or D
Horse Riding	Controlled	Not in native vegetation	Not in A, B, C or D
Plantings	Desirable	Planning and approval required	Not in A or B
Signage of Significant Sites	Desirable	Initiate at selected sites	Usually A and B

Even though these areas are considered to contain very little or no native vegetation, sites with a *Category E* listing should be reassessed before any activities are permitted that could have an impact on pockets of remaining native vegetation. Any approval for such activities are to be obtained from the Native Vegetation Council, or the Council, whichever is appropriate. Activities include stockpiling and dumpsites, cropping, grazing, earthmoving and ploughing, recreational vehicle tracks and horse riding.



## Table 2 - District Council Of Barunga West Road Network

ROAD LENGTHS (KM)	SEALED	FORMED	UNFORMED	TOTAL
In Built-up Areas	34	7	0	41
In Non Built-up Areas	41	788	109	938
<b>TOTAL</b>	<b>75</b>	<b>795</b>	<b>109</b>	<b>979</b>

South Australian Local Government Grants Commission – General Information Return Year Ended 30 June 2011

Vegetation clearance within the Barunga West district is substantial. Roadsides contain the principal remaining examples of the Mallee shrublands, and Mallee box (*Eucalyptus porosa*) and Native pine (*Callitris sp.*) woodlands in the district. These communities originally covered parts of the southern and eastern parts of the district.

Ungrazed examples of native grasslands, Senna shrublands and swampy shrublands with Nitre Bush (*Nitraria billardieri*) are now only found on roadsides and these sites are frequently disturbed because they are usually not recognised as native vegetation. These communities were extensive in the northern and western parts of the district.

Classes of roadsides are referred to in various places throughout this plan. They represent the scoring of the native vegetation as recorded in the roadside surveys. The scoring system is outlined in Tables Three, Four and Five below. The overall classification given to a segment of roadside are:

- Category A: Vegetation associations in excellent or good condition.
- Category B: Vegetation associations in moderate condition or a lower priority association in excellent condition.
- Category C: Vegetation associations in poor condition or a lower priority association in moderate condition.
- Category D: Limited native vegetation in poor condition.
- Category E: Very little or no native vegetation present.

## Table 3 - Matrix of Overall Significance Values

		Conservation Priority Rating				
		1	2	3	4	5
Condition	1	A	A	B	(C)	(C)
	2	A	B	B	(C)	(D)
	3	B	B	C	D	(D)
	4	C	C	D	E	E
	5	C	D	D	E	E

## Table 4 - Overview Condition Of Roadside Vegetation

CONDITION RATING	OVERVIEW CONDITION	DESCRIPTION
1	Excellent	Excellent. Very little or no sign of alien vegetation in the understorey*. Resembles the probable pre-European vegetation.
2	Good	Good. High proportion of native species and native cover in the understorey*. A reasonable representation of the probable pre-European vegetation.
3	Moderate	Moderate. Substantial invasion by alien plants but the native understorey* persists. May be a high diversity of native species with low cover, or a low proportion of native species with high native cover.
4	Poor	Poor. The understorey* consists primarily of alien species although a small number of natives persist.
5	Very Poor	Very poor. The understorey* consists only of alien species.

\*Or all Strata if the upper and lower strata are difficult to distinguish.

## Table 5 - Conservation Priority Of Roadside Vegetation

RATING	DESCRIPTION
1	Very high conservation rating; includes any associations whose Conservation Status was identified by Neagle 1995 as Poor or Nil (little or no representation in Conservation Parks or Heritage Agreements); typically includes associations that are most extensively cleared and/or most degraded.
2	High conservation rating; includes associations whose Conservation Status was identified by Neagle 1995 as either Moderate or Reasonable (greater representation in Conservation Parks or Heritage Agreements); typically includes associations that are moderately cleared; may include mixed native vegetation that includes significant species in the overstorey.
3	Moderate conservation rating; includes relatively common associations whose conservation status was identified by Neagle as either Reasonable or Excellent; may include mixed native vegetation that contains common species in the overstorey.
4	Low conservation rating; may include some mixed native ± alien vegetation that cannot be categorized readily into a formal association type.
5	Of no conservation significance; very little or no native vegetation.
9	Nil Conservation Rating; of no conservation significance; very little or no native vegetation.

In addition to Neagle 1995 (listed as a reference "An update of the Conservation Status of the Major plant Associations of South Australia"), could also include the recently updated: *Provisional List of Threatened Ecosystems of South Australia* DEH (in progress) unpublished and provisional list as a useful reference.

## Conservation Issues

- Undeveloped Road Reserves
- Revegetation
- Seed Collection
- Roadside Marking
- Works Programs
- Training & Education

Roadside vegetation is an extremely valuable resource in the Barunga West district. Roadsides contain most of the Mallee and woodland vegetation remaining in the district in reasonable or good condition, and all of the ungrazed grassland and shrubland remnants. Disturbance of the soil surface and ground layer vegetation is irreversible. It is therefore vital that roadside vegetation be protected from further disturbance and that management processes are put into place to ensure its maximum protection. This plan is an important element of those processes.

For any conservation or biodiversity purpose the appropriate plant community at a site is that which originally grew there. Where remnants are still present they should be conserved, and when resources are available, be enhanced and rehabilitated.

