



Alexandrina Council Roadside Vegetation Management Plan

2016-2021

THRIVE IN CLEAN GREEN FUTURES



Phone: (08) 8555 7000

Email: alex@alexandrina.sa.gov.au

Web: www.alexandrina.sa.gov.au



Contents

Message from the Mayor and Chief Executive	5	4. Management Actions	63
Development and Endorsement of the RVMP	6	5. References	67
1. Background	7	6. Abbreviations and Definitions	69
1.1 About this Plan	7	Appendix 1 – Importance of Roadside Vegetation and Threats	74
1.2 What is Roadside Vegetation?.....	7	Appendix 2 – Relevant Actions with Alexandrina Council’s EAP 2014-18.....	76
1.3 Council’s responsibility for managing Roadside Vegetation....	8	Appendix 3 – Roadside Vegetation Survey Maps ..	77
1.4 Legislative Context.....	8	Appendix 4 – Plant Species of Conservation Significance Recorded During Roadside Vegetation Surveys	84
1.4.1 Native Vegetation Act 1991	8	Appendix 5 – Alexandrina Council’s Road Hierarchy Classification	87
1.4.2 Other legislation relevant to the protection and management of roadside vegetation	9	Appendix 6 – NAMO Principles	89
1.5 Council Policy Context.....	11	Appendix 7 – Council Approval Requirements	90
1.5.1 Community Strategic Plan 2014-2023 (CSP)	11	Appendix 8 – Declared Weed Species	92
1.5.2 Environmental Action Plan 2014-2018 (EAP)	11	Appendix 9 – Clearance Envelopes	94
1.5.3 Tree Management Policy and Procedure	11		
1.5.4 Other Council Policies and Procedures	11		
2. Alexandrina Council’s Roadside Vegetation.....	13		
2.1 About our District	13		
2.2 Roadside Vegetation Surveys	15		
2.2.1 Survey Results	15		
3. Management Issues.....	19		
3.1 New Roadworks	21		
3.2 Roadside Vegetation Maintenance	25		
3.3 Public Safety	28		
3.4 Installation and Maintenance of Services.....	30		
3.5 Pest Plant and Animal Control	31		
3.6 Plant Diseases and Infestations.....	35		
3.7 Clearance for Fencelines.....	37		
3.8 Clearance for Access to Adjoining Land	40		
3.9 Bushfire Protection	41		
3.10 Grazing	44		
3.11 Stock Movement on Roadsides	46		
3.13 Cultivation and Cropping.....	49		
3.14 Removal of Plant Material	51		
3.15 Overdimensional Vehicles	54		
3.16 Maintaining Biodiversity on Roadsides via Ecological Prescribed Burning.....	55		
3.17 Protection of Native Vegetation of High Conservation Significance	57		
3.18 Restoration of Roadside Vegetation.....	59		

Acknowledgment of Country

The Alexandrina Council region intersects the traditional lands of the Ngarrindjeri and Kaurna Traditional Owner groups. Alexandrina Council acknowledges and respects their Traditional Ownership, and their rights, interests and obligations to speak and care for their traditional lands and waters in accordance with their laws, customs, beliefs and traditions.

In accordance with the 2002 Kungun Ngarrindjeri Yunnan Agreement signed by Alexandrina Council and the Ngarrindjeri Nation, we are committed to working together to uphold Ngarrindjeri rights and advance Ngarrindjeri interests when decisions are being made about their Ruwe (Country).

In implementing this plan, Alexandrina Council will have regard to the Ngarrindjeri Vision for Country as expressed in the 2007 Ngarrindjeri Nation Yarluwar-Ruwe (Sea Country) Plan:

Our Lands, Our Waters, Our People, All Living Things are connected. We implore people to respect our Ruwe (Country) as it was created in the Kaldowinyeri (the Creation). We long for sparkling, clean waters, healthy land and people and all living things. We long for the Yarluwar-Ruwe (Sea Country) of our ancestors. Our vision is all people Caring, Sharing, Knowing and Respecting the lands, waters, and all living things.

**Major Sumner,
Watersong - Just Add
Water, Goolwa Wharf
2012**

Photo: Alice Bell



Message from the Mayor and Chief Executive

The Alexandrina Council Roadside Vegetation Management Plan 2015-2020 outlines how Council will manage and protect native vegetation on our roadsides whilst ensuring that our road network adequately provides for the safe movement of traffic. This is no easy task. Our district has approximately 747km of sealed roads, 760km of unsealed roads and an additional 1000km of undeveloped road reserves and Council is responsible for managing the roadside vegetation along all of these roads.

Our community rightly places a high priority on Council protecting and enhancing biodiversity and to this end, we are committed to ensuring improvements in the extent, condition and connectivity of native vegetation within our region. Our community also seeks regular improvements to our road network to support the needs of a growing population and economy. Balancing these sometimes conflicting priorities requires careful planning and the setting of clear rules for how we will undertake and manage activities affecting native vegetation on our roadsides.

To help Council staff comply with legislative requirements and to complement our strategic objectives in the areas of enhanced biodiversity and improved transport networks, this Plan:

- identifies areas of high conservation value vegetation on our roadsides
- provides guidelines for undertaking activities on roadsides so as to minimise impacts on native vegetation
- details the consultation and approval processes that must be followed for roadside activities involving the clearance of native vegetation, and
- identifies and prioritises actions to improve our management of roadside vegetation.

We give thanks to all those who contributed to development of this Plan and look forward to working together to help our community thrive in a clean, green future.



Keith Parkes, Mayor



Peter Dinning, Chief Executive

Mayor Keith Parkes (left)
and Chief Executive
Peter Dinning (right)



Development and Endorsement of the RVMP

This Roadside Vegetation Management Plan 2016-2021 (RVMP) was developed by Council's Environmental Strategy Officer, Shen Mann, and Dr Clare Moyle of Rural Solutions SA on behalf of Alexandrina Council. Alexandrina Council's Elected Members, management and staff have all had input into development of the RVMP. The local community, Native Vegetation Council, NRM staff and other stakeholders have also been consulted during development of the RVMP.

This RVMP replaces the previous Alexandrina Council Roadside Vegetation Management Plan 2010-2015 and was formally approved by the Native Vegetation Council (NVC) following Alexandrina Council's endorsement on 19 September 2016. This RVMP will be reviewed by Alexandrina Council every five years and if amended in any significant way, resubmitted to the NVC for re-endorsement.

Photo.
Rural Access Track



1. Background

1.1 About this Plan

The purpose of this RVMP is to provide Alexandrina Council with a consistent and integrated approach to managing roadside vegetation. It fulfils a legal requirement under the Native Vegetation Act 1991, which allows for clearance of native vegetation by Alexandrina Council, or someone acting on behalf of Council, where the clearance complies with a roadside management plan that has been approved by the Native Vegetation Council. This RVMP:

- identifies areas of high conservation value vegetation on our roadsides
- provides guidelines for undertaking potentially damaging activities on our roadsides so as to minimise impacts on native vegetation
- details the consultation and approval processes that must be followed for roadside activities involving the clearance of native vegetation, and
- identifies and prioritises actions to improve our management of roadside vegetation.

The primary objective of this RVMP is to assist Alexandrina Council meet legal requirements for the provision and maintenance of a safe road network and for the protection of native roadside vegetation. Other objectives of this RVMP are:

- to avoid or minimise the loss of native vegetation on roadsides and to encourage an approach of “no net loss” associated with Council activities
- maintain and enhance the species diversity, genetic diversity, vegetation associations, habitat types and corridor value of existing roadside vegetation
- improve awareness of roadside vegetation management issues for Council’s Elected Members, management, staff and contractors, the community and other relevant stakeholders and authorities, and
- entrench good roadside management practices in order to generate long-term savings and efficiencies in Council’s road maintenance budgets.

In pursuit of these objectives, Council will have regard to the NAMO Principles when planning activities which might involve the clearance of native vegetation on roadsides, see **Appendix 6**.

Council’s Environmental Strategy Officer will have primary responsibility for administering implementation of the RVMP, ensuring the RVMP is kept current and promoting its contents to council staff and the community. All relevant Council managers, staff and contractors will be trained to ensure they can appropriately interpret the RVMP and therefore implement the roadwork practices required to minimise damaging impacts to roadside vegetation.

1.2 What is Roadside Vegetation?

Roadside vegetation is any vegetation growing on a road reserve, and includes vegetation on a developed roadside or undeveloped road reserve.

The “roadside” is the strip of land between the road formation and the boundary of the road reserve, which is usually also the boundary of the adjacent property, see **Figure 1** on next page. Roadside vegetation can range from native vegetation of high conservation value to areas completely devoid of native vegetation and instead dominated by introduced species.

Native roadside vegetation often has significant conservation value. Much of the native vegetation within the State has been cleared or highly disturbed and in some regions (including parts of Alexandrina Council) roadsides support the last remaining examples of original vegetation. Because of its linear nature, native roadside vegetation is also susceptible to gradual degradation through a range of activities.

See **Appendix 1** for more information on the functional, conservation and social benefits of, and threats to, native roadside vegetation.



Figure 1.
Road reserve showing road formation and roadside. See also diagram on page 69.

1.3 Council’s responsibility for managing Roadside Vegetation

In South Australia, the Commissioner of Highways (with assistance from DPTI) controls and maintains the trafficable section of major arterial roads pursuant to the Highways Act 1926. Pursuant to the Local Government Act 1991 however, local councils are responsible for the remainder of the road reserve, including the roadside vegetation, as well as being entirely responsible for all other roads within their district.

As at the date of this Plan, DPTI controls and maintains 221km of major arterial roads within the Alexandrina Council district whilst Council maintains 526km of sealed roads and 760km of unsealed roads. Council is also responsible for managing an additional 1000km of undeveloped road reserves.

Whilst Council has primary responsibility for managing roadside vegetation within our District, as described in **Section 1.4** below, there are many other pieces of legislation, which also regulate activities on roadsides.

One of these is the Electricity Act 1996 which requires SA Power Networks to undertake tree trimming around powerlines. Alexandrina Council is aware of community concern about the nature and extent of tree trimming undertaken by SA Power Networks within our Council area. See **Section 3.4** of this RVMP for further details about the clearance of vegetation along roadsides for the installation and maintenance of utilities including powerlines, water supplies, gas and telecommunications.

1.4 Legislative Context

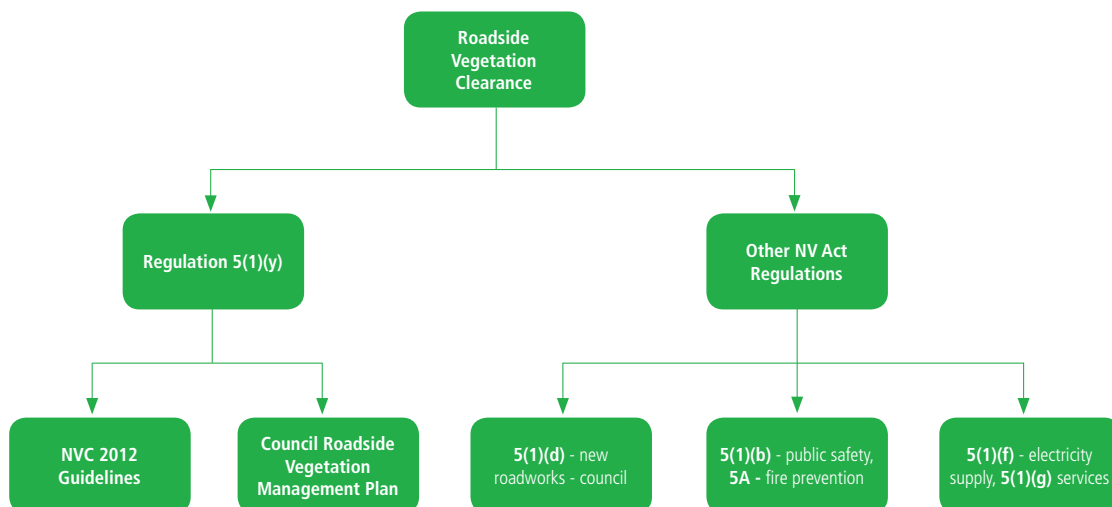
Alexandrina Council is required to adhere to a wide range of legislation applicable to the management of roadside vegetation.

1.4.1 Native Vegetation Act 1991

The *Native Vegetation Act 1991* is the primary piece of legislation governing the protection and clearance of native vegetation in South Australia. Any clearance of native vegetation on roadsides requires the permission of the Native Vegetation Council (NVC) unless a specific exemption applies under the *Native Vegetation Regulations 2003*.

Figure 2.

Roadside Vegetation Clearance mechanisms under the Native Vegetation Act 1991



Regulation 5(1)(y) allows for clearance of roadside vegetation by a local council, or someone acting on behalf of the local council, where the clearance complies with either:

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

This RVMP fulfils the requirements of the first dot point above.

Some roadside activities such as clearance for new road works, fire prevention, public safety and service provision are dealt with under other Regulations, see

Figure 2 above. In many instances, these regulations require the clearance to be offset through either on-ground native vegetation restoration or revegetation works, or by payment into a fund that supports these types of works elsewhere in the region.

1.4.2 Other legislation relevant to the protection and management of roadside vegetation

Local Government Act 1999: Requires Council 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. Gives Council the power to regulate activities on roadsides including the planting, removal of, or interference with roadside vegetation.

National Parks and Wildlife Act 1972: Prohibits the removal of native plant species and material from public land including roadsides without a permit issued by DEWNR.

Environment Protection and Biodiversity Conservation Act 1999 (Cth): Protects matters of national environmental significance, including nationally listed species of threatened plants, animals and ecological communities. Any action that will have or is likely to have a significant impact on these matters of national environmental significance requires assessment and Commonwealth approval. A number of EPBC listed species and ecological communities occur within the Alexandrina Council district.

Natural Resources Management Act 2004: Provides, amongst other things, for the creation of local NRM Boards and for the control of declared pest plants and animals.

The removal of vegetation growing in a watercourse or lake or growing on the floodplain of a watercourse or may require a Water Affecting Permit pursuant to **Section 127(5)(g)**.

Other legislation which applies to the management of Roadside Vegetation includes, but is not limited to:

- *Electricity Act 1996*
- *Development Act 1993*
- *Fire and Emergency Services Act 2005*
- *Road Traffic Act 1961*
- *Aboriginal Heritage Act 1988.*

Photo.

Cox Scrub Conservation Park



1.5 Council Policy Context

Alexandrina Council and our community place a high priority on the protection of biodiversity and this RVMP has been written to align with, and is supported by, a number of other Council plans, policies and procedures.

1.5.1 Community Strategic Plan 2014-2023 (CSP)

The CSP is Alexandrina Council's primary strategic planning document, documenting the community's long-term aspirations, interests and priorities.

"Thrive in Clean Green Futures" is one of four aspirations comprising Council's vision of Alexandrina Connecting Communities, and "Enhanced Biodiversity" is one of three outcomes under this aspiration. Other outcomes in the CSP relevant to roadside vegetation management are Resilient Economy, Productive Community Assets and Liveability of Townships and Rural Areas.

The CSP also includes the following community statements:

- We aspire to leave more than we inherit, or in better condition, to future generations – socially, environmentally and economically.
- We expect well-planned and well-managed growth.
- We are proud to be known nationally and internationally for our unique environment our enviable heritage and lifestyle.

1.5.2 Environmental Action Plan 2014-2018 (EAP)

The EAP describes in detail what Council will do over the four year period from 2014-2018 to deliver on the community's CSP aspiration to "Thrive in Clean Green Futures".

Key long-term objectives of the EAP relevant to the management of roadside vegetation include:

- The majority of remnant vegetation on Council land is being actively managed for conservation.
- The extent, condition and connectivity of native vegetation within our region is improving.
- Our natural environment is valued by the community and we work together to improve our knowledge and to preserve, protect and enhance the regions biodiversity.

Guiding principles within the EAP assist Council's decision-making with respect to native vegetation management, with protection of remnant vegetation being given the highest priority. The guiding principles state as follows with respect to vegetation clearance:

"Council will seek to avoid any impacts on biodiversity, and if that is not possible, to minimise and offset any damage using onsite rehabilitation measures. Offsite offsets will be treated as an option of last resort".

See **Appendix 2** for a list of EAP actions specifically applicable to Council's management of roadside vegetation.

1.5.3 Tree Management Policy and Procedure

Council's Tree Management Policy establishes a guiding framework for the planting, maintenance, conservation and removal of trees on Council land, including parks, reserves, urban streets and rural roads. Council's Tree Management Procedure provides detailed guidance to Council staff about how tree-related activities and requests should be managed.

Of particular relevance to the management of roadside vegetation, the Tree Management Policy and Procedure prescribe forms and processes for community-initiated tree planting and tree removal requests. The Procedure also details how Council will respond to incidents of vegetation damage and vandalism on Council land.

1.5.4 Other Council Policies and Procedures

Council has a number of other Policies and Procedures relevant to roadside vegetation management, some of which are identified in relevant places throughout this RVMP. See **Appendix 7** for a list of relevant Council approval processes.



2. Alexandrina Council's Roadside Vegetation

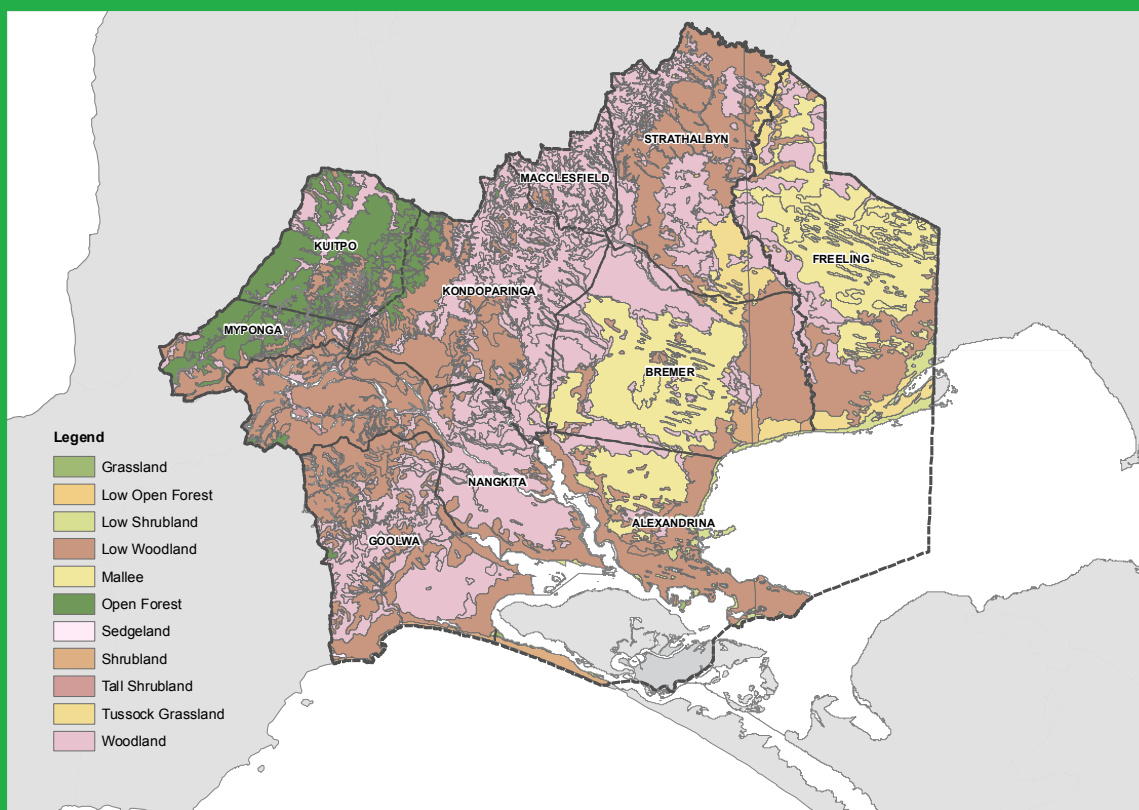


Figure 3.
Pre-European Vegetation of Alexandrina Council

Source: DEWNR Digital Data. Data not available for Hindmarsh Island.

2.1 About our District

Alexandrina Council, located on the Fleurieu Peninsula, covers an area of over 1,800 square kilometres and in 2015 was home to more than 25,000 people.

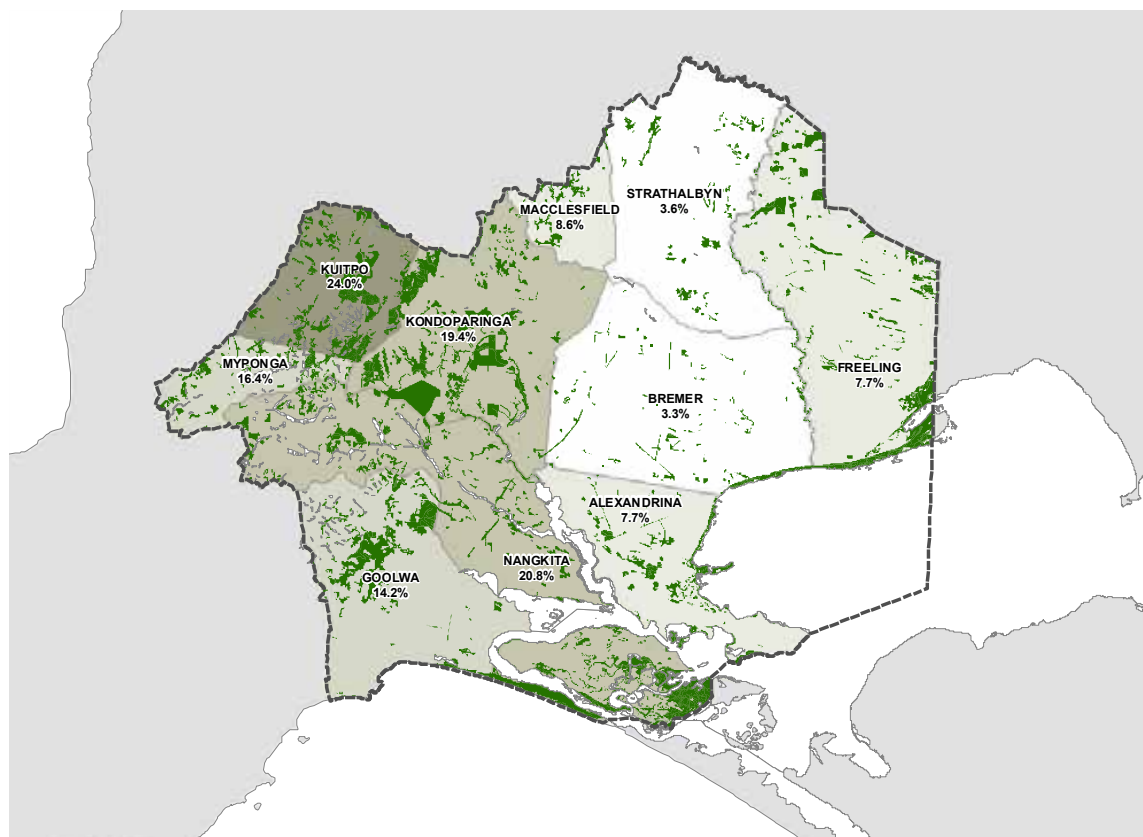
The landscape of the region is highly diverse. Our southern boundary consists of 25 km of coastline extending from the Murray Mouth to Chiton Rocks west of Port Elliot. Our eastern boundary begins at the Murray Mouth and travels through Lake Alexandrina, taking in the Goolwa Channel, Hindmarsh Island and Currency Creek, all of which form part of the Coorong and Lower Lakes Ramsar Wetland. Extending inland from the coast are the Angas Plains (encompassing Strathalbyn), which then rise up to the foothills of the Eastern Mount Lofty Ranges. Included in this area are the catchments of the Bremer, Angas and Finniss Rivers along with Tookayerta Creek. These catchments all drain from the Mount Lofty Ranges towards and into Lake Alexandrina.