Too often unrecognised native vegetation is damaged or destroyed by well-meaning, but inappropriate tree-planting and revegetation projects. Native plant communities with few trees originally such as grasslands and samphire and saltbush shrublands are particularly prone to this disturbance because the concept of “no trees = native vegetation must be gone” is still strong. It is also a waste of valuable resources because often the species being planted will not grow in inappropriate habitats. Expert botanical advice about a proposed revegetation site may be required if pre-European vegetation maps are not available to help in the selection of appropriate species. In any case, careful site inspections should be made to prevent damage to, or destruction of, existing native species. Council should ensure that all revegetation projects address these issues during the planning stages. There are cases where amenity plantings of non-indigenous plant species are appropriate for a site. If no native vegetation remains at a site then plantings of non-indigenous species for shade, windbreaks, aesthetic values, or other purposes may be appropriate. However, there should be a clear distinction made between these amenity plantings and those with conservation value, particularly in the allocation of conservation funding. Particular care is needed to ensure that native species often mistaken as weeds such as Nitre bush (*Nitraria billardieri*), Native boxthorn (*Lycium australe*) and Spiny lawrencia (*Lawrencia squamata*) are not disturbed or destroyed inadvertently.

Weeds are a threat to remnant native vegetation. Unfortunately, the narrow shape of roadsides facilitates weed invasion. The largest contributing factor to weed presence is soil surface disturbance, which allows the initial invasion, and allows them to remain in spite of weed control programs. Therefore every action which minimises surface disturbance on roadsides contributes to the well being of native vegetation.

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## Undeveloped Road Reserves

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UNDEVELOPED ROAD RESERVES SHOULD BE ASSESSED FOR CONSERVATION VALUE AND MANAGED FOR THEIR CONSERVATION VALUES WHERE APPROPRIATE

Undeveloped road reserves often contain native vegetation, sometimes in very good condition. Many have been leased to neighbouring landowners and used for grazing, cropping or access and the native vegetation has been removed or degraded. All undeveloped reserves should be assessed for remnant native vegetation and those with such vegetation still present managed to conserve and/or enhance its conservation values. The assessment should include suitability as a wildlife corridor as one of its parameters, as many undeveloped reserves, although having degraded or destroyed native vegetation, are suitable for revegetation as corridors. Road reserves which are presently leased should be assessed for significant native vegetation present.

New proposals for grazing of native vegetation in undeveloped road reserves require clearance approval from the Native Vegetation Council, 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 management agreement or through removal of the area from the lease.

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## Revegetation

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REVEGETATION PLANS SHOULD CONSIDER THE NATIVE VEGETATION ASSOCIATION ORIGINALLY PRESENT AT THE PROPOSED SITE AND BE APPROVED BY COUNCIL

Revegetation is both widespread and popular. It is an important educational tool for land managers who can become involved in local conservation and learn more about the issues of biodiversity and sustainability. However, many revegetation projects accidentally cause damage to, or the destruction of remnant native vegetation through poor planning and a failure to properly recognise some native vegetation communities. Numerous areas of high quality native grassland have been destroyed by herbicides or cultivation to make way for inappropriate tree-plantings. Many planted trees and shrubs simply die after being inappropriately planted in saline sites originally vegetated by Samphires or Nitre bush. It is therefore important that revegetation projects on roadsides be planned with due consideration for the vegetation community originally present at the site, and that they are also planned with consideration to any existing native species still present on the site. Expert botanical inspection may often be required to identify a site's original vegetation and confirm any remaining native species.

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## Seed Collection

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SEED COLLECTION ON ROAD RESERVES REQUIRES APPROVAL

Roadsides are often an ideal source of local plant seed, however some control and care is required to ensure that collecting is not unduly destructive or that over-collection does not occur. Collectors require a permit from National Parks and Wildlife SA to collect plant material generally, and a specific permit to collect threatened species or from threatened habitats. All applications for permission to collect seed should include details of the project, target species, estimated quantities and collecting sites, and have a collecting permit before approval is given by the District Council of Barunga West.

Requests for flower and live timber harvesting will be referred to the Native Vegetation Council Secretariat of the Department of Environment, Water and Natural Resources for consideration.

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## Roadside Marking

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REMNANT NATIVE VEGETATION ON ROAD RESERVES SHOULD BE CLEARLY MARKED TO PREVENT ACCIDENTAL DAMAGE

A standardised system of marking remnant native vegetation on road reserves has been instituted by Transport SA and a number of councils in South Australia. The markers are blue and white plaques, 125 x 170 mm in size, with a stylised arrow, the council initials and a segment number marked on the front, and a diagonal white stripe on the reverse. They are designed to be mounted with two gutter bolts onto star-droppers placed at each end of the vegetation patch. A simple data list is kept which links the segment numbers to a vegetation patch and describes the type of vegetation and any special management requirements that it may have. It is important that other agencies who may have reason to work on road reserves within the council area are advised of the marking system, and that roadside workers are briefed to the significance of the markers. Adjacent landowners should also be briefed as to the significance of the markers. Segments of roadsides with vegetation classified as being in condition A and B should be marked. Some segments classified as condition C may also be marked. (Refer to Appendix D).

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## Works Programs

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THE ROADSIDE MANAGEMENT PLAN SHOULD BE INCORPORATED INTO ALL WORKS PROGRAMS

Planning of works programs should incorporate the principles and methods of roadside vegetation management described in this plan. Planning of works should also consider the classes of remnant vegetation (as shown on the accompanying vegetation mapping – refer to Appendix C “Roadside Vegetation Survey Maps”) in which works may occur or be adjacent to. A, B or C class roadsides will generally require more vegetation conservation issues to be considered in the works plan. With vegetation management included in works plans council staff will also rapidly learn both the importance of, and the methods used in, roadside vegetation conservation and management.