This landscape diversity is reflected in the pre-European vegetation communities which included shrubby dunes and low grassy woodlands on the coastal strip, reedbeds and grasslands adjacent to the freshwater Lower Lakes and creeks, mallee communities on the eastern plains, widespread Eucalypt woodland communities within the foothills, and denser Stringybark forests on the higher ridges to the north of Ashbourne and Mount Compass (see **Figure 3**).

Since European settlement, there has been broad-scale clearance and disturbance of native vegetation within the Council area for agriculture as well as urban and coastal development. It is estimated that less than 12% (approximately 19,085 Ha) of the original vegetation remains, varying from 3.3% in the Hundred of Bremer to 23.95% in the Hundred of Kuitpo (see **Figure 4**).

Figure 4: Alexandrina Council – Extent of Remnant Vegetation per Hundred.

Source: DEWNR Digital Data.



This reflects the preferential clearance of vegetation in areas with accessible topography and productive agricultural soils. As a result the western portion of the Council district remains more vegetated, while mallee and woodland areas are now particularly under represented in the region.

Remaining remnants of native vegetation are contained in fragmented patches on both private and public land, and along roadsides. Four ecological communities listed as threatened at a national level are known to be found within the Alexandrina Council area: Swamps of the Fleurieu Peninsula, Peppermint Box Grassy Woodland of South Australia, Iron-grass Natural Temperate Grassland of South Australia and Subtropical and Temperate Coastal Saltmarsh.

Many nationally threatened plant species are also known to occur within the region including *Acacia pinguifolia* (Fatleaved wattle), *Allocasuarina robusta* (Mount Compass Oakbush), *Eucalyptus paludicola* (Mount Compass Swamp Gum), *Olearia pannosa* (Silver Daisy-bush), *Acacia rhotinocarpa* (Resin Wattle) and *Caladenia colorata* (Coloured Spider Orchid). See **Appendix 4** for a list of plant species of conservation significance (national, state, regional) recorded on roadsides within the Alexandrina Council district.

The range of original pre-European vegetation types is reasonably well represented within the road reserve system of the Council district however, the quality varies from degraded vegetation with little conservation value (190kms of undeveloped road reserve and 1,722kms of developed roads) through to vegetation associations of high biodiversity value (91km of undeveloped road reserve and 417.5km of developed roadsides) based on the vegetation categories described in **Table 1** below.

2.2 Roadside Vegetation Surveys

Over the past 15 years, Alexandrina Council has surveyed our roadsides (developed roads) and a selection of our undeveloped road reserves to provide information about the location, composition and ecological value of roadside vegetation across the district, and about the extent of weed invasion and other disturbances.

The surveys have provided Council with an inventory of the condition and quality of our roadside vegetation assets, and have been (and will continue to be) used to assist Council in the development of strategies for the protection and management of roadside vegetation.

The outputs of the roadside vegetation surveys are:

- Maps displaying information collected during the surveys. These are included in **Appendix 3**.
- Detailed spreadsheets containing all of the data collected during the surveys. This data is accessible via Council’s GIS system.
- Reports summarising the results of each survey - Hyde (1997, 1998 and 1999), Pickett and Mallen (2003) and EBS (2013).

These surveys have not been incorporated into DEWNR’s statewide roadside vegetation mapping layer.

The following maps are included in **Appendix 3**:

- Overall Ecological Significance Developed Roads
- Overall Ecological Significance Undeveloped Roads
- Threatened Vegetation Associations (Developed and Undeveloped Roads)
- Roadside Marker System (current and potential sites)
- Potential Management Sites – Undeveloped Roads
- Phytophthora Infestation and Risk Areas.

2.2.1 Survey Results

Developed Roads

Developed roads within the council area, excluding those in urban areas with continual house frontage, were surveyed by Michael Hyde between 1997 and 1999. In total 2,537km of roadsides (1,268.5km of road) were surveyed using a drive by methodology similar to the rapid roadside vegetation survey methodology currently adopted by DEWNR (Stokes et al. 1998).

The Hyde surveys found that the majority of the roadside vegetation along developed roads was in poor to very poor condition (67%) with only a small amount in either excellent (3%, 127km) or good (5%, 183km) condition. More than 50 plant species of conservation significance (at the time of the survey) were recorded during the Hyde surveys. See list in **Appendix 4** for current conservation ratings.

Table 1. Description of the categories of overall ecological significance, as well as the number of kms of each category, for developed roads.

Category	Description	Hyde data Length (kms)	DEWNR data Length (km)	Total Length (km)
A	Should not be disturbed, contains a high priority vegetation association in excellent or good condition.	36.8	4.4	41.2
B	Should not be disturbed, contains a high priority vegetation association in moderate condition or a lower priority association in excellent condition.	347.9	28.4	376.3
C	Disturbance should be avoided wherever possible, contains a high priority vegetation association in poor condition or a lower priority association in moderate condition.	349.5	70.8	420.3
D	May be disturbed, subject to further assessment and planning, contains limited native vegetation in poor condition.	390.8	133.7	524.5
E	May be disturbed, very little or no native vegetation present.	956	242	1198
n/a	No vegetation data were recorded for 22 segments (1 segment of each of 22 Road Orders) that either traversed water, were clearly developed, or were sections of road reserves only partially surveyed on-ground.	0	21	21
TOTAL		2081	500	2581

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 RVMP.

Since the Hyde surveys, a number of the main arterial roads managed by DPTI, covering 500km of roadside (225km), have been re-surveyed by Department of Environment, Water and Natural Resources (DEWNR).

For the purposes of mapping and data analysis in this RVMP, the Hyde data has been omitted from the relevant maps in **Appendix 3** and from the overall ecological significance length calculations in **Table 1** for those segments of roadside vegetation that have since been surveyed by DEWNR. For these segments of road, the more recent DEWNR data has been used. This equates to 2,081km of Hyde data and 500km of DEWNR data.

Data from the Hyde and DEWNR surveys has been assessed to determine the overall ecological significance of the vegetation in each road segment surveyed. The overall ecological significance rating is based on a combination of two attributes: the conservation priority rating for the vegetation association, and the overview condition rating for the segment. There are five overall ecological significance categories ranging from Category A with high priority vegetation association in excellent or good condition to Category E with little or no native vegetation present (see **Table 1**). Around 417.5km of roadside vegetation was considered as being of high overall ecological value (i.e. Category A and B).

Using the dominant overstorey species recorded during the surveys, a broad vegetation association was assigned to each segment of roadside vegetation. During the Hyde and DEWNR surveys 151 distinct broad vegetation associations were recorded. Utilising these broad vegetation associations in conjunction with the dominant understorey type(s) recorded, the vegetation associations were assessed to determine if they can be considered as potentially threatened.

The Provisional List of Threatened Ecosystems of South Australia and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) List of Threatened Ecological Communities were used to identify potential State and/or Nationally Threatened Vegetation Associations.

A total of two nationally threatened vegetation associations – Iron-grass natural temperate grassland of South Australia and Peppermint box (*Eucalyptus odorata*) grassy woodland of South Australia – were identified as possibly occurring along approximately 126km of developed roadsides within the Council area.

Eight vegetation associations that are potentially threatened in South Australia were identified, along approximately 307km of roadside (note this includes the 126km of potential nationally threatened roadside vegetation as vegetation associations identified as nationally threatened were also identified as state threatened). Maps showing the extent of these potentially threatened vegetation associations are included in **Appendix 3**.

Undeveloped Roads

Marcus Pickett and Nigel Mallen undertook vegetation surveys of undeveloped road reserves within the Council area in 2000-2001 and 2003-2004. Undeveloped roads are roads/tracks classed as ‘unformed’ in the road network data and road reserves without a road/track.

In 2000-2001, 989km of road reserves were surveyed using aerial photography (1:20,000 colour aerial photographs acquired in March 2000). The aerial photography survey divided each road reserve into segments and assigned a category based on their recommendation for on-ground survey. This included ‘yes’, ‘partial’ or ‘no’ survey recommended as well as ‘not assessed’ (see **Table 2**).

Approximately 571km of road reserve were selected for full on-ground survey (category = yes) based on whether the aerial photography indicated they had extensive or significant areas of trees, shrubs, tussocks, sedges and/or reeds. An additional 113km were recommended for partial survey. The segments recommended as ‘no survey’, although not surveyed on-ground, can be generally considered to be largely devoid of any native vegetation.

Table 2. Summary of on-ground survey recommendations and the number of kilometres of each that has been surveyed or not surveyed on-ground, for undeveloped road reserves.

Survey Recommendation	Surveyed	Not Surveyed	Total
Not Assessed (A)	1.0	8.2	9.2
No (N)	21.4	273.5	294.9
Partial (P)	51.6	61.6	113.2
Yes (Y)	333.5	238.1	571.6
TOTAL	407.5	581.4	988.9

On-ground survey data was collected on foot using a modified version of the DEWNR rapid assessment drive-by method (Stokes et al. 1998).

A total of 407km of undeveloped road reserve were surveyed on-ground during 2000-2004. Of this 333.5km is categorised as 'yes', 52km is categorised as 'partial' and 21.5km is categorised as 'no' (but were surveyed opportunistically) for on-ground survey. A result of 'no vegetation' was recorded for 12km of the on-ground surveyed road reserves and these segments typically traversed water or were clearly developed roads.

A total of 238 km of road reserves selected for full on-ground survey and 61.5km selected for partial on-ground survey remains unsurveyed (refer to 'survey pending' category on map in **Appendix 3**). Surveying this remaining 300km of undeveloped road reserves is identified as a management action in **Section 4** below.

For undeveloped road reserves, roadside vegetation survey data has been assessed to determine the overall ecological significance value of the vegetation in each road segment surveyed (**Table 3**). Around 91km of roadside vegetation was considered as being of high overall ecological value (i.e. Category A and B). The understorey condition of road reserves surveyed on-ground was poor (70% of total length surveyed). Relatively few on-ground segments (7% of total length) had understorey in good–excellent condition (Pickett and Mallen 2003).

A total of 538 plant species, including 380 native and 158 introduced, were recorded during the Pickett and Mallen surveys. A number of these species mainly grasses, herbs and sedges were of conservation significance at the time of the survey. See list in **Appendix 4** for current conservation ratings.

Ninety-six plant associations were recognised, with 'Exotic grassland (few if any native species present)' being the most extensive vegetation association recorded (86 km, 21% of total length). Eucalyptus fasciculosa and/or E. incrassata dominated associations were also extensive, occurring on around one quarter (27%) of on-ground segments (110 km) and these two species also occurred as co-dominants in association with other species.

The vegetation associations recorded along undeveloped roads were assessed to determine if they could be considered as potential State or Nationally threatened vegetation associations (using the same methodology described above for developed roads). A total of two nationally threatened vegetation associations – Iron-grass natural temperate grassland of South Australia (approximately 2.7km) and Peppermint box (Eucalyptus odorata) grassy woodland of South Australia (approximately 0.4km) – were identified as possibly occurring along undeveloped roadsides within the Council area. Nine vegetation associations that are potentially threatened in South Australia were identified, occurring along approximately 38.9kms of undeveloped road reserve.

Table 3. Description of the categories of overall ecological significance, as well as the number of kms of each category.

Category	Description	Length (km)	% of Length
A	Should not be disturbed, contains a high priority vegetation association in excellent or good condition	12.6	3
B	Should not be disturbed, contains a high priority vegetation association in moderate condition or a lower priority association in excellent condition	78.5	19
C	Disturbance should be avoided wherever possible, contains a high priority vegetation association in poor condition or a lower priority association in moderate condition	116.6	29
D	May be disturbed, subject to further assessment and planning, contains limited native vegetation in poor condition	48.3	12
E	May be disturbed, very little or no native vegetation present.	139.5	34
n/a	No vegetation data were recorded for 22 segments that either traversed water, were clearly developed, or were sections of road reserves only partially surveyed on-ground.	12.00	3
TOTAL		407.5	100

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.

Maps showing the extent of these potentially threatened vegetation associations are included in **Appendix 3**.

Roadside Marker System (RMS) Sites

Based on the results of the Hyde surveys, Alexandrina Council has installed a system of roadside marker sites and is committed to maintaining these sites as well as establishing new sites where appropriate (see map in **Appendix 3** that identifies the locations of existing RMS sites and potential future RMS sites i.e. Category A and B segments on developed roads not yet included within the RMS).

An audit of the roadside marker sites was undertaken in 2013 by EBS Ecology. A total of 368.5km of RMS were audited covering 386 sites. As a result of the survey, all RMS sites were ranked based on four categories (condition, conservation significance, weed score and resilience) to enable prioritisation of on-ground works. The survey also made recommendations for sites to remove, due to degradation since they were developed, and additional sites to add to the RMS register.

As at the date of this RVMP, Council's Roadside Marker System currently contains 351 sites totalling 350.6km of developed roadsides.

Thirteen species of national or state conservation significance were recorded during the audit (see **Appendix 4** for a full list). The most common threatened species recorded was *Olearia pannosa* ssp. *pannosa* (National and State: Vulnerable) which was widespread and common in areas, primarily in association with *Eucalyptus odorata* woodlands.

Communication of Survey Results

Relevant components of the survey results, such as overall ecological categories for roadside vegetation, will be communicated with Council staff and contractors undertaking work on Council roadsides via a number of modes. This includes through the: provision of maps, development and use of a consolidated roads map (see **Section 4 Management Actions**), development of a Quick Guide highlighting key features of this RVMP and training of Council staff on the requirements of this RVMP (see **Section 4 Management Actions**).

Photo. Installing Roadside Markers

Photo taken 2014



3. Management Issues

This section of the RVMP:

- identifies and describes activities and management issues that may impact on native roadside vegetation
- provides guidelines to minimise the likely impacts of these activities, and
- details the consultation and approval processes that must be followed if these activities are to involve the clearance of native vegetation.

For each activity/issue there is a standard section entitled Consultation and Approval Procedures identifying when “clearance approval” is and isn’t required. The term “clearance approval” should be interpreted as follows:

- Native vegetation clearance approval is needed under the *Native Vegetation Act 1991*.
- The NVMU within DEWNR should be the first point of contact regarding such clearance. The NVMU may be able to approve clearance of a small amount of vegetation known to be common to an area without the need for a formal clearance application.
- The NVMU will determine whether the proposed clearance requires formal clearance approval from the Native Vegetation Council in the form of a Clearance Application.

The Quick Reference Guide on the following page refers to ‘minor clearance’ not needing clearance approval. This refers to very minor and localised 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. If in doubt as to what constitutes minor clearance, prior consultation with the NVMU is recommended.

**Both the Native Vegetation Management Unit and the Native Vegetation Council can be contacted at:
GPO Box 1047 ADELAIDE SA 5001**

Telephone (08) 8303 9777

Facsimile (08) 8303 9780

Email nvc@sa.gov.au

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

Council Investigation and Enforcement

In addition to penalties applicable under the Native Vegetation Act 1991, penalties of up to \$5,000 apply to the unauthorised interference, planting and/ or removal of roadside vegetation pursuant to Section 221 of the *Local Government Act 1999*. Council will adopt a consistent approach to the deterrence and investigation of, and response to, the unauthorised planting, interference and/ or removal of vegetation on our roadsides. This approach may include public notification of unauthorised vegetation damage via letters drops, signage and media engagement, remediation works including replacement plantings and/ or the prosecution of offenders. Council will also refer any unauthorised clearance of native vegetation on our roadsides to the Native Vegetation Management Unit (NVMU).

Quick reference guide to the legal requirements under the *Native Vegetation Act 1991*

The table below is a quick reference guide to the legal requirements of clearing native roadside vegetation, as detailed more fully in the "Guidelines for the Management of Roadside Vegetation" (NVC, 2012).

ACTIVITY	CLEARANCE APPROVAL		Relevant Section within RVMP
	NOT REQUIRED (Does not require approval under the Native Vegetation Act 1991)	REQUIRED (Under Native Vegetation Regulation or clearance application to the NVC)	
Maintenance	Maintenance of existing clearance with low impact methods	Increased clearance or high impact methods to be used	Section 3.2 Pg. 25
New Roadworks	Very minor clearance e.g. pruning of branches or removal of one or two saplings or shrubs known to be common in the area	All but very minor clearance	Section 3.1 Pg. 21
Pest Plant and Animal Control	Very minor clearance e.g. pruning for access	All but very minor clearance	Section 3.5 Pg. 31
Bushfire Prevention	Maintenance of legally established existing breaks.	Any other clearance for fire prevention Unless in accordance with a District Bushfire Management Plan under the Fire and Emergency Services Act 2005, or through an application to the CFS Regional Prevention Officer	Section 3.9 Pg. 41
Fencelines	Trees on boundary, branches over/through fence, bushes within 1m if they are growing through fence	Any clearance exceeding standards	Section 3.7 Pg. 37
Access to Adjoining Land	Maximum 5m wide – normal access. Maximum 10m wide – machinery. (Careful site selection to minimise clearance)	Any clearance exceeding standards	Section 3.8 Pg. 40
Grazing (Leased Roads)	Long-standing grazing practices.	Any direct clearance or increased pressure on native vegetation through changed grazing	Section 3.10 Pg. 44
Grazing (general)	No native vegetation or only trees & exotic grasses present	Where understorey or regenerating vegetation present	Section 3.10 Pg. 44
Removal of Plant Material	Dead vegetation other than that defined in the Native Vegetation Regulations	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.	Section 3.14 Pg. 51
Maintaining Diversity		Any measures involving burning, lopping or other disturbance of native vegetation.	Section 3.16 Pg. 55

NOTE: As well as the above requirements under Native Vegetation Act 1991, ANY removal of roadside native vegetation needs local council approval and may require approval under other legislation, e.g. *Environment Protection and Biodiversity Conservation Act 1999*. **If in doubt about any of these requirements, consultation with the relevant authority is recommended.** See **Appendix 7** for a list of Council approval requirements.

3.1 New Roadworks

Background Information

Alexandrina Council sometimes needs to undertake new roadworks such as:

- construction of new roads along previously undeveloped road reserves
- widening or realignment of existing roads
- construction of new drains, borrow-pits, and stockpile sites.

Other new works incidental to these primary activities can include:

- installation of fences, railings, barriers or gates
- installation of traffic control devices, traffic islands or parking bays
- landscaping and beautification works
- installation of road lights
- installation of amenities or equipment on or adjacent to a road for the use, enjoyment or protection of the public
- installation of signs on or adjacent to a road.

These activities can have significant environmental impacts. To minimise environmental impacts it is important that roadside vegetation is assessed prior to works being undertaken. If significant native vegetation is present it may be possible to modify the roadworks to reduce or avoid negative impacts.

Major road upgrades expected within Alexandrina Council district during the next five years include the sealing of Dry Plains Road and Nine Mile Road. Both of these roadsides contain a significant amount of native vegetation, including in some areas national and state listed threatened species, with certain sections included within Council's Roadside Marker System.

Objectives

1. To ensure road construction activities meet road safety standards whilst ensuring minimum disturbance to roadside native vegetation.
2. To ensure that where significant native vegetation is present, Council will give genuine consideration to modifying the road design and construction process to reduce or avoid serious environmental impact.

Guidelines

Road Design

Alexandrina Council will consider the following design principles when planning new roadworks:

- Vegetation communities of high conservation significance should be avoided. If significant vegetation is present, Council will consider modifying the roadworks to avoid or minimise damage. See NAMO principles in **Appendix 6**.
- 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 adjacent native vegetation outside the road reserve.
- Drainage systems and batters should be designed to minimise sedimentation of water courses, minimise discharge into disease-susceptible plant communities, and control erosion.

Road Construction

Once clearance approval has been obtained from the NVC, Alexandrina Council will minimise the impact of construction on adjacent vegetation by abiding with the following guidelines:

- Clearly identify and mark with stakes, tape or fencing any significant or protected vegetation and habitat areas prior to the commencement of works and always stay within the construction zone.
- Limit soil disturbances on roadsides – windrowing spoil onto roadside vegetation should be avoided by grading/directing any spoil towards the road pavement and removing it to a designated dump site.
- Identify the exact location of proposed stockpiles, plant compounds, access roads and turning areas to avoid any incidental vegetation damage – machinery and stockpiles should be kept on already cleared land.
- Borrow pits must be located where native vegetation will not be disturbed.
- Materials for construction works 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 or disease prone areas.
- Only use the appropriate type and minimum size of machinery for the job.

- Dispose of other waste materials at an appropriate site or leave as habitat for wildlife (i.e. hollow logs, and other woody material may be left on site if they are spread widely and not left in a pile).
- If there is no alternative to burning of prunings, do not burn close to native vegetation to avoid risk of fire
- Native vegetation cleared should not be pushed and/or heaped into native vegetation outside the approved clearance zone.

If unsure about any environmental controls, contact the site supervisor or Council’s Environmental Project Officer.

Road Standards

Alexandrina Council has established a road hierarchy based on the role each particular road is expected to perform, see **Table 4** below. The hierarchy includes minimum travel way widths for new roads i.e. width of traffic lands exclusive of shoulder, which will be implemented subject to approval from the NVC under Regulation 5(1)(d). For more detailed information about Council’s road classification categories, refer to **Appendix 5**.

In each instance, the width of the road shoulder and verge for new roads will be guided by the Austroads Guides to Road Design.

Table 4.
Hierarchical road classification categories.

Category	Description	Minimum Width of Travel Way
Urban/Town Roads - those situated inside the town boundaries of Strathalbyn, Milang, Clayton, Goolwa, Middleton, Mount Compass, Langhorne Creek, Woodchester, Finniss and Port Elliot.		
Distributor	Sealed roads that carry large volumes of traffic and link suburbs and towns, provide a direct link through a town or area or act as a bypass route around a town or urban area.	Minimum 7m
Collector	Sealed roads that collect traffic from urban areas and channel directly to town centres or major points of activity. May also link directly to distributor roads.	Minimum of 6.6m unkerbed or 10m kerbed
Local	Carry low traffic volumes and provide access within an urban area or town.	Minimum 6m unkerbed or 7.4m kerbed
Access Lane	Minor roads, laneways or access rights of way used predominantly to access residential properties.	Minimum 3.5m for single carriageway, 5m for dual carriageway
Rural Roads - those situated outside the town and urban areas		
Distributor	Sealed roads that carry medium to large volumes of traffic and directly link rural areas and/or towns.	Minimum 7m
Collector	Generally sealed roads that collect traffic from rural areas and channel to rural towns or distributor roads.	Minimum 7m sealed, 8m unsealed
Local	Generally unsealed roads that have low traffic volume and link rural properties and areas to towns or rural distributor roads.	Minimum 6m
Access Track	Generally unsealed, narrow roads that service a small number of properties.	Minimum 3.5m but standard width of 6m preferred to enable travel of farm machinery.
Property Access	Unmade road or track used to access up to three properties.	NA
Unmade Road	Road reserve that is not used for access.	NA

CONSULTATION AND APPROVAL PROCEDURES FOR NEW ROADWORKS

Council Approval Requirements

When designing new roadworks which are likely to involve the clearance of native vegetation, Council's Infrastructure Department will consult with Council's Environmental Project Officer who will determine whether further consultation with and/or approval from the NVMU is required.

NVC Approval Requirements

Clearance approval under Regulation 5(1)(d) is required for new roadworks (such as construction, widening, realignment, new drains, borrow pits or stockpile sites) that involve clearance of native vegetation.

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 NVMU is recommended.

(2) Prior to any works being designed and/or undertaken, it is recommended that the NVMU or a suitably qualified person with good plant identification skills be consulted. It is possible that the site may contain small, visually insignificant plant species, such as orchids or native grasses that are of particular conservation significance.

(3) Local councils are asked to contact the NVMU early in the planning and design stages of new roadworks, therefore minimising delays in the clearance approval process.