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## Training & Education

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ALL STAFF INVOLVED IN WORKS ON ROAD RESERVES SHOULD UNDERSTAND THE CONSERVATION VALUES PRESENT IN THE DISTRICT AND THE ROADSIDE MANAGEMENT PLAN

All roadside management plans actions depend mostly on the understanding and goodwill of the various workers with on-ground responsibilities to be successful. To this end it is very important that they are given training which demonstrates and explains the conservation values and demonstrates the different types of roadside vegetation present in their district. Most workers will be familiar with the general vegetation on roads in the district, and some may have a personal interest in the plants and animals present, but may not be aware of the significance of remnant vegetation growing there. Materials need to be on hand for day-to-day use, and available maps and reports should be provided for reference. It is also very important that the purposes and requirements of the roadside management plan are carefully explained, and that this understanding is regularly supported by further training. Provision needs to be made for other agencies likely to be working on roadsides within the district to become familiar with the management plan, and a procedure put in place to ensure that all contractors understand the plan before they commence any roadside works. It is envisaged that Yorke & Mid North NRM staff will be consulting any training of council staff.

## Functional Issues

- Vegetation Removal
- Road Construction
- Road Maintenance
- Road Safety
- Work Site Rehabilitation
- Vehicle and Machinery Activity
- Stormwater Drainage
- Building and Development
- Service Provision
- Stockpiles and Dumpsites

A major function of district councils is the provision of safe and efficient roadways and supporting transport infrastructure. In the past, this process necessarily involved large scale clearance of native vegetation as road networks were established. Councils are nowadays occupied with the maintenance of road networks which requires some native vegetation disturbance during engineering works and routine maintenance. However, they are now rarely required to develop new roads, and due to budget restraints, more likely to be grappling with the issues of trying to adequately maintain roads which already exist, or closing roads to reduce costs.

In addition to these traditional responsibilities, Councils have been charged with the responsibility of being the managers of their remnant roadside vegetation from a conservation perspective on both developed and undeveloped road reserves. The goals of the two different responsibilities of engineering and conservation are often contradictory, and education and some changes in attitude are necessary to adequately meet them. The management plan points below reflect the need to incorporate conservation issues into all facets of Council works.

Remnant roadside vegetation is a large proportion of the remaining vegetation within the Barunga West district, and the Council is therefore the major conservation manager.



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## Vegetation Removal

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### ANY VEGETATION REMOVAL SHOULD BE APPROVED

When the vegetation removal is thought to be justified, the district roadside vegetation maps and the register of significant sites should be consulted first. All vegetation clearance other than routine road maintenance requires approval from the Native Vegetation Council Secretariat of the Department of Environment, Water and Natural Resources. The Infrastructure Services Manager will obtain this approval as required. If any proposed clearance involves significant native vegetation, the proposal should be referred to the Native Vegetation Council Secretariat before any further approvals are sought.

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## Road Construction

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### NEW ROAD CONSTRUCTION IN AREAS OF NATURAL VEGETATION REQUIRES APPROVAL FOR VEGETATION CLEARANCE FROM THE NATIVE VEGETATION COUNCIL OF THE DEPARTMENT FOR WATER, LAND AND BIODIVERSITY CONSERVATION

All vegetation clearance other than routine road maintenance requires approval. The Manager – Works will obtain this approval as required.

Clearance approval from the Native Vegetation Council is required for new roadworks (construction, widening and realignment) which involve clearance of native vegetation. Note that this requirement does not apply to very minor and localized clearance, such as pruning of branches or removal of one or two tree saplings or shrubs which are known to be common in the area. However, even in these cases it is recommended that the Native Vegetation Council Secretariat be advised prior to the work. It is just possible that the site may contain a small, visually insignificant plant species (eg orchid or native grass) which is of particular conservation significance. A telephone call to the Secretariat will enable records to be checked.

Where possible, advise on an annual basis is to be provided to the Native Vegetation and Biodiversity Management Unit regarding new roadworks planned for the forthcoming year in areas of native vegetation. This can be important as, if the matter needs to be referred to the Native Vegetation Council, delays can occur.

Steps to minimise the damage to native vegetation during road works are:

- **Identify the class of the roadside and the quality and significance of roadside vegetation.** Refer to the district roadside vegetation map during planning stages and develop a works plan that reflects the values of the remnant vegetation.
- **Clearly mark the construction zone and the limits of stripping, clearing and disturbance.**
- **Always stay within the construction zone.** This will prevent disturbance to surrounding vegetation, and applies to all processes, machinery, equipment and materials.
- **Stand machinery and stockpiles on cleared land.** Identify native grasslands first.
- **Only use the appropriate type, and smallest-sized machine for the job.**
- **Plan vegetation removal.** Only remove what is necessary.
- **Do not push or dump cleared vegetation into surrounding native vegetation.** This increases the fire hazard, introduces weeds, harbours rabbits and causes physical damage.
- **If there is no alternative to burning do not burn near vegetation.**
- **Chip light material left over from tree removal into mulch to spread the local seed.** This mulch can be used on disturbed areas to start the re-establishment of native vegetation from seed contained in the mulched material.

- **Strip and stockpile topsoil from areas of native vegetation and re-use as soon as possible.** Don't re-use soil with weed seeds in it.
- **Control erosion.** Minimise vegetation removal; leave batters rough to hold topsoil; limit access to the area required for construction; make adequate drainage systems.
- **Avoid 'tidying up' roadside vegetation after construction.** The less disturbance to the ground surface the better.
- **Clean down machinery before starting at a new site.** This will minimise the spread of weeds.

Council has adopted standards for road construction, which should be referred to when works are proposed.

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## Road Maintenance

OVERHANGING TREES SHOULD NOT BE CUT ANY MORE THAN NECESSARY FOR SAFETY AND IN ANY CASE, TREE TRIMMING SHOULD NOT EXCEED 2 METRES PAST THE GRADER LINE, OR 5 METRES HIGH (SEE APPENDIX A FOR FURTHER GUIDELINES)

Low impact methods, for example chainsaw, slashing etc, should be adopted for this type of clearance.