Under the *Native Vegetation Regulations 2003*, Regulation 5(1)(d) permits clearance of native vegetation for new road works provided that the works are located so as to avoid or minimise where practicable the clearance of native vegetation including impacts 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. Clearance for new roadworks requires an SEB to offset the clearance

Photo.
Native Vegetation





3.2 Roadside Vegetation Maintenance

Background Information

This section of the RVMP applies to the clearance of regrowth vegetation in order to maintain a safe road corridor or other already established areas of clearance on road reserves.

It is essential that vegetation along roadsides be trimmed (vertically and laterally) so as to provide safe clearance for road users. The degree of clearance required may vary according to the standard of the road, the type and amount of traffic and the characteristics of the vegetation.

Along most rural roads, clearance to the necessary safety standard has already taken place, but regrowth may be encroaching back into the clearance envelope. Regrowth may also be occurring on other cleared or disturbed sites such as borrow-pit sites and designated spoil heap sites.

Alexandrina Council has two recurring roadside maintenance programs designed to control regrowth of roadside vegetation within existing clearance envelopes:

- Roadside weed spraying program – chemical weed control program along developed roads occurring three times per year and primarily targeted towards control of weeds.
- Roadside tree trimming program – mechanical and manual clearance program along developed roads targeted towards maintenance of vertical and lateral clearance envelopes.

Maintenance of other existing clearance areas outside of the standard clearance envelope, such as diversion drains, generally occurs during Council’s annual program of patrol grading and resheeting works (unsealed roads). Maintenance of existing diversion drains also occurs on a reactive basis during the winter season to ensure the safety of Council’s road system. Where possible, Council’s tree trimming program is timed to align with Council’s resheeting program.

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.

Guidelines

Clearance Envelopes

A vegetation clearance envelope is required to allow for the passage of legal height (4.6m) vehicles across the full width of the carriageway. To allow for regrowth between pruning and sagging of branches caused by wet and windy conditions, a minimum clearance height of 5.0m is maintained.

Alexandrina Council has adopted standard clearance envelopes for sealed and unsealed roads which detail the extent of vertical and lateral clearance permitted without the need for NVC approval, provided low-impact methods are used and the regrowth vegetation is less than five years old. See **Appendix 9** for diagrams of these standard clearance envelopes.

Sealed Roads: Alexandrina Council will maintain a clearance envelope up to a vertical height of 5m with a lateral extent of up to 1m from the edge of shoulder, see diagram in **Appendix 9**. Shoulder width may vary in line with design conditions, i.e. operating speed. If the road is kerbed, Council will maintain a vertical clearance of 5m to the kerblines.

Unsealed Roads: Alexandrina Council will maintain a clearance envelope up to a vertical height of 5m with a lateral extent of up to 1.5m from the edge of the grader line, see diagram in **Appendix 9**. Every effort will be made to limit grading to the minimum required width so as to prevent incremental widening of the road pavement leading to encroachment upon and subsequent loss of roadside vegetation. This width should be documented for reference during future maintenance works.

Secondary Clearance Envelopes

Secondary clearance envelopes are further areas to be kept clear of regrowth vegetation for adequate visibility of other traffic, signs and other roadside furniture.

- Secondary clearance envelopes extending up to 500mm around roadside furniture can be maintained, refer **Figure 1, Appendix 9**.
- Additional clearance envelopes may be maintained on the approach side of signs and delineation devices to ensure they are clearly visible from a distance equivalent to the stopping sight distance for the speed environment of the road, refer **Figure 2, Appendix 9**.
- At road intersections, existing verge clearance for safe sight lines and sight triangles can be maintained according to Austroad Standards, refer **Figure 3, Appendix 9**.

Low growing native plant species within the road verge that do not impair sight distances or pose a significant risk to vehicle safety are to be retained and promoted. The presence of these species can help prevent weed invasion and soil erosion, maintain a level of biodiversity in the area and can reduce roadside management costs.

Achievement of Standard Clearance Envelopes

In recent years, standard clearance envelopes on many of Alexandrina Council's developed roads have not been well maintained such that vegetation more than five years old is now present within the extent of the standard clearance envelope and/or the recorded width of Council's unsealed roads does not reflect actual on-ground variations in road width making achievement of standard clearance envelopes as against recorded road widths difficult without causing serious damage to native vegetation.

In response, Alexandrina Council will be undertaking a survey to collect clearance envelope and woody weed data which will assist in the development of a revised tree trimming program that will more effectively achieve and maintain Council's standard clearance envelopes whilst minimising damage to native vegetation. For further details of the proposed survey methodology, see **Section 4**. On some roads where regrowth is more than five years old and/or larger established trees are located close to the road, it is likely that NVC approval will be needed to facilitate achievement of standard clearance envelopes.

This process will also identify roads where a clearance height of greater than 5m is justified e.g. in areas where oversized agricultural vehicles (up to legal height of 4.9m) are regularly used and hence a case can be made for a vertical clearance height of up to 5.5m.

At the conclusion of this process, this RVMP will be reviewed and updated to reflect proposed outcomes and then resubmitted to the NVMU for review. The updated RVMP will likely include a list of roads where clearance envelopes greater than the current "standard clearance envelopes" are justified. It may also include a list of roads where a smaller than standard clearance envelope is justified in order to protect native vegetation of particularly high conservation significance.

Code of Practice

The following code of practice will be implemented by Alexandrina Council when undertaking maintenance of standard clearance envelopes and other existing clearance areas on roadsides.

If any Council staff member or contractor is unsure about required environmental controls, they should contact the site supervisor or Council's Environmental Project Officer.

Minimise Weed and Disease Spread

- clean down machinery in appropriate areas before entering and leaving work site
- program works to begin with clean machinery in high conservation areas and work toward degraded sites.

Turn-around Points

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

Maintenance of Diversion Drains

- 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
- ideally weed growth should be sprayed at least one month before clearing or cutting drain
- away from native vegetation and watercourse
- maintenance of drains within RMS sites and creation of all new diversion drains requires internal approval from Council's Environmental Project Officer.

Herbicides

- avoid over-spray by not spraying in windy conditions.

Vegetation Removal

- avoid "cleaning up" vegetation and retain stumps, hollow logs and dead wood where possible, as habitat for wildlife
- carefully prune trees using low impact methods preferably in accordance with recognised arboriculture standards
- avoid damaging undergrowth when removing trees
- where pruning debris is to be mulched on-site and returned back onto the roadside, care should be taken to avoid dumping mulch on existing native vegetation and in drains. For high conservation value roadsides (Category A and B) it is preferable for pruning debris to be taken off-site
- if pruning debris is not mulched, do not dump on existing native vegetation, Dispose of waste materials at an appropriate site
- low shrubs, native grasses and ground covers generally do not affect road safety and, where possible, will be retained to help prevent weed invasion and erosion
- particular care to be taken within RMS sites.

Machinery Use

- 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.

CONSULTATION AND APPROVAL PROCEDURES FOR ROADSIDE VEGETATION MAINTENANCE

Council Approval Requirements

- Council’s Engineering and Infrastructure Departments will consult with Council’s Environmental Project Officer whenever anything more than low impact clearance of regrowth within standard clearance envelopes or other existing clearance areas is proposed. The Environmental Project Officer will determine whether further consultation with and/or approval from the NVMU is required.
- RMS Sites Only - prior to maintaining existing clearance areas outside of the standard clearance envelope, such as existing diversion drains, Council’s Engineering Department will first consult with Council’s Environmental Project Officer who will provide advice on measures to minimise or avoid damage to native vegetation.

NVC Approval Requirements

- Clearance approval is not needed for maintenance of standard clearance envelopes and/or other existing clearance areas outside of the standard clearance envelope (i.e. diversion drains and borrow pits) **provided that** low-impact methods (e.g. slashing, rolling, chainsaws) are used and the regrowth vegetation is less than five years old.
- Clearance approval is needed where:
 - Clearance exceeding previously established clearance envelopes or areas is proposed (such as clearance heights above 5m, clearance of whole trees, or the construction of new drains/ stockpile areas).
 - Regrowth vegetation over five years old is present within an existing clearance envelope or other existing clearance area, in which case:
 1. Clearance of regrowth vegetation between five and ten years old requires consultation with, and approval from, the NVMU. In situations where a clearance cycle longer than five years can be justified it is likely to be approved and noted on file.
 2. Clearance of regrowth vegetation older than ten years usually requires assessment and clearance approval either under Regulation 5(1)(b)(for safe sight distance) or 5(1)(d) (for reasons other than safe sight distance).
 - Regrowth has reached the stage where high-impact methods (e.g. bulldozing) are proposed.

Any new clearance for safe sight distance (i.e. clearance exceeding previously established safety standards) requires written approval under Regulation 5(1)(b) - see **Section 3.3** - and clearance for any new roadworks requires approval under Regulation 5(1)(d) – see **Section 3.1**. If in doubt, check with the NVMU for advice.

The following table summarises the above framework for approving the clearance of regrowth vegetation on roadsides:

Type of Clearance	No Approval Required	Internal Approval	NVC Approval
Low impact maintenance within standard clearance envelope	X		
Low impact maintenance of existing clearances outside of standard clearance envelope	Non-RMS Sites	RMS Sites	
High impact clearance within standard clearance envelope, additional clearance required where vegetation older than 5 years			X
New clearance areas outside of standard clearance envelope			X (Sections 3.1 and 3.3)

3.3 Public Safety

Background Information

This section of the RVMP summarises the requirements for Council when considering new clearance (as opposed to maintenance of regrowth) for the purpose of increasing levels of road safety under Regulation 5(1)(lb). Once any additional clearance areas are authorised under Regulation 5(1)(lb), maintaining those clearances will then be covered by the maintenance section of this RVMP, see **Section 3.2**.

Regulation 5(1)(lb) vs Regulation 5(1)(d)

Regulation 5(1)(lb) primarily applies to the clearance of whole trees which pose a safety hazard on roadsides, intersections and rail crossings.

In contrast, Regulation 5(1)(d) applies to new road works including intersection realignments and road widening where the native vegetation being cleared is not the hazard itself but is instead incidental to the proposed works, see **Section 3.1**.

Clearance under Regulation 5(1)(lb) does not require achievement of a Significant Environmental Benefit (SEB), while clearance under Regulation 5(1)(d) does require achievement of a SEB.

Objectives

To balance roadside protection of native vegetation and public safety.

Guidelines – Public Safety Clearance

In October 2012, the NVC approved a new "Framework for the Clearance of Native Vegetation under Regulation 5(1)(lb) – Public Safety for Rail Crossings, Road Intersections, and Roadsides". All clearance for public safety under Regulation 5(1)(lb) must comply with these guidelines.

Under the framework there are three clearance categories, each with a different level of approval requirements:

- Category 1: clearance of whole trees and understorey vegetation for safe sight lines/triangles at road intersections, inside curves and at rail crossings.
- Category 2: clearance of whole trees within a certain distance from edge of the roadway, with applicable distance dependent on the nature of the road (sealed ≤ 80km/h, sealed > 80km/h, unsealed).
- Category 3: clearance of whole trees beyond Categories 1 and 2.

In all cases, Council must firstly consider the NAMO principles to avoid or minimise the impacts that any proposed clearance may have on biodiversity, refer **Appendix 6**. i.e. a vigorous assessment of alternative options to reduce the hazard should be undertaken. Tree removal should only occur when all other treatment options have been exhausted or discounted.

Photo.
Roadside
Vegetation



CONSULTATION AND APPROVAL PROCEDURES FOR CLEARANCE FOR PUBLIC SAFETY

Council Approval Requirements

Any person seeking the removal of roadside vegetation for public safety purposes should lodge a Customer Action Request (CAR) with Council by calling Customer Service on (08) 8555 7000 or by emailing alex@alexandrina.sa.gov.au. Council may then request that the person complete the relevant application form, refer **Appendix 7**.

Engineering staff will consult with Council's Environmental Project Officer whenever anything more than low impact clearance within the standard clearance envelope is proposed. Council's Environmental Project Officer will then assess the request against the requirements of this RVMP and Council's Tree Management Policy.

NVC Approval Requirements

Maintenance of existing clearance envelopes by low impact methods can generally proceed without clearance approval, refer **Section 3.2** above.

If new clearance for public safety is proposed, Council should contact the NVMU who will advise whether Regulation 5(1)(b) is applicable or whether the clearance falls under Regulation 5(1)(d).

New vegetation clearance for sight distance at intersections, or any other new clearance for public safety, needs to occur according to Austroad Standards and requires **NVC** written approval under Regulation 5(1)(b).

For details regarding the extent of clearance permissible under Regulation 5(1)(b), see the 'Framework for the Clearance of Native Vegetation under Regulation 5(1)(b) – Public Safety for Rail Crossings, Road Intersections, and Roadsides' dated October 2012 and available on the NVC website: www.environment.sa.gov.au.

3.4 Installation and Maintenance of Services

Background Information

Services such as power, water, gas, sewage, and telecommunications have often been and continue to be established along road reserves. The construction and maintenance of these services can damage roadside vegetation through clearance, disturbance, and the introduction of weeds and pathogens. This section describes how the use of road reserves for installation and maintenance of services including power, water, telecommunications, sewage and gas is controlled.

Objectives

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

Guidelines – Installation and Maintenance of Services

New Services

The installation of any new services involving the clearance of native vegetation on roadsides requires the service provider to lodge a submission with the NVC under Native Vegetation Regulation 5(1)(d). This regulation permits clearance of native vegetation for the construction or expansion of infrastructure that is considered to be in the public interest, provided that the infrastructure is located in such a way as to avoid or minimise the impact on native vegetation and that there is provision made for a significant Environmental Benefit (SEB).

Also note that some service providers have an NVC Approved Standard Operating Procedure, the work is carried out under set criteria.

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, 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 which involve the clearance of native vegetation on roadsides are permitted under Native Vegetation Regulations 5(1)(f) – Maintenance works associated with electricity supply and 5(1)(g) – Repair or Maintenance of Infrastructure.

In some circumstances, the service provider is required to give Alexandrina Council ten business days notice in writing outlining the proposed clearance. Such notice is not required if the service provider is acting in accordance with a Standard Operating Procedure approved by the NVC or in the case of emergency situations, such as the need to restore power following an outage.

A service provider undertaking vegetation clearance on a roadside for infrastructure maintenance purposes must follow guidelines issued by the NVC in relation to the protection of native vegetation from the spread of plant diseases or noxious weeds, or from unnecessary damage. A service provider must also follow guidelines and requirements included within this RVMP.

For more information see 'A Guide to the Regulations under the Native Vegetation Act 1991' available on the NVC website: www.environment.sa.gov.au
Regional NRM Officers can provide training and advice on prevention of spread of plant diseases and noxious weeds.

CONSULTATION AND APPROVAL PROCEDURES FOR CLEARANCE ASSOCIATED WITH INSTALLATION AND MAINTENANCE OF SERVICES

Council Approval Requirements

- Pursuant to s 221 of the Local Government Act 1999, any person wishing to construct new services within a road reserve must obtain prior approval from Council, refer **Appendix 7**, unless that person has some other statutory authorisation to make the alteration.

NVC Approval Requirements

- Clearance approval is required for native vegetation clearance associated with any new services or maintenance of services in excess of existing standards (excluding carriers authorised under the *Telecommunications Act 1997* to install a low impact facility) - refer to Regulation 5(1)(d).
- Approval is not required for maintenance of existing clearances, i.e. clearance around powerlines pursuant to the *Electricity Act 1996* – refer to Regulations 5(1)(f) and 5(1)(g).

3.5 Pest Plant and Animal Control

Background Information

Pest plants (weeds) and pest animals (feral animals) are a significant threat to the natural environment and to the productivity of the agricultural sector. The linear and semi-disturbed nature of many roadsides means they are particularly susceptible to invasion by pest plants and animals. Without appropriate control and preventative measures, weeds and pests can invade and degrade areas of native vegetation both on and adjacent to the roadside.

Pest plants and animals fall into two broad categories: species which have been “declared” for control under the *Natural Resources Management Act 2004* and “non-declared” species which are considered a lower priority with regard to legislative control at this stage. Non-declared weeds, such as pasture grasses and non-local Australian natives, can still invade roadsides and compete with local native plants, and it is important that where resources allow, these weeds are controlled in addition to declared weeds, particularly on roadsides with native vegetation of high conservation value.

Table 5 below summarises the roles and responsibilities of local NRM Boards, local government and other landholders with respect to the control of pest plants and animals on various types of land including roadsides.

Appendix 8 summarises the declared plant species identified by staff within Natural Resources AMLR and Natural Resources SAMDB as occurring within the Alexandrina Council area, including their advice as to which species should be considered a priority for control.

NRM staff also identified the following non-declared weeds as being an issue within the Alexandrina Council area:

- Natural Resources AMLR: Acacia saligna, Victorian Coastal Tea Tree, Albizia, Century Plant and Radiata Pine.
- Natural Resources SAMDB: Giant ice plant (Mesembryanthemum guericchianum).

Rabbits are the main animal pest of concern in the AMLR NRM portion of the Alexandrina Council area, but control is often difficult in urban and semi-rural areas (Tim and Jackie, AMLR NRM pers. comm.)

Natural Resources SAMDB have been focusing on the following pest animal species within the Alexandrina Council area: feral pigs at Mt Jagged and Kuitpo, red deer on Hindmarsh Island and feral goats around Mt Magnificent (Sandy Cummings pers. comm.)

Table 5.
Summary of Pest Plant and Animal Control Responsibilities.

Control Situation	Responsible stakeholder	Comments regarding current Alexandrina Council practices
Declared pest species on road reserves	Local NRM Boards In Alexandrina Council these are: <ul style="list-style-type: none"> • Adelaide and Mt Lofty Ranges (AMLR) NRM Board • SA Murray-Darling Basin (SAMDB) NRM Board. 	Alexandrina Council (in consultation with local NRM Boards) does voluntarily undertake some control of declared weeds on roadsides with priority given to weeds occurring within RMS sites and/or on roadsides adjacent to high conservation value remnant vegetation on public and/or private land. Where adjacent landholders or community conservation groups seek to control pest plants and animals on roadsides, they must seek prior written approval from Alexandrina Council (see Section 3.17). Council will advise whether additional clearance approval is required from the NVC and may refer the applicant to the local NRM Board for further advice.
Declared pest species on private property	Landholder	Alexandrina Council refers landholders to the relevant NRM Board for advice on control methods.
Non-declared pest species on road reserves	Alexandrina Council	Refer Section 3.17 – Restoration of Roadside Vegetation.
Declared and non-declared pest species on Council land other than roadsides	Alexandrina Council	Council has an annual program of Environmental Works. Priority is given to controlling pest plants and animals on Council land of highest conservation value.

Alexandrina Council has a number of recurring programs designed to control pest plants and animals on roadsides as well as achieve other objectives such as maintenance of clearance envelopes and reduction of fuel loads:

- Roadside weed spraying program – chemical weed control program along developed roads occurring three times per year.
- Roadside tree trimming program – for maintenance of clearance envelopes on developed roads. In some areas, this program involves the removal of roadside pest plants as an alternative to ongoing pruning. See **Section 3.2** above for further details.
- Environmental works program – restoration (including pest plant and animal control) and revegetation works targeting roadside vegetation of high conservation value. See **Section 3.17** below for further details.
- Roadside slashing program – annual slashing along developed roads to minimise fuel loads, particularly the growth of grassy weeds. Roadside slashing does not occur within RMS sites. See **Section 3.9** below for further details.

There are also a number of roadside locations with the Alexandrina Council area where pest plant and animal control works are undertaken by our third-party conservation partners including NRM Boards, Trees For Life, Goolwa to Wellington Local Action Planning Association (GWLAP) and other local conservation groups, as well as by adjacent landowners.

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 associated with pest plant and animal control.

Guidelines – Pest Plant and Animal Control

Advice on best practice pest plant and animal control methods within the Alexandrina Council area is available from the two local NRM Boards: Natural Resources Adelaide and Mount Lofty Ranges (AMLR) and Natural Resources SA Murray Darling Basin (SAMDB).

Some important basic principles are:

- suitably qualified contractors, council staff and/or community groups trained in the identification of native vegetation and weeds should be used to implement pest control measures on roadsides
- landholders wishing to undertake pest plant and animal control on roadsides should be given advice as to appropriate control methods which will minimise disturbance and damage to native vegetation
- small infestations of weeds may be best dealt with using minimum disturbance techniques such as hand-pulling and 'cut-and-swab' with herbicide
- soil disturbance should be minimised - any control method involving soil disturbance has the potential to promote further establishment of declared plants or other introduced plants which may disrupt the ecology of the native vegetation
- it is usually best to work from the best areas of bush or areas of low weed infestation towards denser infestations. However control of serious weeds outside of good quality native vegetation areas is sometimes justified to address outliers and point source patches, which can result in weeds travelling along road corridors to better areas if left unmanaged
- spot-spray and selective herbicides should be used carefully to avoid off-target damage to 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
- control works should be followed up with site monitoring and selective eradication of any introduced plants which re-establish.

It is a legal requirement that clearance of native vegetation during programs for the control of declared pest plants and animals must be kept to the minimum needed for effective control in accordance with advice from the local NRM Board.

The relevant NVC guidelines entitled "Clearance of Native Vegetation associated with the control of plant and animal pests" can be found on the NVC website: www.environment.sa.gov.au.

Key points from these guidelines include:

- **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.
- **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. Any broader spraying program in roadside native vegetation (e.g. boom-spraying) outside of the clearance envelope, see **Section 3.2** above, requires endorsement of the NVMU and may require the consent of the Native Vegetation Council through a clearance application.
- **Removal of Entire Native Plants:** The removal of entire native plants is not normally necessary for pest control, but if considered necessary, must first be discussed with and endorsed by the NVMU. This consultation can occur on a case-by-case basis or in the form of broader planning arrangements developed between the local NRM Board and the NVC, such as a regional pest management plan. See the NVC guideline referenced above for further details.
- **Fire as a pest control method:** fire has some potential for inclusion in pest control programs in native vegetation to improve access, reduce the bulk of declared plants, and 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 NVMU. See **Section 3.15** below for further details on Ecological Prescribed Burning.

Photo.

Native Australian Banksia



CONSULTATION AND APPROVAL PROCEDURES FOR PEST PLANT AND ANIMAL CONTROL

Council Approval Requirements

- Any person wishing to undertake pest plant and/or animal control work on a roadside must obtain prior written approval from Alexandrina Council. Relevant application forms are available on Council's website, refer **Appendix 7**. The application will be assessed by Council's Environmental Project Officer who will decide whether consultation with the local NRM Board and/or NVMU is required.

NVC Approval Requirements

- (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/or
- burning of native vegetation to assist pest control.

"Significant" in this context does not include minor damage, such as removal of branches to gain access to pests.

The NVMU is able to determine whether the proposed clearance is of a sufficiently significant nature to warrant the need for clearance approval.

- (b) In districts where there are serious problems with roadside pest control, local NRM Boards are encouraged to develop overall management strategies in consultation with the NVMU. This can avoid the need for consultation with the Unit on a case-by-case basis.
- (c) Where pest control works are planned (including by adjoining landowners) that could affect roadside native vegetation, Council's Environmental Project Officer and the local NRM Board should be the first point of contact. The need for consultation with the NVMU can then be determined.

Photo.
Pest plant, Aleppo



3.6 Plant Diseases and Infestations

Background Information

Plant diseases (such as Phytophthora and Mundulla Yellows) and infestations (such as mistletoe and lerp) can cause a decline in native vegetation condition on roadsides. The best way to manage soil-borne plant diseases is to prevent the transfer of infested soil or plant material to uninfested sites. For mistletoe infestations, the lopping of limbs may be proposed as a short-term means of protecting unhealthy host trees however as with lerp infestations, the better long-term management approach is to address the degradation of surrounding vegetation.

Phytophthora

Phytophthora is a microscopic, soil and water borne organism that infects the roots and basal stem tissue of some native and introduced plants preventing the uptake of water and nutrients by the plant, causing dieback and death. Any movement of soil, water and/or plant material has the potential to spread Phytophthora to new areas. Once an area is infested it is always infested. There are many species of Phytophthora, but the most widespread and destructive to native vegetation in South Australia is *Phytophthora cinnamomi* (*P.cinnamomi*).

Not all areas are vulnerable to Phytophthora infection. Vulnerable areas are those with susceptible vegetation and conducive environmental conditions (i.e. an average annual rainfall of 400mm or more, neutral to acid soils, soil with poor drainage and temperature of at least 15 degrees Celsius). Phytophthora has been identified at a number of locations through the Alexandrina Council District, see map in **Appendix 3**.

The best way to control Phytophthora is to prevent the transfer of infested soil or plant material (see further information in Guidelines below). For more information the local NRM Regional Officer can be contacted. NRM Regional staff can also provide training and guidelines for addressing Phytophthora spread.

Mundulla Yellows

Mundulla Yellows is another plant-die back syndrome generally found on alkaline soils. Mundulla Yellows is not currently identified as an issue in the Alexandrina Council area.

Mistletoe Infestation

Mistletoe species are native to South Australia and protected under the *Native Vegetation Act 1991*. Mistletoes are flowering plants that use other plants to obtain water and

mineral nutrients but they also provide important habitats for many fauna species, such as birds, butterflies, possums, ants and other insects.

In some areas, mistletoe infestations appear to be contributing significantly to tree decline. The factors involved are not well understood but appear to be linked with the extent of general vegetation clearance and the accompanying loss of wildlife habitat. An imbalance has been created. Often trees are in poor health due to degradation of surrounding vegetation, and are perhaps more susceptible to the impacts of mistletoe.

Lerp Infestation

Lerp insects are native leaf-sucking insects which frequently attack red gums (e.g. in the Mt Lofty Ranges) and pink gums (e.g. in the South East). Pink Gums can be susceptible to lerp attack during certain climatic events and especially where the understorey has been removed or altered in the past as this impacts upon the bird species utilising the habitat). 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.

For further information about these or other plant diseases and infestations contact DEWNR's Biosecurity Ecologist or the NVMU for advice.

Objectives

1. To minimise the spread of Phytophthora and other soil-borne diseases in the local council area.
2. To manage infected and infested areas in such a way as to minimise the effect on the environment To protect uninfested areas and minimise the risk of them becoming infected.
3. To promote a "whole of Community" approach to the management of Phytophthora (and /or other diseases and infestations) in the local council area.

Guidelines – Plant Diseases and Infestations

Phytophthora

- Parts of Alexandrina Council have been identified as vulnerable areas for Phytophthora infection. A map showing vulnerable areas within Alexandrina Council as well as known sites where Phytophthora has actually been recorded within the Alexandrina Council district is included in **Appendix 3**.
- Alexandrina Council does not currently have a standard operating procedure for Phytophthora Management, but developing and implementing such a procedure,

and training all relevant staff and contractors in its use, has been identified as a priority for action in Council's Environmental Action Plan (EAP) Action 2.6.4. DEWNR NRM Regional Staff can provide training and guidelines for addressing Phytophthora spread. Contact the regional officer to access latest information.

- In the meantime, Council staff, contractors, community groups and residents will be encouraged to follow the 'Phytophthora Management Guidelines' released by the Phytophthora Technical Group (2006, 2nd edition). These guidelines provide a framework for the management of Phytophthora by all Government and non-government organisations, landholders, community groups and individuals.

Mundulla Yellows

- Mundulla Yellows has not been identified as a problem within the Alexandrina Council area. Council will discuss the matter with the NVMU if and when required.

Mistletoe Infestation

- 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 to managing mistletoe infestations.

- 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. Photos may be emailed to the NVMU who can then issue advice or grant clearance approval. Trimming or pruning of vegetation using appropriate, low impact cutting tools is required. Revegetation of the affected area with a range of indigenous plant species should be considered in combination with, or instead of, disturbance.

Lerp Infestations

- In a natural bushland setting, lerps are generally kept in check by native birds. 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 roadsides is therefore the recommended management approach.

CONSULTATION AND APPROVAL PROCEDURES FOR PLANT DISEASES

Council Approval Requirements

- Any activity occurring within a road reserve known to be infested with Phytophthora requires consultation with Alexandrina Council's Environmental Project Officer. Consent will only be granted if works are to be conducted in accordance with appropriate guidelines.
- Any person wishing to take action to control plant infestations such as mistletoe or lerp on a Council roadside, must first apply for approval, refer **Appendix 7**. Council's Environmental Project Officer will then decide whether consultation with and/or approval from the NVMU is required.

NVC Approval Requirements

- There are no legal requirements under the *Native Vegetation Act 1991* in relation to management of plant diseases along road reserves.
- Clearance approval is not required for the removal of Box Mistletoe (*Amyema miquelii*) within township boundaries or outside of township boundaries where the Mistletoe removal is from ten trees or less provided clearance is undertaken in a manner that is consistent with the relevant NVC guideline.
- Clearance approval is required where modification of roadside vegetation using measures such as lopping is proposed as a tool to manage plant infestations and maintain diversity.

3.7 Clearance for Fencelines

Background Information

Alexandrina Council recognises that landholders with property adjacent to roads will be required to construct and maintain boundary fences. Often there will be cleared land on adjacent farmland which can be used to access the boundary fence. In circumstances where adjacent land is not cleared, landowners may have to clear native vegetation to construct or maintain their fence. Whilst a certain level of fenceline vegetation clearance is permissible under the *Native Vegetation Act 1991*, Alexandrina Council strongly encourages landowners to look for voluntary options to reduce the amount of clearance required.

Objectives

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

Guidelines – Fenceline Clearance

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 when clearing vegetation to provide access to fence lines, 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. If unsure of the appropriate way to deal with cleared vegetation, landowners should seek advice from Council's Environmental Project Officer.

If threatened plant species are present along the fenceline, reasonable care should be taken to protect them. In accordance with the NAMO principles, refer **Appendix 6**, Council will discuss with the landholder options to avoid or minimise clearance of these species.

Options for minimising fenceline clearance

- Landholders needing to replace boundary fences are encouraged to consider the option of relocating the new fencing a few metres into their properties to minimise the potential impacts on roadside vegetation.

Photo.

Rural property fenceline
Source: THPStock



Adopting this approach may have the following advantages:

- no need to remove the old fence potentially reducing construction costs
- avoiding the need to cut back any native vegetation that may be growing alongside or through the existing fence
- protection for the new fence in the advent of a fire if the intervening land between the old and new fence is maintained clear of any regrowth as a fuel break
- ongoing fence maintenance costs may be reduced as a result of less damage to the new fence from protruding branches.

In considering this option, a landholder needs to determine if the advantages of relocating the fence line offset the reduction in paddock area. The reduction in paddock area is likely to be quite small, for example moving one kilometre of fencing in by 3m reduces the "fenced in" area by 0.3ha (or $\frac{3}{4}$ of an acre). In many cases this narrow strip may be subject to competition from the root zones of adjacent native vegetation in any event.

Another 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, refer **Figure 5**. Note this approach may not be appropriate for smaller trees, and an effort should be made to avoid structural roots when placing the post hole for the strut next to the tree.

CONSULTATION AND APPROVAL PROCEDURES FOR CLEARANCE FOR FENCELINES

Council Approval Requirements

- A landholder who wishes to clear any vegetation (native or exotic) on a road reserve to enable construction or maintenance of a boundary fence must obtain prior written approval from Alexandrina Council by submitting an Application to Alter a Verge (refer **Appendix 7**). When assessing the application, council staff will have regard to the requirements of this RVMP and Council's Tree Management Policy. Any application involving the clearance of native vegetation will be referred to Council's Environmental Project Officer.
- Council may only approve clearance of native vegetation which complies with 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 fenceline, only those plants growing within one metre of the fence alignment can be removed.

NVC Approval Requirements

Clearance approval from the NVC is required for any clearance of native roadside vegetation along fencelines that exceeds the above standards.

Note: These standards take into account that the adjoining landholder can usually clear up to five metres width on the private land abutting the boundary fence - see Regulation 5(1)(s). Note: this regulation does not provide an automatic right to clear a five-metre strip on private land abutting a fence. If native vegetation on an adjacent property is located within five metres of a fence but does not impede reasonable access to the fence, the regulation cannot be used to clear that vegetation. Landholders should refer to the relevant information sheet published by the NVMU for further details.

Figure 5.

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.

(Below) The same strut arrangement seen from the side. The strut holding the wires away from the tree is directly behind the trunk. The wires are in place, but cannot be seen due to the light at the time the photo was taken.



3.8 Clearance for Access to Adjoining Land

Background Information

From time to time a new access point will be needed from the road to adjoining land. For rural areas, a primary producer may need new access to a paddock, possibly to cater for wide farm machinery. In other situations (e.g. semi-urban) it may be normal vehicular access to a residential allotment. In these situations, the safety of the access-user needs to be the primary consideration, but the conservation of native vegetation is also a high consideration. 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.

Access is generally for a single driveway only, unless the South Australian Country Fire Service supports additional access points for safety reasons. This may be for wider farm vehicles (up to 10m wide) provided it is a primary production property or if more than one access is required to be able to access different sections of a property.

Objectives

1. To minimise the loss of native vegetation through the construction of property access points
2. To provide safe and appropriate access to properties adjacent to road reserves.

Guidelines – Clearance for access to Adjoining land

Avoiding unnecessary clearance

- If there is more than one option which will provide safe access, the option which involves least disturbance of native vegetation, or disturbance to vegetation of lower conservation significance, should be selected.
- 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" road reserves, see **Section 2** above.
- A suitably qualified person(s) will conduct an inspection to assess options for access points, and negotiate an access point that is safe and minimises disturbance to native vegetation.

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 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.

CONSULTATION AND APPROVAL PROCEDURES FOR ACCESS TO ADJOINING LAND

Council Approval Requirements

- All persons wishing to have any vegetation (native or exotic) on a road reserve removed to provide access to adjoining land must submit a Driveway Crossover Application (refer **Appendix 7**). In assessing the application, Council staff will have regard to the requirements of this RVMP and Council's Tree Management Policy. Any application involving the clearance of native vegetation will be referred to Council's Environmental Project Officer
- Council may only approve clearance of native vegetation, which complies with the following standards:
 - For normal vehicle access: five metres wide plus minimum clearance along the road reserve needed to provide adequate sight distance.
 - For wider farm vehicles: ten metres wide plus minimum clearance along the road reserve needed to provide adequate sight distance.

NVC Approval Requirements

3.9 Bushfire Protection

Background Information

Alexandrina Council is required to adhere to the *Fire and Emergency Service Act 2005*. This Act places responsibility on Council to take reasonable steps to prevent or inhibit the outbreak and spread of fire on council owned land, including roadsides. Part 4A of the *Fire and Emergency Service Act 2005*, Division 3105G, states:

1) *A council that has the care, control or management of land in the country, or in a designated urban bushfire risk area, must take reasonable steps to:*

- *prevent or inhibit the outbreak of fire on the land*
- *prevent or inhibit the spread of fire through the land*
- *protect property on the land from fire*
- *minimise the threat to human life from a fire on the land.*

Alexandrina Council is also required to adhere to the *Native Vegetation Act 1991*. Achieving the goals of both of these Acts can be difficult and requires careful planning. Alexandrina Council is committed to undertaking and facilitating fire prevention works that provide best practice outcomes for the conservation of biodiversity and the prevention of fire on roadsides.

The Native Vegetation Regulations 2003 prescribe the rules applying to the clearance of native vegetation for bushfire protection works. These rules are outlined in the Guide for Managing Native Vegetation to Reduce the Impact of Bushfire (2009). This guide can be accessed online at www.cfs.sa.gov.au.

There are nine Bushfire Management Areas in South Australia, each is required to have a Bushfire Management Area Plan (BMAP) endorsed by the relevant Regional Bushfire Management Committee. Alexandrina Council falls within the Fleurieu Bushfire Management Area and is subject to the Fleurieu Interim Bushfire Area Management Plan (Fleurieu iBMAP). It is expected that the Fleurieu iBMAP will be replaced with a final Fleurieu BMAP during the life of this RVMP.

The authority to approve native vegetation clearance for bushfire fuel reduction works lies with the Country Fire Service (CFS). Advice and written approval from the CFS Regional Prevention Officer is required if any proposed bushfire prevention works on Council roadsides are not

covered by:

- the clearance rules outlined in the Guide for Managing Native Vegetation to Reduce the Impact of Bushfire (2009), and/or
- the Fleurieu iBMAP or any subsequent such Plan as endorsed by the Fleurieu Bushfire Management Committee.

If any proposed bushfire prevention works on Council roadsides are not covered by the rules and activities described in these two documents, the CFS will refer the matter to the NVC for approval.

As described in the Fleurieu iBMAP, Alexandrina Council undertakes an annual roadside slashing program along some of our developed roads to minimise fuel loads. This program is particularly designed to target the growth of grassy weeds. Roadside slashing does not occur within RMS sites. Slashing occurs during spring and early summer, and does not require clearance approval provided the works undertaken are as described in the relevant BMAP.

Objectives

1. To take reasonable steps to inhibit the outbreak of fire on roadsides and the spread of fire through roadsides.
2. To minimise the adverse effects of fire management on roadside native vegetation.
3. To outline the process for undertaking bushfire protection works within roadside vegetation to protect life and assets.

Guidelines – Bushfire Hazard Reduction

All bushfire protection works on roadsides must be authorised by, and undertaken in accordance with, the Fleurieu Interim Bushfire Management Area Plan (Fleurieu iBMAP) and/or consistent with relevant clearance rules as described in the Guide for Managing Native Vegetation to Reduce the Impact of Bushfire (2009).

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 for bushfire protection to reduce potential weed invasion and erosion problems.

- Grazing and herbicide use for bushfire prevention purposes 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.
- 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.
- Bushfire prevention works involving the clearance of native vegetation 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 focusing on the removal of exotic vegetation. Particular care should be taken to avoid areas of native grasses, which can be difficult to distinguish from exotic grasses.
- Careful planning and management is required before implementing a prescribed burn including preparation of a prescribed burn plan that is approved by the 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.

Other Considerations

- Where a well-vegetated road reserve adjoins cleared farmland, any required fuel break should be established on the cleared land rather than via clearance of roadside vegetation.
 - Any applications to revegetate roadsides must be assessed and approved by Council's Fire Prevention Officer, see **Section 3.17** for further details.
 - Weed slashing programs should be designed 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 further spread of weeds.
 - Alexandrina Council will encourage and re-iterate the importance of landowners having property specific bushfire management plans.
- 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 threat of a bushfire burning vast areas across the landscape.

Photo.
Burnt Bushland
Mosquito Hill



CONSULTATION AND APPROVAL PROCEDURES FOR BUSHFIRE PROTECTION

Council Approval Requirements

Removal of native vegetation on a roadside to reduce bushfire hazard requires the consent of Alexandrina Council. In granting any consent, Council will comply with relevant provisions of the Native Vegetation Regulations 2003, including Regulation 5A part (b)(ii) as outlined below. Relevant application forms are available on Council's website, refer **Appendix 7**. Applications will be jointly assessed by Council's Environmental Project and Fire Prevention Officers.

CFS Approval Requirements

Advice and written approval from the CFS Regional Prevention Officer is required if any proposed bushfire prevention work on Council roadsides is not covered by:

- the clearance rules outlined in the Guide for Managing Native Vegetation to Reduce the Impact of Bushfire (2009), and/or
- the Fleurieu iBMAP or any subsequent such Plan as endorsed by the Fleurieu Bushfire Management Committee.

If any proposed bushfire prevention works on Council roadsides are not covered by the rules and activities described in these two documents, the CFS will refer the matter to the NVC for approval.

NVC Approval Requirements

The Native Vegetation Regulations 2003 contain provisions enabling the clearance and management of native vegetation for Bushfire Protection works. Under Regulation 5A - Fire Prevention and Control, native vegetation can be cleared if:

- (i) the purpose of the clearance is to reduce combustible material on land, and
- (ii) the clearance:
 - (A) is required or authorised by, and undertaken in accordance with, a bushfire prevention plan (equivalent to a Bushfire Management Plan under the Fire and Emergency Service Act 2005), or
 - (B) is undertaken in accordance with the written approval of the Chief Officer of SACFS.

Clearance approval from the NVC is required for any native vegetation clearance which exceeds that allowable under Regulation 5A.

NOTE:

1. Reference to a Bushfire Prevention Plan is deemed to be that referred to under the Fire and Emergency Service Act 2005, as a Bushfire Management Plan.
2. For the purpose of part B above, approval is from the Chief Officer of SACFS or authorised delegate – i.e. the CFS Regional Prevention Officer.
3. There may be constraints under other legislation that need to be complied with, such as the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999.

3.10 Grazing

Background 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, including on roadsides. Roadside grazing can also be controlled by local councils under the *Local Government Act 1999*.

Grazing can be an acceptable form of roadside management in some situations, such as where exotic grasses like *Phalaris* have replaced native understorey and have created a fire hazard, however native grasslands may be difficult to distinguish from introduced grasses, and care must also be taken to avoid small or visually insignificant species such as annuals, orchids and other small native ground cover species.

Grazing of stock is not permitted on developed roadsides within the Alexandrina Council district however a significant number of undeveloped road reserves are licensed to adjoining landholders for grazing purposes subject to an annual permitting system.

Objectives

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

Guidelines – Grazing

Unmade Road Rental Permits

In assessing an application, Alexandrina Council will consider available vegetation data, see **Section 2**:

- Alexandrina Council may permit landholders to graze stock on unmade roads devoid of native vegetation.
- Grazing of stock will not be permitted on unmade road reserves with vegetation of ecological value of A, B or C, unless inspection of the unmade road indicates that there are native trees over exotic shrub and understorey only, in which case the decision to permit grazing will be at the discretion of Council's Environmental Project Officer and NVC approval may also be required.
- Where the unmade road to which the application relates has not yet been surveyed, the vegetation will be assessed by Council's Environmental Project Officer or other suitably qualified person prior to a decision being made.

Photo.
Cattle Grazing



- Landholders currently grazing stock on unmade road reserve areas require ongoing permission from Alexandrina Council via the annual permitting process.
 - Alexandrina Council plans to undertake an audit of all existing Unmade Road Rental Permits, refer **Section 4 – Management Actions**. Where survey data suggests that a rented unmade road contains vegetation of ecological value A, B or C a site inspection will be conducted by Council’s Environmental Project Officer or other suitably qualified person to re-assess the value of the vegetation present and make recommendations as to future permit conditions and/or revocation of the permit.
- Avoiding unnecessary clearance**
- Stock grazing on roadsides should be free of pest plants and diseases.
 - When assessing applications to undertaken grazing on unmade road reserves, particular care must be taken to identify and avoid plant communities of conservation significance and naturally open areas such as native grassland, sedgeland and wetlands.

CONSULTATION AND APPROVAL PROCEDURES FOR GRAZING OF ROADSIDES

Council Approval Requirements

- Alexandrina Council does not permit grazing of stock on developed roadsides.
- Any person wishing to graze stock on an unmade road must apply for an Unmade Road Rental Permit before doing so (refer **Appendix 7**). Permit applications will be assessed by Council’s Property Officer in consultation with the Environmental Project Officer.

NVC Approval Requirements

Clearance approval is required for any grazing of roadsides likely to cause damage to native roadside vegetation (other than incidental grazing associated with roadside stock movements – see **Section 3.11** below). This includes grazing on roadsides where:

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

Where grazing has historically occurred, then this may continue at the same frequency and duration without NVC approval, however, any change in grazing practice - change of stock, increase in frequency or duration of grazing and grazing of areas without any previous history of grazing- requires NVC approval.

Grazing on roadsides does not require approval where:

- no native vegetation is present, or
- there are native trees over exotic shrub and understorey species only and stock are not going to damage the trees via chewing, ringbarking or compaction.

3.11 Stock Movement on Roadsides

Background Information

The short-distance movement of stock on roadsides does occur within the more rural areas of the Alexandrina Council region. It is recognised as a necessary practice as a part of normal farm management. The longer-distance droving of stock on roadsides does not generally occur within the Alexandrina Council region.

Objectives

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

Guidelines – Movement of Stock

Avoiding unnecessary clearance

- The movement of livestock on roadsides that is part of normal farm management (i.e. from one section of a property to another) is permitted within the Alexandrina Council area without need for formal approval from Council. Stock must be kept moving at all times and should be free of pest plants and diseases.

- Where the movement of livestock is over a long distance, or where it occurs along roadsides identified as being part of Council's Roadside Marker System, prior permission should be sought from Alexandrina Council's Environmental Project Officer, who will consult with the relevant NRM Board and/or NVMU as appropriate.
- Movement or droving of stock along roadsides with ecological value A or B, RMS sites, roadsides containing known populations of threatened species, plant communities of conservation significance or naturally open areas such as native grassland and sedgeland, should be diverted where possible along roadsides containing vegetation of lesser value.
- If the roadside vegetation along a proposed stock route has not yet been surveyed and a relevant inquiry is received, Council's Environmental Project Officer or other suitably qualified person will conduct an inspection along the proposed route in order to make recommendations as to any necessary measures required to minimise potential damage to native vegetation.

Signage

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

CONSULTATION AND APPROVAL PROCEDURES FOR MOVEMENT OF STOCK ON ROADSIDES

Council Approval Requirements

- Council approval is not required for the movement of stock on roadsides if the stock are only being moved short distances as part of normal farm management and are to be kept moving at all times.
- Where the movement of livestock is over a long distance, or where it occurs along roadsides identified as being part of Council's Roadside Marker System, prior permission should be sought from Alexandrina Council's Environmental Project Officer, who will consult with the relevant NRM Board and/or NVMU as appropriate.

NVC Approval Requirements

No NVC approval is required if stock are to be kept moving at all times (to minimise incidental grazing and subsequent damage to native vegetation), and areas of native vegetation of particular conservation significance are avoided as much as possible. Council should be the first point of contact for any inquiries about the movement of stock on roadsides.

3.12 Recreational Use of Road Reserves

Background Information

Road reserves (both developed and undeveloped) can provide recreational opportunities such as walking, horse and/or bicycle trails. All of these activities have the potential to significantly disturb native vegetation if not properly managed.

The primary recreation trails within the Alexandrina Council area are sections of the Kidman (horse riding, cycling and walking), Heysen (walking) and Battunga Country (cycling and walking) trails. Development of additional walking, bicycle and/or horse trails on roadsides and/or unmade roads will be considered provided that certain principles and practices are adhered to (see guidelines below) and NVC approval is sought.

Alexandrina Council does not support the “off-road” use of roadsides and unmade roads by recreational vehicles (i.e. 4WDs and motorcycles) due to the extensive damage that can be caused to both vegetation and soils.

Objectives

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

Guidelines – Recreational Use

Proposals for new walking, bicycle and/or horse trails may be acceptable if the following principles are adhered to:

- Any new trails should be part of an overall district or regional trails plan.
- 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. When developing new trails, Council will have regard to the NAMO principals in **Appendix 6**.
- 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 should 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.

- Trails should not be established in an area known to be infested with *Phytophthora* so as to prevent its introduction to currently uninfected areas.
- Planned recreational trails along roadsides containing vegetation of or ecological value A or B, RMS sites, 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 as last preference Category C.
- If the roadside vegetation along the route of a planned recreational trail has not yet been surveyed, a suitably qualified person(s) will conduct an inspection to identify vegetation along the proposed trail route.
- Management plans should be prepared for all recreational trails addressing issues such as weed and pest animal control, disease prevention, erosion control and inclusion of an effective monitoring program,

Existing trails

- 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.