Mallees with multiple stems should have the stems being removed cut down to ground level. Trees should have the branch being removed cut back to the next biggest branch, or the trunk, leaving a short collar (approximately 25-50mm). Trimmed material should not be dumped in remnant roadside vegetation. It should be chipped or mulched if returned to roadsides, or removed to a suitable dumpsite. Trimmings of plants such as Eucalyptus and Melaleuca which usually include mature seed could be dumped on degraded sites to add seed to the soil seed bank.

Roads should not be graded any wider than necessary for safety after considering the amount of usage the road will get. Approval from the Infrastructure Services Manager is required to widen any roads past their present width. Graded spoil should not be allowed to enter native vegetation. It degrades the vegetation and provides an establishment site for weeds.

Council has adopted standards for road maintenance, which should be referred to when works are proposed.

Maintenance of existing roadside vegetation clearances by low-impact methods (e.g. slashing, rolling, chainsaws), can generally proceed without clearance approval. Clearance approval from the Native Vegetation Council is needed where clearance exceeding previously established safety standards (as per Framework for the Clearance of Native Vegetation under Regulation 5[1][b] - Appendix F), is proposed, or regrowth has reached the stage where high impact methods (eg bulldozing) are proposed.

Reference also must be made to Council's Tree Policy (Refer Appendix B).

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## Road Safety

VEGETATION CLEARANCE SHOULD COMPLY WITH TREE TRIMMING GUIDELINES LISTED UNDER ROAD MAINTENANCE ABOVE

At intersections and road junctions vegetation clearance should comply with the South Australian code of practice criteria for the installation of "Give Way" and "Stop" signs in relation to sight distance, and to the 'safe intersection sight distance' criteria as detailed in the standard guides to traffic engineering practice used by the Council (detailed in Appendix A). Clearance at crests and on the insides of curves can be increased if required, after consultation with the NVBMU and in accordance with the Framework for the Clearance of Native Vegetation under Regulation 15(1)(b) - Appendix F.



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## Work Site Rehabilitation

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A WORKSITE REHABILITATION PLAN SHOULD BE MADE BEFORE ANY ROADSIDE WORKS COMMENCE

This plan should consider whether any restoration work is necessary where native vegetation has been disturbed. It should also consider strategies to reduce weed infestation of a site, and the long-term outcomes required. Successful rehabilitation will largely depend on the construction and maintenance guidelines being adhered to as outlined above. Appropriate revegetation and carefully planned weed control done as an integral part of roadworks can lead to significant decreases in later management requirements for issues such as fire hazard and noxious weed control, and greatly enhance conservation values at the same time. Such rehabilitation will incrementally improve the conservation values of the Council's roadsides rather than reduce them. Weed issues should be identified before road works begin, and a program developed to minimise the potential for weed spread.

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## Vehicle and Machinery Activity

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VEHICLES AND MACHINERY SHOULD ONLY ENTER ROADSIDE VEGETATION WHEN ABSOLUTELY NECESSARY

When vehicle access to roadside vegetation is deemed necessary, the district roadside vegetation management plan, vegetation maps and the register of significant sites should be referred to first. The most appropriate machine, of the minimum practical size should be used. Disturbance of the soil surface should be kept to a minimum to avoid weed infestation. Unless routine maintenance works, consultation with the Native Vegetation Council Secretariat is required.

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## Stormwater Drainage

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DRAINAGE CUTS ON RURAL ROADS SHOULD BE KEPT TO THE MINIMUM REQUIRED TO COPE WITH WATER PONDING AND STORM EVENTS

Sites selected for drainage cuts should be in areas containing little native vegetation, or constructed in such a way to have minimal impact on native vegetation. Spoil should not be graded into existing native vegetation. Where Possible existing drains in roadside native vegetation should be rehabilitated and relocated.

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## Building and Development

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COUNCIL TAKE AN ACTIVE ROLE DURING PLANNING TO MINIMISE THE IMPACT OF NEW DEVELOPMENT AND BUILDING ON NATIVE VEGETATION

At the planning stage native vegetation should be identified and provisions included in planning approvals which insure that it is not needlessly destroyed or damaged during new developments. Where native vegetation is likely to be impacted, all alternatives should be explored to minimise the impacts.

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## Service Provision

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WHERE AT ALL POSSIBLE NEW SERVICES SHOULD BE ROUTED TO AVOID DISTURBANCE TO NATIVE VEGETATION

This may mean using adjoining private land which has already been cleared. Where it is necessary to disturb native vegetation, the district roadside vegetation management plan, vegetation maps and the register of significant sites should be referred to first. Maintenance of existing services should follow the guidelines listed for Road Construction.

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## Stockpiles and Dumpsites

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STOCKPILES AND DUMPSITES SHOULD ALWAYS AVOID NATIVE VEGETATION

Where the roadsides are continuously vegetated this may mean making arrangements to use adjoining private land for the storage of road building material and overnight parking of machinery. Access to these sites should be via existing access tracks. Material dumps destroy native vegetation under them and later provide a weed establishment site.

## Rural Landuse Issues

- Cropping
- Grazing
- Stock Movement
- Fire Hazard Reduction
- Ploughing and Earthmoving
- Clearance Along Fencelines
- Property Access
- Vermin and Weed Control

As outlined previously, Council is the major conservation manager of remnant roadside vegetation within the Barunga West district.

In built-up areas, native vegetation has virtually been completely cleared. However in rural areas there are activities undertaken separate to local government operations which have the potential to impact heavily on remnant roadside vegetation. While agricultural production is traditionally the mainstay of local communities, policies are required to manage particular issues that have in the past either gone unchecked or been incorrectly managed, to the detriment of remnant vegetation.