“Off-Road” Recreational Vehicle Use

- Inappropriate “off-road” use of Council roadsides and unmade roads by recreational vehicles (i.e. 4WDs and motorcycles) is a recurring issue in some areas of the Council district. In some instances, significant damage to native vegetation has occurred as a result.
- Where public access is not required to a road reserve being targeted for use by off-road recreational vehicles, Council may give consideration to excluding public traffic from that section of road reserve pursuant to Section 359 of the *Local Government Act 1999*. Priority will be given to excluding recreational vehicles from those road reserves with native vegetation of the highest ecological value.
- Prior to deciding whether or not to exclude public traffic from a road reserve, Council will consult at a minimum with all adjacent landowners. Any decision to undertake a more comprehensive level of public consultation will be made with regard to the requirements of Council’s Public Consultation Policy.

DPTI Ranking System for Recreational Trails

- DPTI has developed a ranking system (of 1-5) for roadsides included within an existing or proposed trail. A ranking of 1 means the road is integral to a trail and 5 is not significant to a trail network, see **Table 7**.
- The ranking system is primarily used by DPTI to assess the significance of a road closing order under the Roads Opening and Closing Act but is also relevant to the exclusion of public traffic pursuant to Section 359 of the Local Government Act 1999.

- Council should also consult with DPTI and have regard to this ranking when considering alternative uses of Council road reserves i.e. revegetation, granting of an Unmade Road Rental Permit etc.

Table 7.
DPTI Ranking System for roadside trails (existing or proposed)

Category	Recreational Access Significance of Road Reserves
1	The road reserve is integral to an existing marked trail
2	The road reserve has been identified for inclusion in the development of an existing trail or proposed trail
3	The road reserve provides possible future links for existing or proposed trails
4	The road reserve provides strategic links for the public to access land which is not linked to a marked trail
5	A road reserve with no recreational access significance

CONSULTATION AND APPROVAL PROCEDURES FOR RECREATIONAL TRAILS ON ROAD RESERVES

Council Approval Requirements

- Permission is required from Council to conduct any planned recreational event within a road reserve. All such proposals should be submitted to Council’s Property Officer who will consult with the Environmental Project Officer as required.
- Maintenance by others of existing recreational trails along road reserves requires the ongoing consent of Alexandrina Council (generally via Council approval of a long-term management plan).
- Where the development of a new recreational trail might involve the clearance of native vegetation, Council’s Infrastructure and/or Engineering Departments will consult with the Environmental Project Officer (EPO) during the planning phase. The EPO will advise whether consultation with and/or clearance approval from the NVMU is required.
- Alexandrina Council does not permit “off-road” recreational vehicles activities on roadsides and/or unmade roads. Any unlawful off-road activities within road reserve areas will be reported by Alexandrina Council to the South Australian Police, and if damage to native vegetation occurs, the Native Vegetation Council.

NVC Approval Requirements

NVC clearance approval is required for any trail development involving anything other than minor clearance of native vegetation.

3.13 Cultivation and Cropping

Background 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 should only ever occur on roadsides without any native vegetation present, and which are not adjacent to areas of remnant vegetation.

Whilst Alexandrina Council does not permit cropping and cultivation on developed roadsides, a significant number of unmade roads are licensed to adjoining landholders for cropping purposes pursuant to an annual permitting system.

Objectives

1. To avoid potential damage to roadside native vegetation from cultivation and growing of agricultural crops.

Guidelines – Cultivation and Cropping

Unmade Road Rental Permits

In assessing an application, Alexandrina Council will consider available vegetation data, see **Section 2**:

- Alexandrina Council may permit landholders to cultivate or crop in unmade road reserves devoid of roadside native vegetation.
- Cultivation or cropping will not be permitted on unmade road reserves with vegetation of ecological value of A, B or C.
- Where the unmade road to which the application relates has not yet been surveyed, the vegetation will be assessed by Council's Environmental Project Officer or other suitably qualified person prior to a decision being made.
- Landholders currently cropping in unmade road reserve areas require ongoing permission from Alexandrina Council via the annual permitting process.

- Alexandrina Council plans to undertake an audit of all existing Unmade Road Rental Permits, refer **Section 4 – Management Actions**. Where survey data suggests that a rented unmade road contains vegetation of ecological value A, B or C a site inspection will be conducted by Council's Environmental Project Officer or other suitably qualified person to re-assess the value of the vegetation present and make recommendations as to future permit conditions and/or revocation of the permit.

Spraying of Roadsides

- Unauthorised spraying of Council roadsides by adjacent agricultural landowners is a recurring issue in some areas of the Council district.
- Council is committed to working collaboratively with the regions primary producers to encourage more sustainable farming practices within the Alexandrina Council area, refer **EAP Strategy 4.2**.
- When investigating and responding to instances of unauthorised spraying of roadsides, Council staff may use a range of responses including (but not limited to):
 - writing to the adjacent landowner requesting that they cease and desist
 - requesting that the adjacent landowner rehabilitate the sprayed roadside
 - revegetating the sprayed roadside as part of Council's annual environmental works program
 - installing signage indicating that unauthorised clearance of native vegetation has taken place
 - report any unauthorised spraying of native vegetation in roadsides to the Investigation and Compliance Unit in DEWNR (see more information under Consultation and Approval Procedures on the following page).

CONSULTATION AND APPROVAL PROCEDURES FOR CULTIVATION AND CROPPING

Council Approval Requirements

- Alexandrina Council does not permit cultivation and cropping on developed roadsides.
- Any person wishing to undertake cultivation or cropping on an unmade road must apply for an Unmade Road Rental Permit before doing so (refer **Appendix 7**).
- Any person wishing to undertake weed control on a Council roadside, including the spraying of roadsides adjacent to agricultural crops, must obtain permission from Council before doing so. Relevant application forms are available on Council's website (refer **Appendix 7**).
- Applications will be assessed by Council's Property Officer in consultation with the Environmental Project Officer.

NVC Approval Requirements

NVC approval is required for cultivation or cropping on roadsides where native understorey or regenerating native vegetation is present.

Photo.

Cropped hay bales



3.14 Removal of Plant Material

Background Information

Plant material includes seeds, flowers, cuttings, living timber and dead timber. Roadside vegetation trimming undertaken by Alexandrina Council for the purposes of maintaining a safe road system is dealt with in **Sections 3.2 and 3.3** above. This section applies to other types of removal, including:

- collection of dead timber for firewood
- cutting of live timber for any purpose not dealt with in other sections of this RVMP
- cutting of *Melaleuca uncinata* (broom-bush) for brush fencing
- seed collection
- flower harvesting.

Objectives

1. To limit the extent of damage caused by removal of roadside native vegetation.
2. To ensure that only a sustainable amount of native vegetation is removed from roadsides.
3. To ensure that appropriate WHS practices are followed by those collecting plant material on Council roadsides.

Guidelines – Removal of Plant Material

Collection of Dead Timber

- Dead timber on Alexandrina Council roadsides is not controlled under the *Native Vegetation Act 1991*, except in the case of dead trees that have a circumference of 2m or more (measured at a point 300mm above the base of the tree) and which provide or have the potential to provide habitat for nationally listed threatened animal species. Dead trees of this nature are defined as native vegetation under Section 3(1) of the *Native Vegetation Act 1991*. Alexandrina Council controls the collection of dead timber on Council land under the *Local Government Act 1999*.
- Dead timber, both standing and fallen, provides cover and foraging places for native fauna and provides protection for young seedlings and small plants adapted to the sheltered conditions provided by fallen timber. 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.

- Dead timber should not be “tidied up” on roadsides, and removal is not permitted unless outlined as necessary for fuel reduction in the approved Fleurieu Interim Bushfire Management Area Plan (see Bushfire Hazard Reduction above in **Section 3.9**), to assist rabbit control, or to remove timber which is hazardous to traffic or fencing.

Cutting of Live timber

- Trimming of live timber on roadsides undertaken by Alexandrina Council for the purpose of maintaining a safe road system is dealt with in **Sections 3.2 and 3.3** above.
- Trimming of live timber on roadsides undertaken by SA Power Networks and other utility providers is dealt with in **Section 3.4** above.
- Any cutting of live timber on roadsides by other persons requires the prior approval of Alexandrina Council. Any cutting of live native timber outside the scope of guidelines in this plan also requires clearance approval under the *Native Vegetation Act 1991*.

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.
- In addition to Council approval requirement, a permit is also needed under the *National Parks and Wildlife Act 1972* and can be requested from the Permit Unit DEWNR (08) 8463 4841, or online at <http://www.environment.sa.gov.au>. The Permit Unit can also provide guidance on seed collection methods.
- The collection of seeds, cuttings or other specimens from native plants does not require consent from the Native Vegetation Council 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.
- The Alexandrina Council will give preference to seed collecting permit applications associated with local revegetation projects.



- Council's Tree trimming programs (for maintenance of safe clearance envelopes) and roadside slashing programs (for bushfire hazard reduction) will be undertaken in consultation with local revegetation groups to facilitate their community-based seed collection activities – Refer **Action 2.7.5** in Council's EAP.

Flower Harvesting

- The harvesting of native flowers from roadsides requires prior written approval from Alexandrina Council and clearance consent from the Native Vegetation Council. Alexandrina Council should be the first point of contact for any organisation or individual wanting to harvest native flowers from roadsides.
- In general, harvesting of roadside flowers, particularly for commercial purposes, is not favoured because of its impact on the vegetation and on the landscape amenity of the area.

CONSULTATION AND APPROVAL PROCEDURES FOR REMOVAL OF PLANT MATERIAL

Council Approval Requirements

- Public collection of roadside timber is not permitted within the Alexandrina Council district (refer Alexandrina Council Tree Management Policy).
- Any person wishing to collect plant material (including seeds or fruit) on Council land must send a written request to Council's Environmental Project Officer, detailing all proposed collection locations and in the case of native plant material, their permit number from DEWNR.
- All other removal of plant material from a roadside (developed or unmade) requires the prior written approval of Alexandrina Council. Relevant applications forms are available on Council's website (refer **Appendix 7**).

NVC Approval Requirements

Removal of native plant material from road reserves also requires clearance approval under the Native Vegetation Act 1991 in the following circumstances:

- removal of dead trees native to South Australia that have a trunk circumference of 2 metres or more (measured 300mm above the base of the tree) and provide or have the potential to provide habitat for nationally listed threatened animal species
- note that for this region, there are currently no nationally threatened fauna species that utilise hollows. However, check with a DEWNR Regional NRM Officer for any updates and for information on regional threatened fauna species that require hollows
- any cutting of live timber outside the scope of the guidelines in this RVMP
- the harvesting of native flowers, seed or fruit (particularly commercial harvesting) if substantial damage to native vegetation is likely as a result.

DEWNR Permit Requirements

A permit from the Department for Environment, Water and Natural Resources (DEWNR) is required to collect native plant material from public land in South Australia. Native plant material includes flowers, seeds, leaves, cuttings and any other part of the plant. See further details under guidelines above.

3.15 Overdimensional Vehicles

Background Information

The passage of over-mass and over-dimensional vehicles on Council roads is governed by the Heavy Vehicle National Law (HVNL). The National Heavy Vehicle Regulator (NHVR) establishes a single national system of regulation and laws for heavy vehicles over 4.5 tonnes gross vehicle mass, 19m long or 2.5m wide.

Under the HVNL, transport operators of certain oversize overmass vehicles wishing to travel on Council roads must apply to Council for a clearance certificate before applying to DPTI or to the NHVR for an oversize overmass vehicle permit.

In order to facilitate safe access for oversize overmass vehicles on Council roads, trimming of vegetation outside of the standard clearance envelope is sometimes required.

Objectives

1. To provide for the safe passage of over-dimensional vehicles on Council roads whilst ensuring minimum disturbance to roadside native vegetation.

Guidelines – Over-dimensional Vehicle Requests

- When assessing requests Council will seek to minimise clearance by recommending an alternative route if available. Where available, the route which involves least disturbance to native vegetation should be selected. Vegetation communities of high conservation significance should be avoided if at all possible.
- In areas of high conservation value (Categories A-C) any likely and/or suitable turn-around points should be identified so as to avoid or minimise damage to native vegetation.
- Pruning of branches within the required clearance envelope will be undertaken in accordance with AS4373 “Pruning of Amenity Trees” i.e. limbs will be pruned to the nearest growth point or collar outside the clearance envelope.
- Only authorised personnel are to be engaged to trim roadside vegetation.

CONSULTATION AND APPROVAL PROCEDURES FOR CLEARANCE ASSOCIATED WITH OVER-DIMENSIONAL VEHICLES

Council Approval Requirements

- Over-dimensional vehicle requests are submitted to and assessed by Council’s Infrastructure Department (refer **Appendix 7**).
- Internal consultation with Council’s Environmental Project Officer is not required for low impact clearance within the standard clearance envelope and/or minor clearance outside of the standard clearance envelope (with the exception of RMS sites).
- The officer responsible for inspecting the proposed route will consult with the EPO if anything more than minor clearance outside of the standard clearance envelope and/ or if any clearance within a RMS site is proposed. The EPO will then determine whether further consultation with and/or approval from the NVMU is required.
- See Section 3.2 and **Appendix 9** for description of standard clearance envelopes. Note that “minor clearance” is defined as very minor and localised clearance such as pruning of branches or removal of one or two saplings or shrubs known to be common in the area.

NVC Approval Requirements

Council’s EPO will liaise with the NVMU if anything more than minor clearance outside of the standard clearance envelope is required. If appropriate, the NVMU will provide approval pursuant to Regulation 5(1)(y).

3.16 Maintaining Biodiversity on Roadsides via Ecological Prescribed Burning

Background Information

Along some roadsides there is evidence of a steady decline of native vegetation condition 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), lack of natural regeneration and inappropriate fire regimes. Ecological prescribed burning may be proposed as a means of enhancing vegetation health or diversity in the longer term. Burning an area may be desirable to promote natural regeneration where species are declining.

Objectives

1. To ensure any ecologically prescribed burns achieve maximum biodiversity outcomes and avoid unintended impacts.

Guidelines – Ecological Prescribed Burning

Prescribed burning for ecological purposes requires careful planning and management. Using disturbance to maintain biodiversity (plants and associated fauna) can be a complex issue and proposals must be developed in consultation with the NVMU. Any proposed works of this nature must be carried out under a management plan that has been approved by the Native Vegetation Council.

Guidelines for ecological prescribed burning have been prepared by the NVC and can be sourced at: <http://www.environment.sa.gov.au/managing-natural-resources/native-vegetation/native-vegetation-checklist>

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 *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) matters also need to be addressed
- a logistic prescribed burn plan to be approved by SA Country Fire Service
- a monitoring program that will assist in the evaluation of the effects of fire on vegetation communities and for planning future adaptive management strategies.

CONSULTATION AND APPROVAL PROCEDURES FOR ECOLOGICAL PRESCRIBED BURNING

Council Approval Requirements

Any person or organisation wishing to conduct an ecologically prescribed burn on a roadside must obtain prior written consent from Council's Environmental Project Officer.

NVC Approval Requirements

Modification of native roadside vegetation for the maintenance of vegetation biodiversity using ecological prescribed burning under Regulation 5(1)(zi) or other disturbance methods requires clearance approval from the Native Vegetation Council. Seek advice from the NVMU at the beginning of the planning stage.



3.17 Protection of Native Vegetation of High Conservation Significance

Background Information

Roadsides may contain plants or vegetation types of high conservation significance. This includes species or vegetation communities listed as threatened at a national, state, or regional level and/or vegetation classed as Category A and B, see **Table 1** on page 15. It is important that these locations are identified, recorded and protected.

While all native vegetation on roadsides is protected and must not be cleared unless permitted by this RVMP or clearance approval has been granted, vegetation of high conservation significance requires:

- extra precautions (such as signage) to prevent accidental damage
- active management such as Bushcare work to prevent decline in quality, also see **Section 3.17**.

Alexandrina Council has assessed all of its roadside vegetation along developed roads and approximately 407km of its undeveloped road reserves through a series of roadside vegetation surveys, See **Section 2** and maps in **Appendix 3**.

The Alexandrina Council area contains 417.5km of developed roads and 91km of undeveloped road reserves with vegetation of ecological value A or B.

During the roadside vegetation surveys at least five nationally recognised threatened plant species, 23 (additional) species threatened at a state level and 41 species threatened at a regional level (AMLR, Murraylands and/or South East region) were recorded along roadsides within the Council area, see **Appendix 4**. Additional species of conservation significance, such as *Caladenia colorata* (Coloured Spider Orchid), may be present on our roadsides but were not visible at the time of survey. There were also at least eleven vegetation associations of conservation significance observed. This includes two vegetation communities listed as critically endangered threatened ecological communities at a national level under the EPBC Act: *E. odorata* Grassy Woodlands and Tussock Grasslands dominated by *Lomandra* spp.

Council has established a Roadside Marker System (RMS) so that areas of significant roadside vegetation are easily identifiable by Council staff, contractors, adjoining landowners and the general public. There are 351 sites within Council's RMS totalling 350.6km of roadside, see map in **Appendix 3**. Each site has a unique identification number and is marked with a small blue and white sign at either end, see **Figure 6** below.

An excel database of all Council RMS sites has been developed and is controlled by Council's Environmental Strategy Officer. A spatial layer identifying the location of all RMS sites is available on Council's GIS system.

Objectives

1. To identify, record and protect roadside native vegetation of high conservation significance.
2. To avoid and/or minimise the impact of Council operations on high conservation value roadside vegetation by improving management practices.

Guidelines – Protection of Vegetation of High Conservation Significance

Training of Council Staff and Contractors

- Alexandrina Council field staff undertook an internal training workshop on the requirements of Council's Roadside Vegetation Management Plan 2010-2015 in 2014.
- Training programs for all relevant Council staff and contractors, and the development of work procedures to ensure protection of high conservation value vegetation on roadsides will continue to be implemented. For further details see **Section 4 – Management Actions**.

Use of Survey Data

In order to avoid or minimise any loss or disturbance of roadside vegetation of high conservation significance, the roadside survey and RMS data (and associated maps – see **Appendix 3**) will be used by Alexandrina Council as follows:

- in planning road construction, road maintenance and any other relevant infrastructure works
- to assess any roadside permit applications submitted to Council, refer **Appendix 7**
- to inform assessment of Development Applications submitted to Council
- to assist in prioritisation of Council's environmental restoration works, see **Section 3.17** below.

CONSULTATION AND APPROVAL PROCEDURES FOR ACTIVITIES IN AREAS OF VEGETATION OF HIGH CONSERVATION SIGNIFICANCE

Council Approval Requirements

- Any Council activities impacting upon a RMS site (other than minor clearance within the existing clearance envelope) or on native vegetation within an unmade road reserve requires consultation with Council's Environmental Project Officer who will determine whether or not NVC clearance approval is required.
- Subject to the other sections of this RVMP, any public activity involving the planting, interference or removal of vegetation on a roadside (developed or unmade) requires prior written approval from Council. Relevant application forms are available on Council's website, refer **Appendix 7**.

NVC Approval Requirements

Unless clearance is considered exempt as described elsewhere in this RVMP, any activity involving clearance of native vegetation in areas of high conservation significance requires clearance approval from the Native Vegetation Council.

Figure 6.
Roadside Marker System
Sign



3.18 Restoration of Roadside Vegetation

Background Information

Alexandrina Council is committed to the targeted restoration of roadside vegetation. We recognise the importance of maintaining and enhancing the condition of roadside vegetation for habitat value, the protection of biological diversity and threatened species, to improve the amenity of the area, reduce the risk of soil erosion and soil salinity, improve water quality, help suppress weeds and reduce the risk of fire.

Roadside vegetation within the Alexandrina Council area varies from Category A with very high conservation value to Category E with low conservation value, see **Section 2**. When determining our annual environmental works program, Council gives first priority to roadsides containing remnant vegetation of high conservation significance (i.e. Category A and B roadsides and/or RMS sites containing threatened species and ecological communities).

As of 2015, approximately 60km of roadside vegetation is being actively managed by Council to maintain or enhance biodiversity. There are also a number of other roadside locations across the District being actively managed and/or revegetated by our third-party conservation partners including NRM Boards, Trees For Life, GWLAP and local conservation groups as well as by adjacent landowners. Over time, Council aims to increase the extent of our on-ground environmental works program and our support for third-party conservation partners, such that the majority of remnant vegetation on Council land is being actively managed for conservation, refer **EAP** p. 31.

During the survey of undeveloped road reserves undertaken during 2000-2004, a number of different categories of potential management sites were identified, see map in **Appendix 3**. Council will use this data to prioritise future on-ground environmental works within our unmade road network.

Objectives

1. To prevent further degradation of native vegetation within road reserves giving high priority to rehabilitation works along roadsides containing native vegetation of high conservation significance.
2. 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.

Guidelines – Restoration of Roadside Vegetation

Roadside rehabilitation and restoration

- Each year, Alexandrina Council will undertake a program of roadside environmental works which may include activities such as pest plant and animal control, fencing and revegetation. The extent of our environmental works program is constrained by the availability of limited resources and hence priority is given to maintaining and enhancing areas of high conservation value.
- Revegetation programs on rural roadsides must use local native species and should use seed collected from the local area (preferably within 10km of the site). Ensure at planning stage the site is not a fire management zone identified in the current Bushfire Management Area Plan or equivalent.
- Natural regeneration should be encouraged and protected. Revegetation should not adversely affect areas undergoing natural regeneration.
- Revegetation should attempt to replicate the natural vegetative structure and species composition. Particular care is needed in areas which would have been naturally open (i.e. areas possessing few if any tree or shrubs such as open grassland, sedgeland and wetlands). It may be inappropriate to plant trees and shrubs in these sites.
- Applications to restore and/or revegetate Council roadsides will be assessed by Council's Environmental Project Officer in consultation with the Fire Prevention Officer and Engineering Department. When assessing such applications, Council will consider a range of factors including:
 - safety of road users and set-backs required to ensure maintenance of safe clearance envelope
 - presence of services (power, water, sewer, telecommunications)
 - any future plans for road widening or associated road infrastructure
 - the pre-European vegetation community
 - responsibility for ongoing monitoring and maintenance of revegetated areas.

Database

- Areas of roadside being actively managed by Council to maintain and enhance biodiversity are recorded on Council's GIS system. At a minimum, this layer should be updated annually to capture any new additions to Council's environmental works program.

Photo.

Roadside weeds - before



Photo.

Dr Lee Hammerstein -
after clearance of roadside
weeds



- Roadside sites being rehabilitated and/or revegetated by others should also be recorded on Councils GIS System. This GIS layer is yet to be developed, see **Management Actions, Section 4.**
 - Residents adjacent to good roadside vegetation should select garden plants with a low potential to spread, or consider using local native species instead.
 - Council will investigate and where possible take compliance action in respect of illegal dumping of garden and other waste on our roadsides.
- Garden Escapes**
- 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.

CONSULTATION AND APPROVAL PROCEDURES FOR RESTORATION OF ROADSIDE VEGETATION

Council Approval Requirements

All environmental restoration, revegetation and other planting activities undertaken on roadsides require prior written approval from Council. Relevant application forms are available on Council's website, refer **Appendix 7.**

NVC Approval Requirements

Consultation with the NVMU is encouraged where revegetation activities are proposed within open areas of native vegetation (i.e. areas possessing few if any tree or shrubs) as some areas of the State naturally had areas of open grassland, sedgeland and wetland. It is important that any revegetation works should attempt to replicate the natural vegetative structure and species composition.



4. Management Actions

This section outlines actions with a program for implementation that will further enhance management of roadside vegetation in the Alexandrina Council area. The actions below are listed in the order that the Management Issues are addressed in **Section 3**.

Each action has been prioritised using the following timeframes:

- **High Priority** should be completed within two years.
- **Medium Priority** should be completed within five years.
- **Low Priority** should be completed within ten years or re-assessed within this timeframe.
- **Ongoing actions**, which will become effective immediately.