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## Cropping

NO CROPPING SHOULD BE ALLOWED ON ROADSIDES WITHOUT THE SPECIFIC APPROVAL OF COUNCIL

Cropping should not be allowed on A, B and C class roads. Section 222 of the Local Government Act 1999 requires that any business activities on roadsides require a specific permit. In any case, if allowed, cropping should be confined to segments of road reserve which do not contain native vegetation. Agricultural activity promotes weed growth and therefore increases the seasonal fire hazard. It also removes any possibility of natural regrowth or revegetation.

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## Grazing

GRAZING SHOULD NOT BE ALLOWED ON ANY SEGMENT OF ROAD RESERVE CONTAINING REMNANT NATIVE VEGETATION

Grazing damages native vegetation and should not be allowed on roadsides. Funding should be sought to fence undeveloped road reserves which contain remnant native vegetation to prevent stock access to them. Existing grazing leases should be reviewed when they come up for renewal.

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## Stock Movement

LIVESTOCK MOVEMENT ALONG ROADS SHOULD BE CARRIED OUT AS QUICKLY AS PRACTICABLE, TO MINIMISE DAMAGE TO NATIVE VEGETATION

Travelling stock can have significant impact upon remnant native vegetation. Where possible, travelling stock should be diverted from roads with significant native vegetation to alternate routes where there is less potential for impact. Where native vegetation is present stock should be moved quickly enough to keep them within the central graded portion of the road reserve.

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## Fire Hazard Reduction

FIREBREAKS SHOULD BE PLACED ON CLEARED LAND

District Council of Barunga West District Bushfire Prevention Plan requires a 20 metre firebreak around assets in open agriculture areas.

Firebreaks should not be made on road reserves. Any firebreaks planned should be established on adjoining land. Previous permissions granted for firebreaks on road reserves should not be renewed.

Avoid dumping of trimmed, or cleared vegetation waste in existing vegetation as it increases the fire fuel load. Annual weeds encouraged by soil disturbance are usually a greater fire hazard than the original native vegetation.

Burning is not an appropriate method of fuel load reduction on road sides, especially in areas of native vegetation.

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## Ploughing and Earthmoving

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NO EARTH MOVING, PLOUGHING, OR CULTIVATION SHOULD BE ALLOWED ON ROADSIDES WITHOUT THE SPECIFIC APPROVAL OF COUNCIL

No ploughing should be allowed in class A, B or C roadsides or on segments of road reserve which contain native vegetation. Earth moving in native vegetation should only be allowed for road construction or maintenance as described above. Permits for ploughing of roadsides for the purposes of pest plant control may be issued by the Council on condition that the permit is for one occasion only, and that the purpose is to improve and reconstruct an area to allow alternate methods of control in the future. It should be noted that surface disturbance promotes the establishment and growth of weeds.

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## Clearance Along Fencelines

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FOR THE PURPOSE OF MAINTENANCE OR REPLACEMENT OF A FENCELINE, COUNCIL APPROVAL CAN BE OBTAINED TO CLEAR ROADSIDE VEGETATION WITHIN 1 METRE OF THE FENCELINE

Tree branches protruding through and bushes growing through the fenceline can be removed, as can vegetation growing on the actual fenceline. In specific circumstances where greater clearance is sought, approval must be obtained from the Native Vegetation Council.

Up to 5 metres can be cleared on the adjoining land to provide access for fence maintenance or construction. (refer to the Native Vegetation Regulations 2003 under the Native Vegetation Act 1991). Note that the 'fenceline regulation' 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 impeded reasonable access to the fence, the regulation cannot be used to clear that vegetation.

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## Property Access

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FOR THE PURPOSE OF ACCESS TO ADJOINING LAND, COUNCIL APPROVAL CAN BE OBTAINED TO CLEAR UP TO 5 METRES WIDTH FOR NORMAL VEHICLE ACCESS, AND UP TO 10 METRES WIDTH FOR MACHINERY ACCESS

Minimum clearance along the roadside to provide adequate sight distance is also allowed. This would typically be 10 metres in both directions. In specific circumstances where greater clearance is sought, approval must be obtained from the Native Vegetation Council.

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## Vermin and Weed Control

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LOW DISTURBANCE METHODS OF CONTROL SHOULD BE USED

Any clearance for control of pest plants and animals should be subject to rehabilitation or revegetation and a plan for this should be a condition of the approval. The Regional Authorised Officers of the Northern and Yorke NRM Board are familiar with appropriate techniques causing the minimum damage to native vegetation and should be referred to when control is needed. Permits to impact native vegetation will be issued only under the conditions listed above in "Ploughing and Earth Moving".

Clearance approval is required from the Native Vegetation Council 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 Native Vegetation Council Secretariat is able to approve clearance of a “non-sensitive” nature, and will determine whether the proposed clearance is of a sufficiently significant nature to warrant referral on to the Native Vegetation Council for decision.

Reference should be made to Appendix E, the Native Vegetation Council Guideline - “Clearance of Native Vegetation associated with the control of Plant and Animal Pests” which provides additional information on minimizing impacts to native vegetation during pest and animal control activities.

## Cultural And Recreational Issues

- Firewood Collection
- Wayside Stops
- Recreational Vehicles
- Horse Riding
- Plantings
- Signing of Significant Sites

Native vegetation should be an asset preserved as habitat for native fauna, a source for material for revegetation projects, and as an indication of original vegetation in an area.

Remnant vegetation can be enjoyed by the entire community, with appropriate protocols in place to ensure its preservation can coincide with recreational land uses.