Activity	Action Statement	Priority	Page No.	EAP Action
Section 2.2 - Roadside Vegetation Surveys				
Undeveloped Road Vegetation Survey	For undeveloped road reserves categorised as 'survey pending', undertake on-ground survey of overall ecological value and update database.	Low	15	2.1.1
Section 3.2 - Roadside Vegetation Maintenance				
Review of Roadside Vegetation Maintenance	Undertake survey in order to develop revised tree trimming program for achieving and maintaining standard clearance envelopes: <ul style="list-style-type: none"> • Design and conduct mobile data collection project. Ideally the survey should collect data on levels of woody weed infestation as well as data relevant to achievement of clearance envelopes (i.e. width of travel way, width of shoulder, current vegetation setback, vegetation density). • In conjunction with existing vegetation data (see Section 2 and Appendix 3) and road hierarchy classification (see Appendix 5), analyse clearance envelope data to develop strategies for managing regrowth. In some cases NVC approval may be needed i.e. where regrowth is more than 5 years old. • Management options (particularly on high conservation value roadsides) should have regard to the NAMO principles and could include: <ul style="list-style-type: none"> • removal of woody weeds • incremental pruning over a number of years • reducing width of carriageway. • Apply for clearance approval where required. Forward planning is required to identify major reseal projects where clearance exceeding 5m high clearance envelope may be required. • Review and update tree trimming contract. • Review Section 3.2 and Appendix 9 of this RVMP in light of revised tree trimming program and if changes are required, resubmit to NVMU for endorsement. 	High	25	2.6.1

Activity	Action Statement	Priority	Page No.	EAP Action
Improved maintenance practices – cost/benefit analysis	<p>Undertake a cost-benefit analysis on potential improvements to Council road maintenance practices on roads with high conservation value vegetation and incorporate adopted changes into relevant contractual documents and SOPs. Such practices could include:</p> <ul style="list-style-type: none"> • using “belly-dumpers” on high value roads to avoid overhead clearance of vegetation • mulching vegetation trimmings onto the truck as opposed to the side of the road to improve functionality of diversion drains and reduce fuel loads • spray weed growth within diversion drains early in growing season to improve drain performance and to prevent and/or minimise the need for mechanical clearance and • improve grading practices on unsealed roads such as grading to the centre and collecting spoil for removal and disposal away from native vegetation and watercourses rather than windrowing soil onto the side of the road smothering native vegetation and introducing weeds. 	Medium	-	2.6.1
Section 3.5 – Pest Plants and Animals				
Roadside Woody Weed Mapping	Undertake roadside woody weed mapping in conjunction with tree trimming survey, see Section 3.2 above. Lower priority if not undertaken in conjunction with tree trimming survey.	High	26, 31	2.1.2
Section 3.6 – Plant Diseases				
Phytophthora	Use Council’s existing GIS layer to develop and implement a SOP for Phytophthora management and ensure all relevant staff and contractors are appropriately trained. Incorporate known and suspected Phytophthora sites into checklist for assessing roadside permit applications and provide relevant information materials and guidelines to adjacent landowners.	High	35	2.6.4
Section 3.9 – Bushfire Hazard Reduction				
Bushfire Area Management Plan	Ensure that Council’s environmental officers are consulted and involved in development of the Fleurieu Bushfire Management Area Plan and that bushfire hazard reduction activities to be conducted on Category A-C roadsides seek to minimise damage to native vegetation.	High	41	NA
Section 3.13 Cultivation and Cropping				
Agricultural spraying of roadsides	Develop education, management and compliance response to spraying of roadsides by adjacent agricultural landowners	Medium	49	4.2.6
Section 3.16 - Protection of Native Vegetation of High Conservation Significance				
Roadside Marker System	Develop criteria for inclusion of sites in the Roadside Marker System. Review current sites against these criteria and remove any ineligible sites as required.	High	55	2.6.2
RMS – New Sites	<p>Review following sites not currently included in the RMS and provided they meet criteria developed above, incorporate into the RMS:</p> <ul style="list-style-type: none"> • all sites of Ecological Value A and B not currently included in the RMS and • all potential sites (including community-nominated sites) identified on the RMS To-Do List. 	Medium	55	2.6.2

Activity	Action Statement	Priority	Page No.	EAP Action
Maintenance of RMS	Maintain, action and review internal list of RMS maintenance actions (RMS To-Do List).	Ongoing	55	2.6.2
Work Procedures	Formalise and document internal referral process for Council activities affecting native vegetation on roadsides (i.e. via Works Order process)	High	55	2.6.2
Section 3.17 - Restoration of Roadside Vegetation				
Prioritisation of roadside works program	Work with Council's Environmental Advisory Group to develop and implement a landscape scale vision for buffering and connecting high priority biodiversity assets within the region by undertaking works on Council land. Priority should be given to undertaking work on roadsides and unmade roads of high conservation significance (i.e. Category A and B).	Medium	57	2.3.1 4.4.1
Revegetation Species Lists	Develop a process for community members and Council staff wishing to undertake revegetation on roadsides. The process is to include a site assessment, by a suitably qualified person, and checking of pre-European mapping to establish appropriate vegetation type. And the development of an appropriate species list.	High	57	2.3.4 4.4.6
GIS Data	Update Council's GIS system so it includes layers identifying closed roads, community revegetation/ restoration sites and Council revegetation/ restoration sites, including those on roadsides.	Medium	57	2.1.2
Community Awareness	Promote community awareness of roadside vegetation management by inclusion of relevant information on Council's website. This should include copies of relevant application forms, a description of the RMS and contacts for local community conservation groups.	High	57	4.4.6
Community Involvement	Advise adjacent landowners of purpose of RMS and encourage them to participate in "Adopt a Roadside Marker" scheme.	Low	57	2.6.2 4.4.2
Council Procedures and Approval Processes				
Training	Ensure all relevant Council staff and contractors are aware of the RVMP and RMS and receive annual training on how to apply approval processes.	Ongoing	55	2.6.1 2.6.2
Council Approval Processes	Review and update Council's permitting framework applicable to: <ul style="list-style-type: none"> • Tree removal requests • Environmental works on Council land, and • Alteration of a road. Update Appendix 7 of this RVMP to reflect any changes to Council's approval processes.	High	88	2.6.1
Audit of Unmade Roads	Undertake audit of unmade roads: <ul style="list-style-type: none"> • Audit existing Unmade Road Rental Permits against available vegetation data – should permit continue or be revoked? • Audit unpermitted roads – are any unauthorised activities occurring that require compliance action or issuing of a new Unmade Road Rental Permit? • Unmade roads to be allocated individual asset number and Dekho updated to include GIS layer of Unmade Road Rental Permits. • Review process for assessing new Unmade Road Rental Permit applications to ensure consideration of available vegetation data. 	Medium	-	2.1.1 2.1.2 2.6.1
Environmental incident reporting	Formalise process for reporting of environmental incidents i.e. for recording and reporting unauthorised clearance of native vegetation on Council land. This will include reporting any incident to the Investigation and Compliance Unit, DEWNR. Information available at: http://www.environment.sa.gov.au/managing-natural-resources/compliance/report-an-offence	High	-	2.6.1
GIS Data	Create a consolidated "Roads" map on Dekho containing all layers relevant to the management and maintenance of Council roads. Report the incident to the Investigation and Compliance Unit in DEWNR" www.environment.sa.gov.au/managing-natural-resources/compliance/report-an-offence	Medium	-	-



5. References

- Alexandrina Council (2014a).** Alexandrina Council Environmental Action Plan 2014-2018. Alexandrina Council, Goolwa, South Australia. www.alexandrina.sa.gov.au/eap
- Alexandrina Council (2014b).** Alexandrina Council Community Strategic Plan 2014-23. Alexandrina Council, Goolwa, South Australia. <http://www.alexandrina.sa.gov.au/webdata/resources/files/2014-23%20Our%20Community%20Strategic%20Plan.pdf>
- Alexandrina Council Policies and Procedures:** <https://www.alexandrina.sa.gov.au/page.aspx?u=2174>
- ARRB Transport Research. Unsealed Roads Manual: Guidelines to Good Practice (2009)**
- Guimmarra, G. (2000).** Unsealed Roads Manual – Guidelines to Good Practice, ARRB Transport Research Ltd.
- ARRB Transport Research (2001).** Environmental Practices for Rural Sealed and Unsealed Roads.
- Australian Standards (2007).** AS 4373 - Pruning of amenity trees. Australian Standards, Sydney, Australia.
- Austroads, (2010).** **Rural Road Design: A Guide to the Geometric Design of Rural Road.**
- Austroads publications relating to Road design:**
URL: <https://www.onlinepublications.austroads.com.au/>
- Breckwoldt, R. and others (1990).** Living Corridors – Conservation and Management of Roadside Vegetation. Greening Australia, Canberra, Australia.
- Cooke, B.D. (1981).** Rabbit control and the conservation of native mallee vegetation on roadsides in South Australia. *Aust. Wildl. Res.*, 8, 627 – 36.
- EBS Ecology (2013).** Alexandrina Council Roadside Marker System Audit. Report to Alexandrina Council. EBS Ecology, Adelaide.
- Hyde, M.K. (1997).** A Survey of the Remnant Roadside Vegetation on the Fleurieu Peninsula South Australia, Volume One, Yankalilla, Victor Harbour and Port Elliot/Goolwa, Wallowa Mallee Research, Blackwood.
- Hyde, M.K. (1998).** A Survey of the Remnant Roadside Vegetation on the Fleurieu Peninsula South Australia, Volume Two Strathalbyn, Wallowa Mallee Research, Blackwood.
- Hyde, M.K. (1999).** A Survey of the Remnant Roadside Vegetation on the Fleurieu Peninsula South Australia, Volume Three, ex-Willunga Portion of Alexandrina Council, Wallowa Mallee Research, Blackwood.
- Palmer, D., and Lewis, S. (1987).** Mapping of Roadside Vegetation in South Australia. Department of Environment and Planning, South Australia.
- Pickett, M. and Mallen, N. (2002).** Alexandrina Council Undeveloped Road Reserve Management Planning Project – Road Reserve Survey. Unpublished report on a Natural Heritage Trust project, prepared for the Alexandrina Council, Goolwa, South Australia.
- Pickett, M. and Mallen, N. (2004).** Alexandrina Council Undeveloped Road Reserve Management Planning Project – Supplementary Road Reserve Survey 2003-2004. Unpublished report prepared for the Alexandrina Council, Goolwa, South Australia.
- Phytophthora Technical Group (2006).** Phytophthora Management Guidelines. Government of South Australia, Australia. (Online, accessed 5th May 2008).
URL: <http://www.environment.gov.au/biodiversity/invasive/publications/p-cinnamomi.html>
- Roadside Vegetation Committee (1978).** The role and objectives of the Roadside Vegetation Committee. Unpublished Document. Adelaide.
- Saunders, D.A., and Hobbs, R.J. (1991).** Nature Conservation 2: The Role of Corridors. Surrey Beatty and Sons, Chipping Norton, NSW, Australia.
- Stokes, A.L., Heard, L.M.B., Carruthers, S. and Reynolds, T. (2006).** Guide to Roadside Vegetation Survey Methodology in South Australia. Draft Report. Department for Environment and Heritage, Adelaide. Working Document.
On DEWNR website (see "Roadside Vegetation Manual"):
URL: http://www.environment.sa.gov.au/files/89d4a70d-e24d-44f5-aded-9e3001188ccd/roadside_manual.pdf
- Transport SA Environmental Code of Practice for Road Maintenance.**
- Transport SA (1997).** Environmental Code of Practice for Construction: Road, Bridge and Marine Facilities.
- Walling, E. (1952).** Country Roads – The Australian Roadside. Reprinted in 1985, by Pioneer Design Studio, 31 North Road, Lilydale, Victoria, Australia.



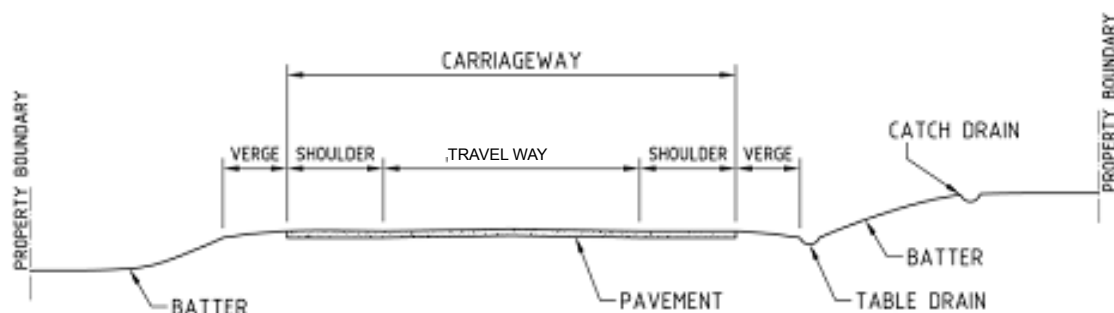
6. Abbreviations and Definitions

Abbreviations

AMLR	Adelaide and Mount Lofty Ranges
DEWNR	Department of Environment, Water and Natural Resources
DPTI	Department of Planning, Transport and Infrastructure
EAP	Alexandrina Council Environmental Action Plan
LGA	Local Government Association
NRM	Natural Resources Management
NVMU	Native Vegetation Management Unit
NVC	Native Vegetation Council as established by the Native Vegetation Act, 1991.
RMS	Roadside Marker System
RVMP	Roadside Vegetation Management Plan
SAMDB	South Australian Murray - Darling Basin

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):



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, 2010).

Catch drain – A surface channel constructed along the high side of a road or embankment, outside the batter to intercept surface water (Austroads, 2010).

Clearance – From the *Native Vegetation Act 1991*, means:

- the killing or destruction of native vegetation
- the removal of native vegetation
- the severing of branches, limbs, stems or trunks of native vegetation
- the burning of native vegetation
- 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 6mm 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, 2010).

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.

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
- 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
- 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
- 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”.

Low Impact Clearance - clearing of vegetation by slashing, rolling and chainsaw compared to High Impact Clearance such as bulldozing.

Minor Clearance - Very minor and localised clearance, such as pruning of branches or removal of one or two saplings or shrubs known to be common in the area.

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:
 - A) the River Murray Act 2003, or
 - B) the Water Resources Act 1997, or
 - C) 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.

Pavement – That portion of a road designed for the support of, and to form the running surface for, vehicular traffic (Austroads, 2010).

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, 2010).

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
- 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, and includes part of a road.

Roadside – Is defined as 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.
- 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, 2010).

Sight Triangle – The area of land between two intersecting roadways over which vehicles on both roadways are visible to each driver (Austroads, 2010).

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.

Table 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, 2010).

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

Travel way – That portion of a carriageway ordinarily assigned to moving traffic, and exclusive of shoulders and parking lanes (Austroads, 2010).

Traffic Lane – A portion of the carriageway allocated for the use of a single line of vehicles. (Austroads 2010)

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 which 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, 2010).

Appendix 1 – Importance of Roadside Vegetation and Threats

Native roadside vegetation is important for a variety of reasons. From a conservation perspective, it often has significant value, as much of the native vegetation within the State has been removed or highly disturbed. In some areas roadsides support virtually the only remaining examples 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”.

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

1. 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. Roadsides heavily infested with weeds can be a threat to adjacent properties and may increase wildfire risk.
- Native vegetation on roadsides can provide valuable shelter for livestock and crops in adjacent 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 (‘farmers helpers’) are commonly found on native vegetation.

2. Conservation benefits

- Substantial areas of native vegetation can still be found along roadsides even in highly modified areas of the state. In some areas, native vegetation in road reserves is virtually the only remnant of the original vegetation.
- For the most part, roadsides are areas that have never been grazed or cultivated, and therefore may contain plant species – often threatened - that aren’t found in the surrounding scrub areas.
- 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.
- Roadside trees can be very old and contain resources (e.g. hollows) less common in younger surrounding vegetation.
- Roadside vegetation can also provide an important seed source for revegetation projects.

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

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

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

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.

3. Social benefits

- In areas that have been extensively cleared, 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 1952.
- 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.
- Roadside vegetation can be used as an educational tool to highlight to the general 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”.

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.

Examples of the types of threats to native vegetation on roadsides include:

- 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
- 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
- senescence (old age).

These activities can occur for a number of reasons, but can be grouped into four categories, each 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 fencelines by adjacent landholders, or 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
- **inaction** – e.g. weeds and pests spread over time if not actively controlled.

¹Walling, E. (1952). *Country Roads – The Australian Roadside*. Reprinted in 1985, by Pioneer Design Studio, 31 North Road, Lilydale, Victoria, Australia.
²Roadside Vegetation Committee (1978). *The role and objectives of the Roadside Vegetation Committee*. Unpublished Document. Adelaide.

Appendix 2 – Relevant Actions with Alexandrina Council’s EAP 2014-18

Alexandrina Council’s Environmental Action Plan (EAP) describes in detail what Council will do over the four year period from 2014-2018 to deliver on the community’s aspiration to “Thrive in Clean Green Futures” see **Section 1.4.2** above for further details.

The table below lists the EAP actions specifically applicable to Council’s management of roadside vegetation. Actions in the EAP are prioritised according to timeframe: Short Term = 2014/15, Medium Term = 2015/16 and 2016/17, Long Term = 2017/2018.

EAP Actions	Description	Responsibility	Timeframe	Relevant Section(s) within this RVMP
2.1.1	Build on existing work, to ensure that all land parcels under Council’s care and control on which remnant vegetation is located have been identified, surveyed, and prioritised for on-ground works (including reserves, unmade road reserves and roadside marker sites). Surveys will need to be staged over time in accordance with available resources.	Environmental Strategy Officer/ Environmental Project Officer	Ongoing	2.2 Roadside Vegetation Surveys
2.1.2	Continually improve the capacity of Council’s GIS system to record and map data about the presence, condition and management of biodiversity on Council land.	Environmental Strategy Officer/Asset GIS Coordinator	Ongoing	4.17 Restoration of Roadside Vegetation
2.2.3	Continue to collaborate with AMLRNRM and SAMDBNRM to develop annual plans of on-ground roadside works which prioritise high conservation value sites and declared weed species.	Environmental Project Officer	Ongoing	4.5 Pest Plant and Animal Control 4.17 Restoration of Roadside Vegetation
2.3.1	Develop and begin to implement a landscape scale vision for buffering and connecting high priority biodiversity assets within the region by undertaking works on Council land.	Environmental Strategy Officer/ Environmental Project Officer	Medium Term	4.17 Restoration of Roadside Vegetation
2.6.1	Ensure the Roadside Vegetation Management Plan reflects current best practice, is supported by appropriate operational policies and procedures and contractual terms, and that all relevant staff and contractors are trained in its use.	Environmental Strategy Officer/ Environmental Project Officer	Short term	All
2.6.2	Maintain the existing Roadside Marker System and ensure that it is supported by appropriate operational policies and procedures and that all relevant field staff and contractors are trained in its use.	Environmental Strategy Officer/ Relevant Managers	Short term	4.16 Protection of Native Vegetation of High Conservation Significance
2.6.4	Develop and implement operational policy and procedures for phytophthora management and ensure all relevant staff and contractors are appropriately trained.	Environmental Strategy Officer/ Relevant Managers	Short term	4.6 Plant diseases
2.7.5	Seek to facilitate community seed collection on Council roadsides whilst also ensuring that Council’s annual roadside slashing program can proceed in a timely manner.	Environmental Project Officer/Team Leader Community Safety	Ongoing	4.9 Bushfire Protection 4.14 Removal of Plant Material

Appendix 3 – Roadside Vegetation Survey Maps



OVERALL ECOLOGICAL SIGNIFICANCE DEVELOPED ROADS

Roadside Vegetation Survey
(Hyde, 1997 - 1999; DEWNR, 1998 - 2008)

DRAFT

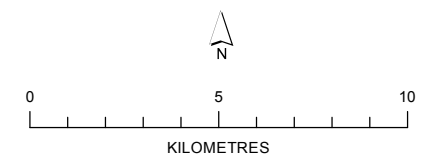
Legend

OVESIGCODE

- A: Contains a high priority vegetation association in excellent or near excellent condition
- B: Contains a high priority vegetation association in moderate condition or a lower priority association in excellent condition
- C: Contains a high priority vegetation association in poor condition or a lower priority vegetation association in moderate condition
- D: Contains limited native vegetation in poor condition
- E: Very little or no native vegetation present
- Nil conservation rating (Bare ground and/or Builtup; Planted or naturalised exotic species)

Other Features

- NPWSA Reserve
- Heritage Agreement
- Native Vegetation
- Orchard/Vineyard
- Plantation (Hardwood/Softwood)



Roadside data shown on this map was collected using the Roadside Vegetation Survey (RVS) Methodology developed by the Department for Environment and Heritage (now DEWNR), and also a closely related (but pre-dating) version of the RVS (spatial data was recorded directly on to 1:50,000 scale topographic/cadastral maps). Attribute data was initially stored at the Geographic Analysis and Research Unit of the Department of Transport, Urban Planning and Arts. Alexandrina Council holds a copy of all data.

Roadside widths have been exaggerated for display purposes.

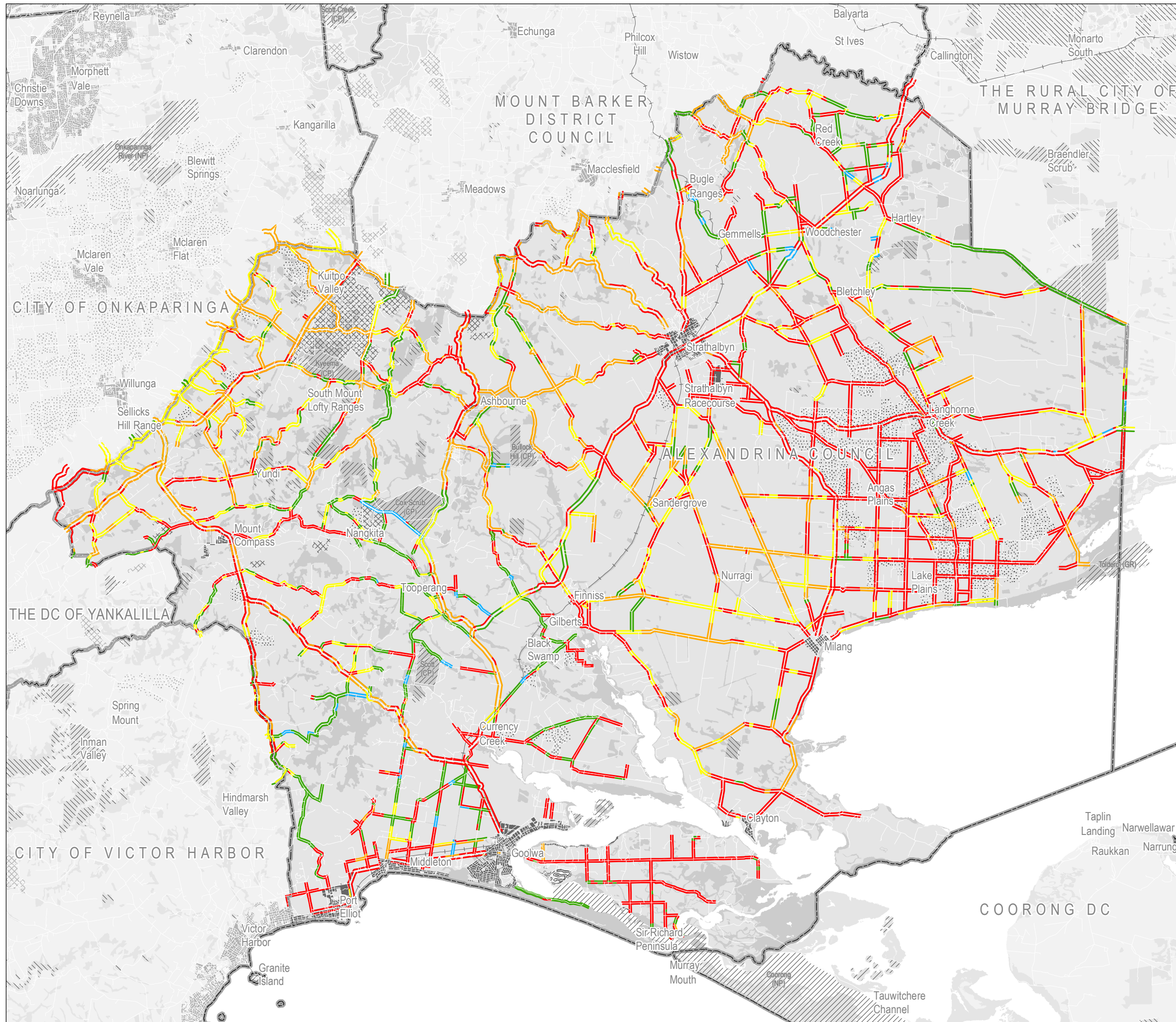
Produced by PIRSA Spatial Information Services, 25/09/2015
L13, 25 Grenfell Street, Adelaide, 5000
www.pir.sa.gov.au

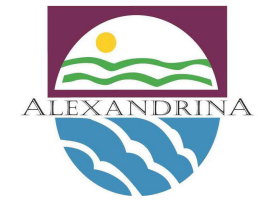
Data Source NPWSA Reserves, Heritage Agreements, Railways, Roads and Local Government Area boundaries supplied by the Department of Environment, Water and Natural Resources. Roadside vegetation survey data supplied by Alexandrina Council (Hyde, 1997 - 1999; DEWNR, 1998 - 2008).