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## Firewood Collection

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FIREWOOD COLLECTION IS **NOT** ALLOWED ON ROAD RESERVES

Live plant harvesting is prohibited by law. Dead material provides very important wildlife habitat and is preferred to remain in place. Firewood collection in native vegetation can cause significant damage

Collection of firewood on roadside reserves is prohibited.

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## Wayside Stops

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THE CREATION OF WAYSIDE STOPS AND VEHICLE PARKING OUTSIDE OF SPECIFICALLY DESIGNATED AREAS SHOULD ONLY OCCUR WHERE CLEARANCE OF NATIVE VEGETATION IS NOT REQUIRED.

Blocking of vehicle access may be needed to discourage the creation and use of parking and picnic areas in areas of native vegetation. Unfortunately native vegetation becomes a focus for these activities because it provides shelter and firewood. Considerable damage can be done by vehicles parking, turning and driving through vegetation. There are also the attendant problems of litter, vandalism and campfires, particularly at sites habitually used for parking. Care should be taken to identify native grassland which may be present.

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## Recreational Vehicles

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MOTORBIKES AND OTHER RECREATIONAL VEHICLES SHOULD BE PROHIBITED FROM DRIVING OTHER THAN ON THE MADE SURFACE OF ROAD RESERVES.

Tyres break up the surface of the soil allowing weed invasion, erosion, and encourage further access by other vehicles. These effects are particularly pronounced in the sandy Mallee soils. Repeated use of tracks causes severe erosion, damage to native understorey plants, compaction of soil, alteration of water runoff patterns, and rapid breaking down of walls in road-cuttings.

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## Horse Riding

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HORSES SHOULD NOT BE RIDDEN IN ROADSIDE NATIVE VEGETATION.

Horse trails should not be established in A, B or C class roadside vegetation. Horses' hoofs create considerable disturbance to the soil surface, particularly in sandy soils. This disturbance allows weed invasion and erosion to occur. Most road reserves have, by definition, prepared road surfaces, making riding in the roadside vegetation unnecessary. In some instances, where there are safety concerns regarding horses and traffic and where the roadsides are not well vegetated, it may be possible to designate trails separate from the road surface.

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## Plantings

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ALL CONSERVATION PLANTINGS SHOULD BE OF SPECIES APPROPRIATE TO THE SITE. AMENITY PLANTINGS SHOULD NOT BE ALLOWED IN, OR DISTURB NATIVE VEGETATION

Tree planting is a widespread and popular activity. For any conservation or biodiversity purpose the appropriate plant community at a site is that which originally grew there. Local species should be strongly encouraged for amenity plantings also. If no native vegetation remains then plantings of non-indigenous species for shade, windbreaks, aesthetic values, or other purposes may be appropriate. However, there should be a clear distinction made between these amenity plantings and those with conservation value, particularly in the allocation of conservation funding. Revegetation works should always seek to establish plants grown from locally collected seed which are appropriate to the soil type and aspect of the revegetation site.

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## Signing of Significant Sites

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ROADSIDE SITES OF CONSERVATION SIGNIFICANCE SHOULD BE SIGNED WITH EDUCATIONAL INFORMATION (SEE APPENDIX D)

Public understanding is a very important component of long-term conservation efforts. Significant roadside vegetation should be signed in such a way as to provide public information about its significance. Often native vegetation such as grassland is not recognised, or shrublands dominated by species such as Nitre bush (*Nitraria billardierei*), Native boxthorn (*Lycium australe*), Lignum (*Muehlenbeckia florulenta*) and Spiny Lawrencia (*Lawrencia squamata*) are treated as weedy. A further extension of public information signage is the creation of a trail linking sites which demonstrate the range of native plant communities present in the district.



## Contact details

- Native Vegetation Council & Native Vegetation Council Secretariat  
Ph: 8303 9741  
Fax: 8303 9780  
Email: [nvc@sa.gov.au](mailto:nvc@sa.gov.au),  
Web: [www.environment.sa.gov.au/nativevegetation](http://www.environment.sa.gov.au/nativevegetation)
- Native Vegetation and Biodiversity Management Unit  
GPO Box 2834  
ADELAIDE SA 5001  
Ph: 8303 9777  
Fax: 8303 9780

# APPENDIX A

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Maintenance Envelope Definition

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## Appendix A: Maintenance Envelope Definition

### Clearance envelopes – operations able to be undertaken without Native Vegetation Council approval

Any clearance proposed here is not meant to imply or establish safety standards.

The main clearance envelope allows for the passage of legal height vehicles (4.6 m) across the full width of the traffic lanes. To allow for re growth between pruning and sagging of branches caused by wet or windy conditions, a minimum clearance height of 5.0 m will be maintained.

### Rural or non-built up areas

It is desirable to maintain a vertical clearance of 5.0m between the guideposts along a road.

The district council may seek to maintain a minimum clearance envelope that is 5.0 m high, extending the width of the road (usually taken as the edge of the traffic lane) or 7.0 m, whichever is the greater, as shown in the following Figure 1.

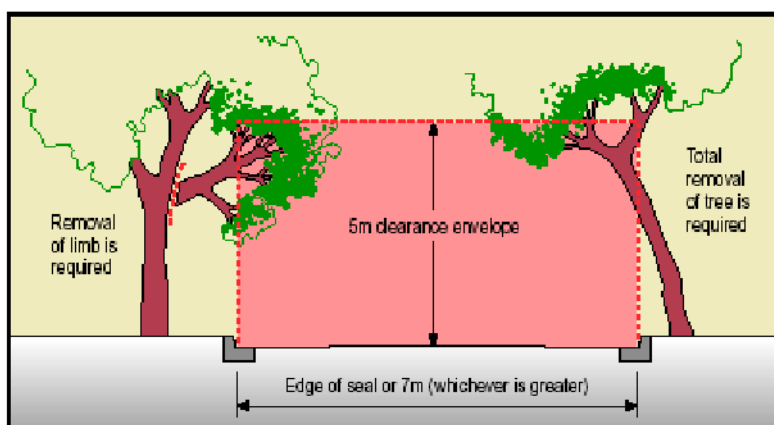


Figure 1: Rural Clearance Envelope (Minimum)

This clearance envelope may vary depending on the highway characteristics and location. Refer relevant maintenance specification and schedules.