Coordinate System GDA 1994 MGA Zone 54
Projection Transverse Mercator
Datum GDA 1994

DISCLAIMER:
Rural Solutions SA and its employees do not warrant or make any representation regarding the use, or results of the use, of the information contained herein. Rural Solutions SA and its employees expressly disclaim all liability or responsibility to any person using the information or advice.

© Commercial in Confidence Rural Solutions SA 2015





OVERALL ECOLOGICAL SIGNIFICANCE UNDEVELOPED ROADS

Undeveloped Road Reserve Vegetation Survey
(Pickett and Mallen, 2000 - 2004)

Legend

Overall Significance Category

- A: Contains native vegetation in excellent condition (12.6 km)
- B: Contains significant vegetation in moderate condition or less significant vegetation in excellent condition (78.5 km)
- C: Contains degraded significant vegetation or less significant vegetation in moderate condition (116.6 km)
- D: Contains limited native vegetation in poor condition (48.3 km)
- E: Very little or no vegetation present (139.5 km)
- No data for segment (e.g. developed road, no underlying native vegetation)

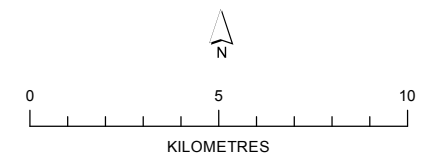
Undeveloped Road - Survey Pending

On-ground survey recommendation from original desktop analysis

- Yes (238.1 km)
- Partial (61.6 km)

Other Features

- NPWSA Reserve
- Heritage Agreement
- Native Vegetation
- Orchard/Vineyard
- Plantation (Hardwood/Softwood)



Undeveloped road reserves classified as 'Survey Pending' were generated with reference to aerial photographs. All other undeveloped road reserves were surveyed on-ground using a modified version (more appropriate to surveying unmade road reserves) of the Roadside Vegetation Survey Methodology developed by the Department for Environment and Heritage (now DEWNR). Survey data was recorded on foot using handheld GPS units. Alexandrina Council holds a copy of all data.

Undeveloped road reserve categories have been offset for display purposes.

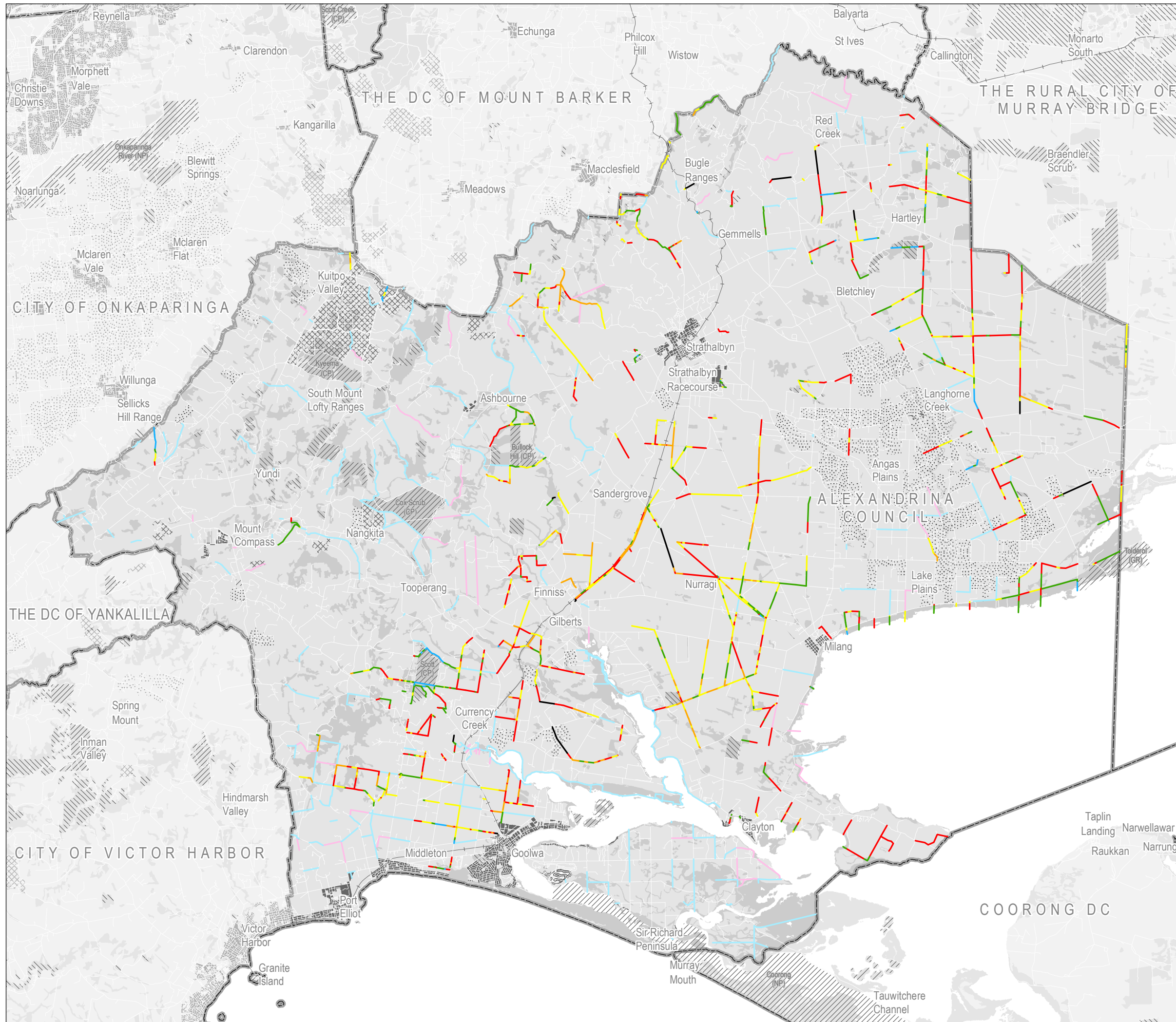
Produced by PIRSA Spatial Information Services, 24/07/2015
L13, 25 Grenfell Street, Adelaide, 5000
www.pir.sa.gov.au

Data Source NPWSA Reserves, Heritage Agreements, Railways, Roads and Local Government Area boundaries supplied by the Department of Environment, Water and Natural Resources. Undeveloped road reserve vegetation survey data supplied by Alexandrina Council (Pickett and Mallen, 2004).

Coordinate System GDA 1994 MGA Zone 54
Projection Transverse Mercator
Datum GDA 1994

DISCLAIMER:
Rural Solutions SA and its employees do not warrant or make any representation regarding the use, or results of the use, of the information contained herein. Rural Solutions SA and its employees expressly disclaim all liability or responsibility to any person using the information or advice.

© Commercial in Confidence Rural Solutions SA 2015



These are potential threatened vegetation associations based on their dominant overstorey species, structure and understorey type. An assessment to determine if they meet the criteria required for them to be considered a vegetation association listed on the Provisional List of Threatened Ecosystems of South Australia and/or the EPBC Act List of Threatened Ecological Communities has not been undertaken.

Roadside data shown on this map was collected by using a drive-by rapid assessment technique developed by EBS Ecology. Survey data was recorded using handheld GPS units (accuracy +/- 3m). Alexandrina Council holds a copy of all data.

DRAFT - MAP TEXT TO BE UPDATED

Produced by PIRSA Spatial Information Services, 6/10/2015
 L13, 25 Grenfell Street, Adelaide, 5000
 www.pir.sa.gov.au
 Data Source NPWSA Reserves, Heritage Agreements, Railways, Roads and Local Government Area boundaries supplied by the Department of Environment, Water and Natural Resources. Roadside vegetation survey data supplied by Alexandrina Council (EBS, 2015).
 Coordinate System GDA 1994 MGA Zone 54
 Projection Transverse Mercator
 Datum GDA 1994

DISCLAIMER:
 Rural Solutions SA and its employees do not warrant or make any representation regarding the use, or results of the use, of the information contained herein. Rural Solutions SA and its employees expressly disclaim all liability or responsibility to any person using the information or advice.

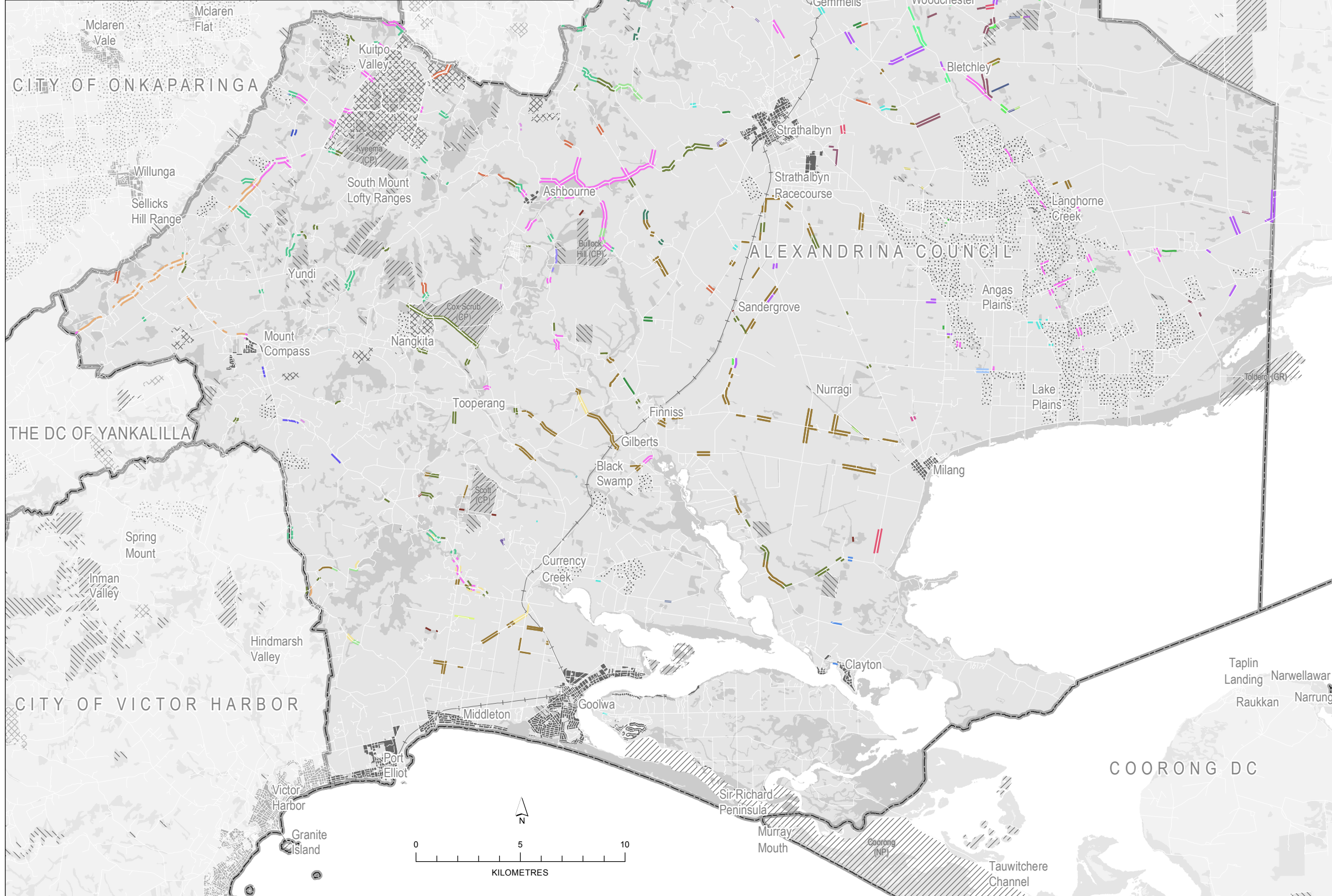
© Commercial in Confidence Rural Solutions SA 2015



LOCATION OF THREATENED VEGETATION ASSOCIATIONS DEVELOPED & UNDEVELOPED ROADS

Roadside Vegetation Survey
 (Hyde, 1997 - 1999; DEWNR, 1998 - 2008; Pickett and Mallen, 2000 - 2004)

DRAFT



Legend

STATE THREATENED - Potentially included on the Provisional List of Threatened Ecosystems of South Australia

- Allocastraria verticillata / Melaleuca lanceolata Woodland with native grassy understorey
- Allocastraria verticillata Woodland
- Allocastraria verticillata Woodland with native grassy understorey, +/- Lomandra effusa
- Banksia marginata Shrubland
- Callitris gracilis, Eucalyptus spp. Woodland/Mallee
- Callitris preissii (gracilis) Forest/Woodland with grassy understorey
- Callitris preissii (gracilis) Low Open Woodland
- Eucalyptus camaldulensis Woodland
- Eucalyptus camaldulensis Woodland over Acacia paradoxa with native grassy understorey
- Eucalyptus camaldulensis Woodland with Acacia paradoxa understorey
- Eucalyptus camaldulensis Woodland with Lignum and chenopod understorey
- Eucalyptus camaldulensis, E. leucoxylen +/- E. spp. Woodland
- Eucalyptus fasciculosa / Eucalyptus leucoxylen Woodland
- Eucalyptus fasciculosa / Eucalyptus leucoxylen Woodland with heath understorey
- Eucalyptus fasciculosa Forest/Woodland with grassy understorey
- Eucalyptus fasciculosa Woodland
- Eucalyptus fasciculosa Woodland with native grassy understorey, +/- Acacia paradoxa
- Eucalyptus leucoxylen / Eucalyptus odorata Woodland
- Eucalyptus leucoxylen / Eucalyptus odorata Woodland with native grassy understorey
- Eucalyptus odorata, E. phenax +/- E. spp. Woodland/Mallee
- Eucalyptus odorata, E. spp. Woodland/Mallee
- Eucalyptus ovata Woodland
- Eucalyptus viminalis Woodland
- Eucalyptus viminalis Woodland with native grassy understorey
- Eucalyptus viminalis ssp. cygnetensis Woodland
- Gahnia filum Sedgeland
- Leptospermum lanigerum / L. continentale Shrubland
- Themeda triandra and/or Aristida behriana native grassland
- miscellaneous Allocastraria verticillata woodland
- miscellaneous Eucalyptus fasciculosa Woodland/Mallee

NATIONALLY THREATENED - Potentially include on the EPBC Act List of Threatened Ecological Communities

- Eucalyptus odorata / Eucalyptus fasciculosa Woodland with native grassy understorey
- STATE and NATIONALLY THREATENED
- Eucalyptus odorata / Allocastraria verticillata Woodland with native grassy understorey
 - Eucalyptus odorata Woodland
 - Eucalyptus odorata Woodland with native grassy understorey
 - Lomandra effusa / Austrostipa spp. or Themeda triandra Grassland with native grassy understorey
 - Lomandra effusa Grassland
 - Lomandra effusa Grassland with Sedges with native grassy understorey
 - Lomandra effusa Grassland with chenopod understorey
 - Lomandra effusa Grassland with native grassy understorey
 - Lomandra effusa Grassland with sedge understorey



POTENTIAL MANAGEMENT SITES UNDEVELOPED ROADS

Undeveloped Road Reserve Vegetation Survey
(Pickett and Mallen, 2000 - 2004)

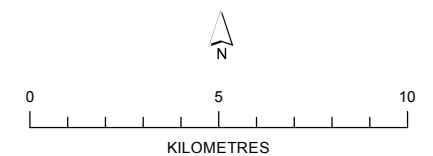
Legend

Potential Sites (*multiple categories exist at most sites and are displayed side-by-side*)

- Bushcare (153.2 km)
- Reference (48.1 km)
- Rehabilitation (238.4 km)
- Revegetation (246.3 km)
- Roadside significant sites (11.7 km)

Other Features

- NPWSA Reserve
- Heritage Agreement
- Native Vegetation
- Orchard/Vineyard
- Plantation (Hardwood/Softwood)



Undeveloped road reserves classified as 'Survey Pending' were generated with reference to aerial photographs. All other undeveloped road reserves were surveyed on-ground using a modified version (more appropriate to surveying unmade road reserves) of the Roadside Vegetation Survey Methodology developed by the Department for Environment and Heritage (now DEWNR). Survey data was recorded on foot using handheld GPS units. Alexandrina Council holds a copy of all data.

Undeveloped road reserve categories have been offset for display purposes.

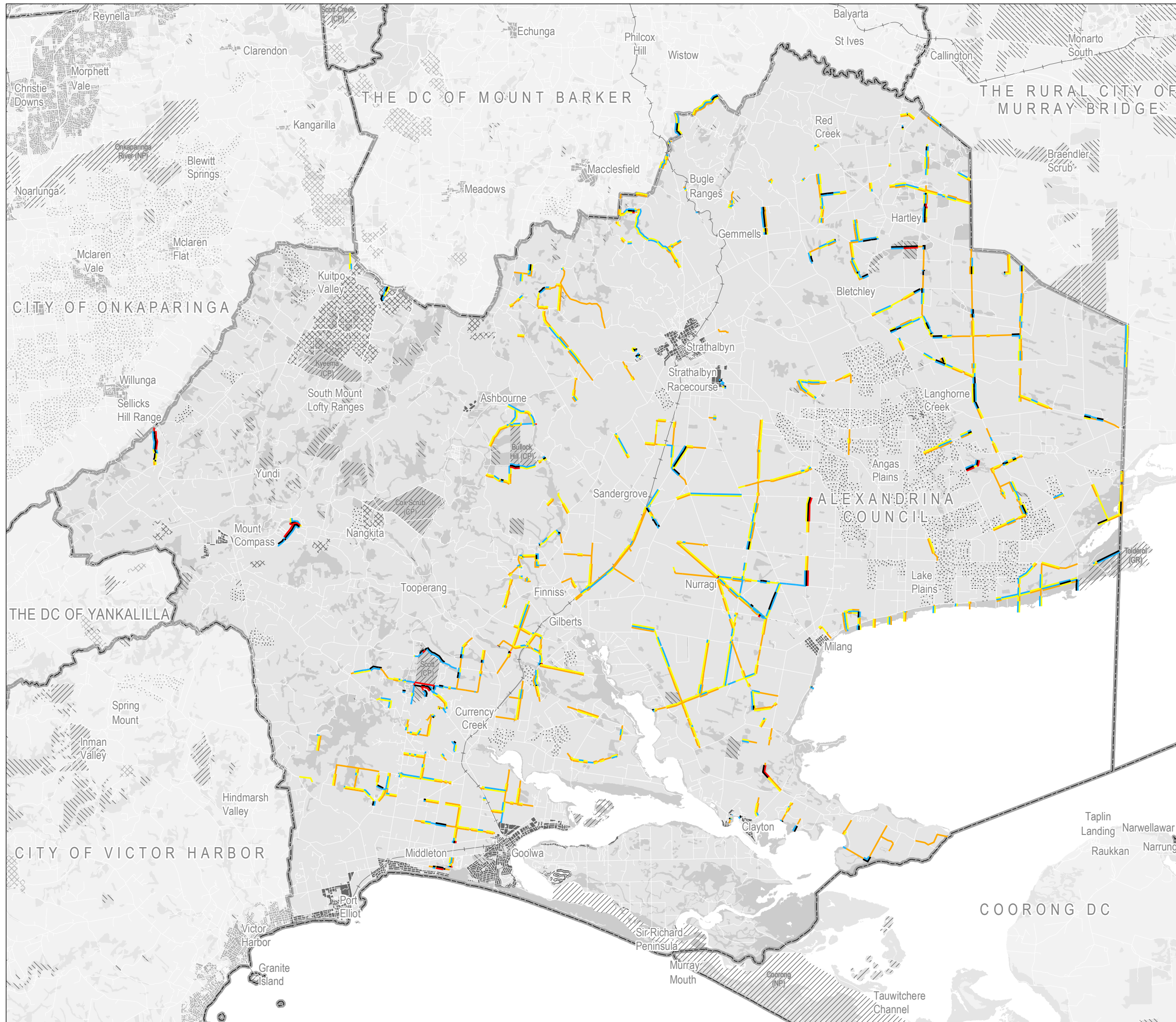
Produced by PIRSA Spatial Information Services, 12/08/2015
L13, 25 Grenfell Street, Adelaide, 5000
www.pir.sa.gov.au

Data Source NPWSA Reserves, Heritage Agreements, Railways, Roads and Local Government Area boundaries supplied by the Department of Environment, Water and Natural Resources. Undeveloped road reserve vegetation survey data supplied by Alexandrina Council (Pickett and Mallen, 2004).

Coordinate System GDA 1994 MGA Zone 54
Projection Transverse Mercator
Datum GDA 1994

DISCLAIMER:
Rural Solutions SA and its employees do not warrant or make any representation regarding the use, or results of the use, of the information contained herein. Rural Solutions SA and its employees expressly disclaim all liability or responsibility to any person using the information or advice.

© Commercial in Confidence Rural Solutions SA 2015





ROADSIDE MARKER SYSTEM DEVELOPED ROADS

Roadside Vegetation Survey
(EBS, 2013 - 2015; Hyde, 1997 - 1999; DEWNR, 1998 - 2008)

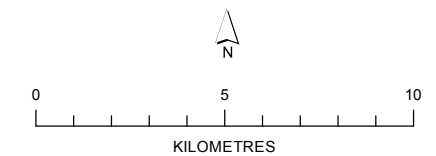
DRAFT

Legend

- Roadside Marker System Sites (EBS)
 - Location of the roadside marker sites (350.6 km)
- Potential Roadside Marker System Sites (Hyde, DEWNR)
 - Overall Significance Category**
 - A: Contains native vegetation in excellent condition
 - B: Contains significant vegetation in moderate condition or less significant vegetation in excellent condition

Other Features

- NPWSA Reserve
- Heritage Agreement
- Native Vegetation
- Orchard/Vineyard
- Plantation (Hardwood/Softwood)



Roadside data shown on this map was collected by using a drive-by road assessment technique developed by EBS Ecology. Survey data was recorded using handheld GPS units (accuracy +/- 3m). Alexandrina Council holds a copy of all data.