### Urban or built up areas

It is desirable to maintain a vertical clearance of 5.0m from kerb face to kerb face.

The district council may seek to maintain a minimum clearance envelope that is 5.0 m high, extending over the width of the travel lanes that are available for the passage of all legal road vehicles as shown in the following figure.

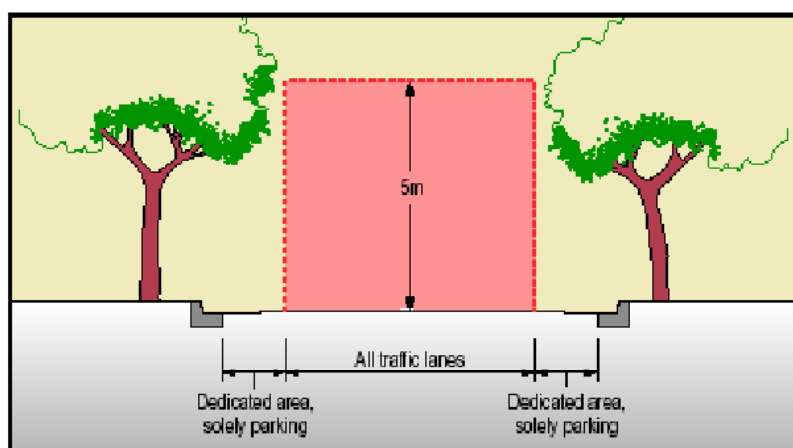


Figure 2: Urban Clearance Envelope (Minimum)

The clearance envelope is further modified on highway medians. A clear height of 2.1 m will be maintained at the kerb and extend 1.0m from the carriageway or to the nearest edge of the trunk, whichever is lesser (Figure 3).

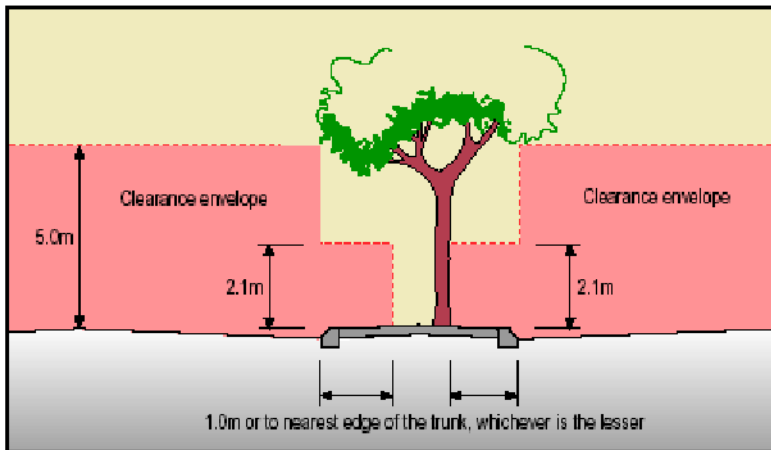


Figure 3. Change to clearance envelope at medians

A secondary clearance envelope extending upto 500 mm around roadside furniture may also be sought (Figure 4). Additional vegetation control may be undertaken on the approach side of signs and delineation devices to ensure that the sign is clearly visible from a distance equivalent to the stopping sight distance for the speed environment of the road (Figure 5).

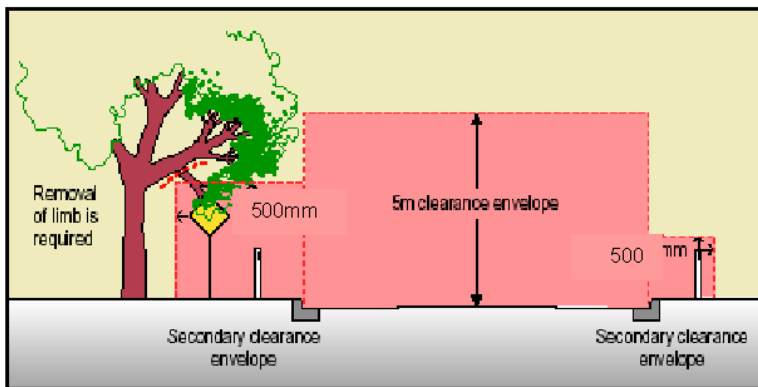


Figure 4: Secondary Clearance Envelope

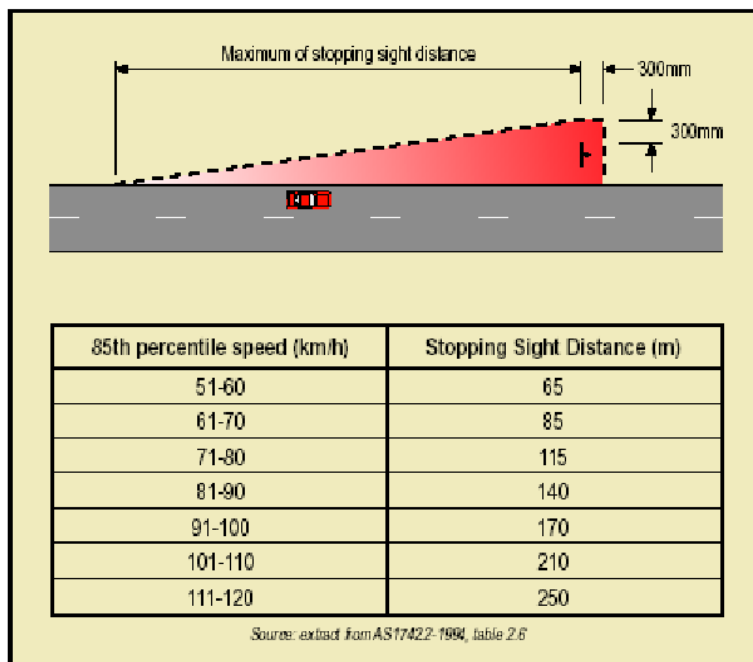


Figure 5: Secondary Clearance Envelope Along Road



# APPENDIX B

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Tree Policy

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Refer attached document.



# APPENDIX C

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## Roadside Vegetation Survey Maps

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**Refer to attached report:**

**Roadside Native Vegetation Drive-By Survey 63, January 2004**

Prepared by Peter D Clark (Casuarina Land Management Consultants)

**Documents attached separately.**





# APPENDIX D

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Roadside Significant Sites

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## APPENDIX D

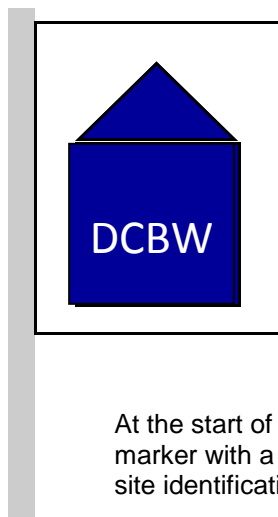
### Roadside Significant Sites

All over South Australia, councils and TransportSA are identifying areas of roadside that are of environmental or cultural significance. These 'Roadside Significant Sites' include: areas of remnant native vegetation; significant trees; threatened plant species; habitat for rare animal species; European heritage sites such as bridges, monuments and stone walls; Aboriginal heritage sites; and geological features. At this stage Council is marking only sites with remnant native vegetation, but sites of cultural significance could be marked in the future.

The Sites are marked with discreet signage to assist road authorities, utility contractors and landholders in the recognition and protection of the sites. Roadside Significant Site Markers are used primarily to identify sites, which may be difficult to recognise in the field, such as native vegetation. Roadside markers do not alter the responsibility for managing and protecting roadsides.

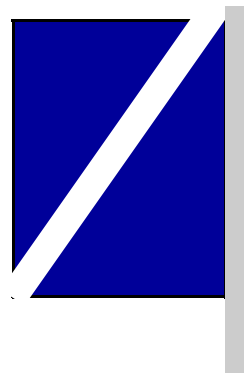
At the start of each site is a sign with a blue shield with a number identifying the Roadside Significant Site and a code for the authority managing the road ('DCBW' District Council of Barunga West; 'TSA' TransportSA etc). At the end of each site is a blue sign with a diagonal white bar across it. The marker specifications and details of how to mark sites are in the Resources section of this manual.

50 sites have been marked thus far. There is likely to be a further 100 sites with high quality remnant vegetation that should be marked in the future.



At the start of each site is a marker with a blue shield and a site identification number.

The end of the site is marked with a blue sign with a diagonal white bar across it.



The key principle for protecting remnant native vegetation on roadsides is **minimum disturbance**. Roadwork activities should be modified to avoid disturbance to the sites. The following actions are also important.

## Weed Control

- Avoid boom spraying roadside vegetation.
- Avoid spreading weeds by cleaning down vehicles before moving into a site
- Slash introduced grasses and weeds in winter or early spring - before introduced seed is set and before native grasses have begun to flower.
- Handpull weeds and use 'cut and swab' techniques in high quality native vegetation.

## Disturbance and removing native vegetation

- Keep vehicles on formed roads or existing tracks and do not park on native vegetation.
- Do not plough, burn or graze roadside vegetation.
- Remove only the minimum branches necessary for fenceline clearance.
- Retain dead trees and logs for habitat for animals.

## Revegetation

- Avoid planting trees and shrubs in native grassland - they tend to shade out the grasses.

## Significant Site Database

Council has a Significant Site Database which supports the marker scheme and catalogues the information about the sites. The database includes details of location, site description and management recommendations required for protection of the sites.

The database has been designed to be as simple to use as possible. When more sites are marked in the future, this information will need to be added into the database and also into the Council Road Inventory and the Significant Site Reports.

The **Significant Site Database** is a Microsoft Access database. It contains a main table called 'Significant Site Information' that stores site details such as location, description, main site impacts. Data can be entered efficiently using the table which allows cutting and pasting of earlier data to speed up data entry.

This same data is easily viewed through the Significant Site Information form. The form is structured for easy reading and editing of individual site details. There are also Significant Site Reports with all the information for a site given on an individual page. Scroll through these reports and print out the current page to create a hard copy of a Site Report.

The data is also being integrated into Council's **Road Inventory** which describes the hundred, road classification, and presence of any significant sites, or special road uses for each road.

## Significant Site reports

The Significant Site Reports (printed from the Significant Site Database) describe the location, the feature, the threats to the site and protect actions required for each site. The reports will be modified when any management action occurs at a site.



# APPENDIX E

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## Clearance of Native Vegetation associated with the Control of Plant and Animal Pests

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Refer to attached document.



# APPENDIX F

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Framework for the Clearance of Native Vegetation under Regulation 5(1)(lb) - Public Safety for Rail Crossing, Road Intersections and Roadsides

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Refer to attached document.