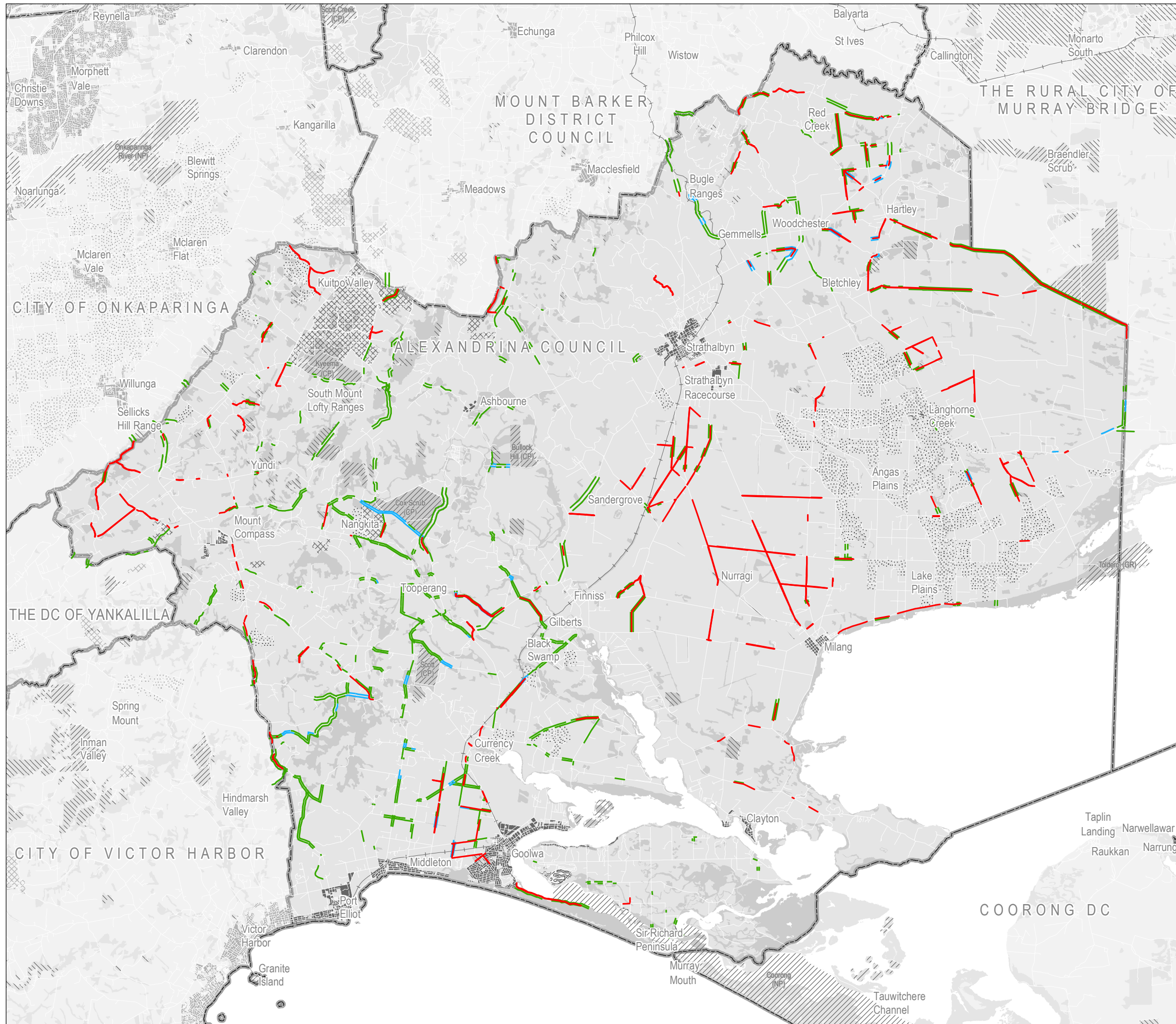
Produced by PIRSA Spatial Information Services, 6/10/2015
L13, 25 Grenfell Street, Adelaide, 5000
www.pir.sa.gov.au

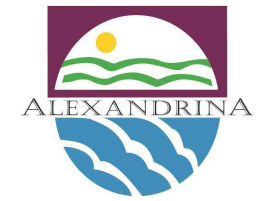
Data Source NPWSA Reserves, Heritage Agreements, Railways, Roads and Local Government Area boundaries supplied by the Department of Environment, Water and Natural Resources. Roadside vegetation survey data supplied by Alexandrina Council (EBS, 2015).

Coordinate System GDA 1994 MGA Zone 54
Projection Transverse Mercator
Datum GDA 1994

DISCLAIMER:
Rural Solutions SA and its employees do not warrant or make any representation regarding the use, or results of the use, of the information contained herein. Rural Solutions SA and its employees expressly disclaim all liability or responsibility to any person using the information or advice.

© Commercial in Confidence Rural Solutions SA 2015





LOCATIONS OF PHYTOPHTHORA INFESTATIONS

Biological Databases of South Australia
(sighting dates 1980 - 2011)

DRAFT

Legend

Phytophthora Infestations

- Phytophthora cinnamomi, Confirmed in soil test (22 sites)
- Phytophthora cryptogea, Confirmed in soil test (2 sites)
- Phytophthora cinnamomi, Not confirmed in soil test (2 sites)
- Phytophthora symptoms, Not confirmed in soil test (13 sites)
- Phytophthora symptoms, Not tested (16 sites)

— Average annual rainfall

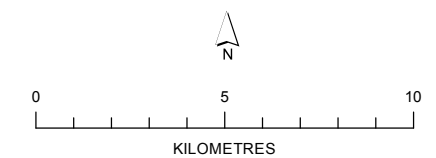
Phytophthora Risk (based on average annual rainfall)

**Risk zones are intended as a guide rather than an accurate delineation of Phytophthora risk*

- Greater than 500 mm (High threat)
- 400 - 500 mm (Moderate threat)
- Less than 400 mm (Very low or nil threat)

Other Features

- NPWSA Reserve
- Heritage Agreement
- Native Vegetation
- Orchard/Vineyard
- Plantation (Hardwood/Softwood)



The Locations of Phytophthora Infestations dataset contains the spatial locations of the opportunistically collected Phytophthora species infestation information. The information has been collected by staff from DEWNR and other government and local government organisations. Data is presence only. Alexandrina Council holds a copy of all phytophthora infestation data.

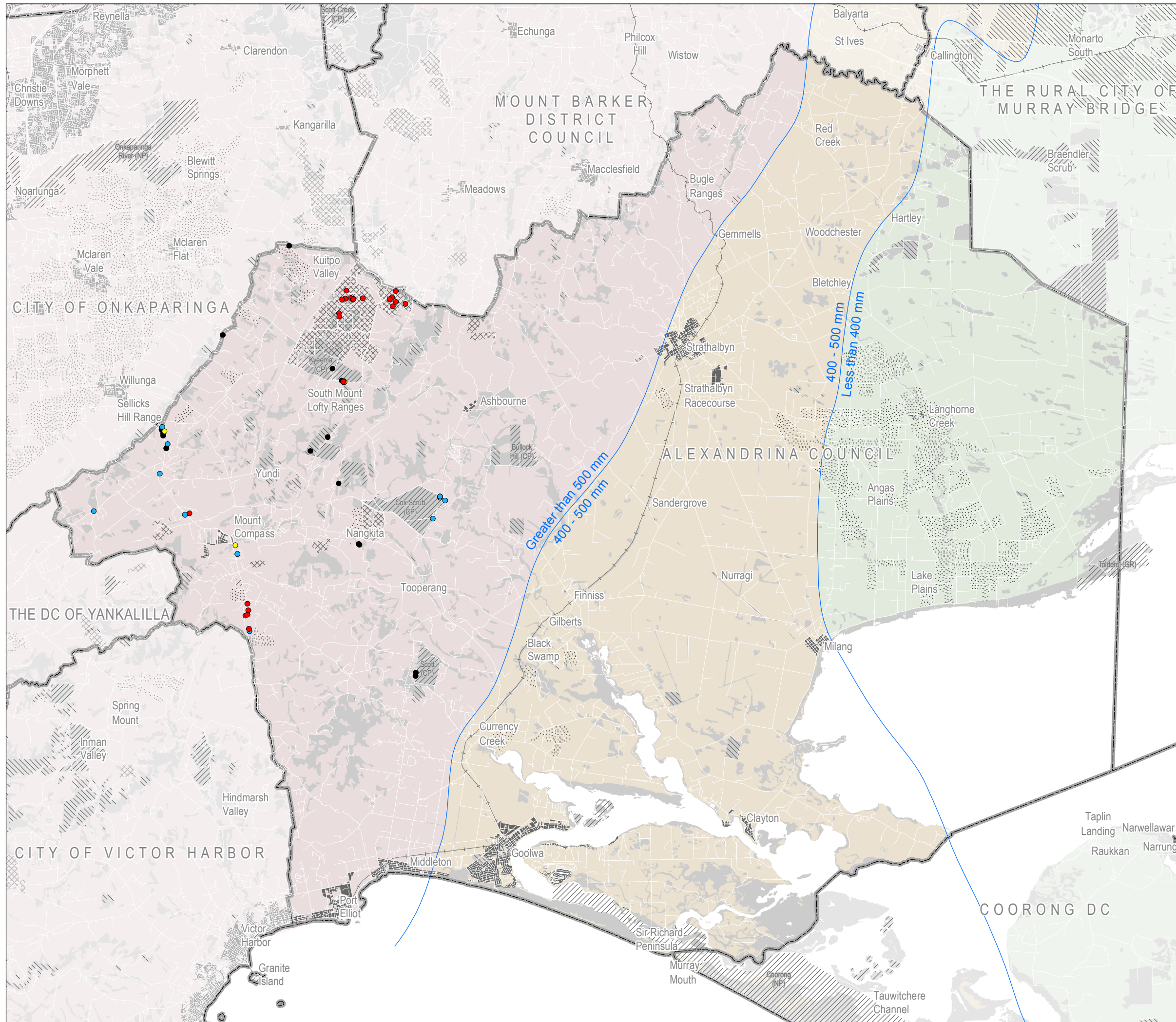
Produced by PIRSA Spatial Information Services, 6/10/2015
L13, 25 Grenfell Street, Adelaide, 5000
www.pir.sa.gov.au

Data Source Phytophthora infestations (Biological Databases of South Australia), NPWSA Reserves, Heritage Agreements, Railways, Roads and Local Government Area boundaries supplied by the Department of Environment, Water and Natural Resources; Average annual rainfall derived from 50mm isohyets generated by PIRSA from the Bureau of Meteorology 5km grid of average annual rainfall based on the 30-year period 1976-2005.

Coordinate System GDA 1994 MGA Zone 54
Projection Transverse Mercator
Datum GDA 1994

DISCLAIMER:
Rural Solutions SA and its employees do not warrant or make any representation regarding the use, or results of the use, of the information contained herein. Rural Solutions SA and its employees expressly disclaim all liability or responsibility to any person using the information or advice.

© Commercial in Confidence Rural Solutions SA 2015



Appendix 4 – Plant Species of Conservation Significance Recorded During Roadside Vegetation Surveys

Conservation Status: AUS – Australia (current 2015); SA – South Australia (current 2015); MU – DENR Murraylands region (updated July 2010); AMLR – DENR Adelaide and Mount Lofty Ranges region (updated February 2014); SE – DENR South East Region (updated December 2011). Conservation Status: EN = Endangered; VU = Vulnerable; RA = Rare; UN = Uncommon; NT = Near Threatened; LC = Least Concern; DD = Data Deficient. Survey: H = Hyde 1997, 1998 or 1999; P = Pickett and Mallen 2000-2001 or 2003; E = EBS Ecology 2013.

Species	Common name	Conservation Status					Roadside Survey
		AUS	SA	AMLR	MU	SL	
<i>Acacia acinacea</i>	Gold-dust wattle			RA	RA	LC	H
<i>Acacia dodonaefolia</i>			RA	RA	RA	RA	E
<i>Acacia halliana</i> s.str.				VU	NT		P
<i>Acacia microcarpa</i>				VU	NT	LC	P
<i>Acacia pinguifolia</i>		EN	EN	EN	CR		E
<i>Acacia rhetinocarpa</i>		VU	VU	VU	VU	RA	E
<i>Allocastrum robusta</i>	Mount Compass oak-bush	EN	EN	VU			H, E
<i>Anthosachne scabra</i> (formerly <i>Elymus scabrous scabrous</i>)	Common wheat grass			LC		?	H
<i>Aristida behriana</i>	Brush wire grass			LC	RA	RA	H
<i>Austrostipa acrocliliata</i>	Cane speargrass			RA	NT	RA	H
<i>Austrostipa blackii</i>	Crested spear grass			LC	RA	RA	H, P
<i>Austrostipa breviglumis</i>	cane spear-grass		RA	VU			H
<i>Austrostipa elegantissima</i>	Elegant Speargrass			LC	LC	NT	H
<i>Austrostipa eremophilla</i>	Desert speargrass			LC	NT	NT	H
<i>Austrostipa exilis</i>				RA	NT	RA	P
<i>Austrostipa gibbosa</i>			RA	VU	RA	VU	H
<i>Austrostipa muelleri</i>	Wiry spear-grass			NT		EN	H
<i>Austrostipa multispiculis</i>			RA	RA	RA		H
<i>Austrostipa platychaeta</i>				RA	NT		P
<i>Austrostipa setacea</i>	Corkscrew grass			NT		VU	H
<i>Austrostipa stipoides</i>	Coast spear-grass			VU		NT	H
<i>Austrostipa verticillata</i>	Slender bamboo-grass						H

Species	Common name	Conservation Status					Roadside Survey
		AUS	SA	AMLR	MU	SL	
<i>Blechnum minus</i>	Soft water-fern			NT			H
<i>Bothriochloa macra</i>	Redleg grass		RA	RA	LC	LC	H, E
<i>Calocephalus citraeus</i>	Lemon beauty heads		UN	RA	RA	RA	H, P
<i>Carex bichenoviana</i>			UN	RA	RA	RA	H
<i>Carex inversa</i>	Knob sedge			VU	RA	RA	H
<i>Daviesia benthamii</i> ssp. <i>humilis</i>			RA	EN	VU	VU	E
<i>Daviesia pectinata</i>			RA	EN	EN	EN	E
<i>Dianella longifolia</i> var. <i>grandis</i>	Pale flax-lily		RA	VU	VU	VU	H, P
<i>Distichlis distichophylla</i>	Salt couch			LC	LC	LC	H
<i>Dodonaea baueri</i>	Crinkled hopbush			RA	RA	RA	H
<i>Dodonaea viscosa</i> ssp. <i>cuneata</i>				RA	RA	RA	P
<i>Eragrostis elongata</i>				RA	RA	RA	P
<i>Eremophila deserti</i>				VU	NT	NT	P
<i>Eremophila longifolia</i>				RA	NT	NT	P
<i>Eremophila subfloccosa glandulosa</i>			RA				H
<i>Eucalyptus calycogona</i> var. <i>calycogona</i>				RA	RA	RA	P
<i>Eucalyptus cnoerifolia</i>	Kingscote mallee			VU			H
<i>Eucalyptus diversifolia</i>	Soap mallee			RA	NT	NT	H
<i>Eucalyptus fasciculosa</i>			RA	NT	NT	NT	E
<i>Eucalyptus gracilis</i>				VU	LC	LC	P
<i>Eucalyptus largiflorens</i>				EN	RA	RA	P
<i>Eucalyptus oleosa</i>	Acorn mallee			*NE	LC	LC	H
<i>Eucalyptus ovata</i>	Swamp gum		UN	VU			H
<i>Eucalyptus paludicola</i>		EN	EN	VU			E
<i>Eucalyptus viminalis</i> ssp. <i>viminalis</i>			RA	VU			H P
<i>Exocarpus sparteus</i>	Broom ballart			RA	NT	LC	H
<i>Gahnia deusta</i>	Saw sedge			RA	LC	NT	H
<i>Gahnia filum</i>	Smooth cutting-grass			VU	RA	LC	H
<i>Gahnia lanigera</i>	Desert saw-sedge			NT	LC	NT	H
<i>Gahnia sieberiana</i>	Red fruit cutting-grass		UN	NT		VU	H
<i>Gleichenia microphylla</i>	Coral fern		RA	RA		VU	H
<i>Glyceria australis</i>	Australian sweet grass			VU	DD	EN	H
<i>Halgania cyanea</i>	Rough halgania				RA	NT	H
<i>Lomandra effusa</i>	Scented mat rush, irongrass			NT	LC	NT	H
<i>Lomandra micrantha micrantha</i>	Small flower mat rush			LC	LC	NT	H
<i>Lomandra nana</i>	Pale mat rush		UN	LC	NT	NT	H
<i>Maireana enchylaenoides</i>	Wingless fissure weed			LC	LC	NT	H
<i>Maireana rohrlachii</i>			RA	RA	NT		P
<i>Melaleuca halmaturorum</i> ssp. <i>halmaturorum</i>				EN	VU	LC	P
<i>Melaleuca lanceolata</i>	Dryland tea-tree			RA	LC	NT	H
<i>Olearia decurrens</i>				RA	NT	VU	P
<i>Olearia pannosa</i> ssp. <i>pannosa</i>	Solver daisy bush	VU	VU	EN	VU	EN	H, P, E
<i>Olearia passerinoides</i> ssp. <i>glutescens</i>			RA	VU	VU	RA	P
<i>Olearia picridifolia</i>			RA	RA	RA	VU	E

Species	Common name	Conservation Status					Roadside Survey
		AUS	SA	AMLR	MU	SL	
<i>Persicaria prostrata</i>	Trailing knot weed		UN	NT	RA	NT	H
<i>Philotheca angustifolia</i> ssp. <i>angustifolia</i>			RA	RA	RA	VU	E
<i>Pittosporum angustifolium</i> (formerly <i>Pittosporum phylliraeoides</i>)	Weeping pittosporum			NT	NT	NT	H
<i>Pratia concolor</i>					RA	NT	P
<i>Pratia platycalyx</i>							P
<i>Ranunculus inundatus</i>				EN	EN	VU	P
<i>Rytidosperma auriculata</i> (formerly <i>Danthonia auriculata</i>)	Lobed wallaby grass			LC	VU		H
<i>Rytidosperma carphoides</i> (formerly <i>Danthonia carphoides</i>)	Short wallaby grass			RA			H, P
<i>Rytidosperma eriantha</i> (formerly <i>Danthonia eriantha</i>)	Hill wallaby grass			NT	VU	RA	H
<i>Rytidosperma fulvum</i> (formerly <i>Danthonia linkii fulva</i>)	Wallaby grass			VU	VU	RA	H
<i>Santalum acuminatum</i>	quondong			RA	NT	NT	H, P
<i>Teucrium racemosum</i>				RA	LC	NT	P
<i>Viminaria juncea</i>			RA	VU	VU	VU	E
<i>Wilsonia backhousei</i>				EN		LC	P
<i>Wilsonia rotundifolia</i>	Round leaf wilsonia			VU	LC	LC	H, P
Total Species = 81							

Appendix 5 – Alexandrina Council’s Road Hierarchy Classification

Category	Description	Criteria (meets some or all)
Urban/Town Roads - those roads situated inside the town boundaries of Strathalbyn, Milang, Clayton, Goolwa, Middleton, Mount Compass Langhorne Creek, Woodchester, Finnis and Port Elliot		
Urban Distributer	Link suburbs, towns or areas, that provide a direct link through a town or area or act as a bypass route around a town or urban area.	<ul style="list-style-type: none"> • carry 2000+ vehicles per day (heavy volume) • bitumen sealed • minimum travel way width of 7.0m • transport route for GAVs and gazetted B-Double route • design speed/ speed zones of 60 km/h to 80 km/h.
Urban Collector	Collect traffic from suburban areas and channel traffic directly to town centres or major points of activity. They may also link suburbs or towns directly to distributor roads.	<ul style="list-style-type: none"> • carry between 500 and 2000 vehicles per day (heavy volume) • bitumen sealed • minimum travel way width of 6.6m central seal or 10.0m kerbed • residential access • transport Route for GAVs and bus route. Not generally for B-double access but can be permitted for over-dimensional vehicles and wide loads • design speed/ speed zones of 50 km/h to 80 km/h.
Urban Local	Provide access within an urban area or town. Should not be thoroughfares and should be designed with traffic calming features to discourage through traffic and high speed traffic.	<ul style="list-style-type: none"> • carry between 50 and 500 vehicles per day (low volume) • should be bitumen sealed • are within residential areas • cater for the safe use of bicycles and pedestrians • minimum travel way width of 6.0m unkerbed or 7.4m kerbed • design speed/ speed zones of 50 km/h.
Urban Access Lane	Minor roads, laneways or access right of ways. Main purpose is to give access to residential properties.	<ul style="list-style-type: none"> • carry less than 50 vehicles per day (low volume) • generally bitumen sealed but may be unsealed • minimum travel way width of 3.5m for a single carriageway and 5.0 metres for a dual carriageway • design speed/ speed zones of 50 km/h.
Rural Roads - Rural Roads are those situated outside the town and urban areas		
Rural Distributer	Directly link rural areas and/or towns. Designed as freight routes and can be gazetted B-Double routes	<ul style="list-style-type: none"> • carry 500 + vehicles per day (medium to heavy volume). • bitumen Sealed • travel way width of 7.0m or greater • transport Route for GAVs and can be a gazetted B-Double route • design speed/ Speed zones of 100 km/h or 110 km/h.
Rural Collector	Collect traffic from rural areas and channel traffic to rural towns or Rural Distributor roads. Suitable for heavy vehicles and farm machinery but are not generally gazetted B-Double routes.	<ul style="list-style-type: none"> • carry 100 to 500 vehicles per day (low volume) • generally bitumen sealed (if traffic greater than 150 vehicles per day) but may be unsealed • minimum travel of 7.0m for sealed or 8.0m for unsealed • transport route for GAVs and possible gazetted as a B-Double route or permitted access to particular sites • design speed/ speed zones of 100 kph.

Category	Description	Criteria (meets some or all)
Rural Local	Link rural properties and areas to Rural Distributor and Rural Collector roads.	Carry 20 to 100 vehicles per day (low volume) Generally unsealed but may be bitumen sealed on roads with volumes greater than 50 vehicles per day or that warrant sealing for other reasons such as steep grades or a slippery surface. Require a regular grading or maintenance program. Travel way width of 6.0m or greater for sealed and unsealed. Light vehicle access. GAV access to farm properties where required. Design speed/ Speed zones of 100 km/h
Rural Access Track	Narrow or single lane roads that service a small number of properties and are not generally thoroughfares. Access to rural properties, fire tracks, 4WD tracks. Access to single dwelling houses.	Carry less than 20 vehicles per day. Generally unsealed and do not warrant a regular maintenance program. Minimum travel way width 3.5m with standard width 6.0m or wider to allow farm machinery to travel. Light vehicle access, 4WDs, farm machinery Design speed/ speed zones of 100 km/h but generally much lower speed environment.
Rural Property Access	Unmade road or track not recognised as a Council asset that is used to access up to three properties or agricultural properties	
Unmade Road	Road reserve that is not used for access and has no evidence that it is used for agricultural access	

Appendix 6 – NAMO Principles

The NAMO principles are a set of principles that should be referred to in the decision making process in order to minimise or avoid impacts on biodiversity or vegetation. They are listed in order of most preferable to least preferable outcome (with clearance and offsetting being the 'last resort') and should be applied in that order.

The NAMO principles are consistent with the Guiding Principle on page 36 of the Alexandrina Council Environmental Action Plan 2014-2018 which provides as follows:

“When developing land and undertaking Council operations, Council will seek to avoid any impacts on biodiversity, and if that is not possible, to minimise or offset any damage using onsite rehabilitation measures. Offsite offsets will be treated as an option of last resort. Council will encourage developers to adopt this same framework”.

<p>N No loss</p>	<p>Try to locate and design the infrastructure in such a way that it will not have any impacts on vegetation or biodiversity.</p>
<p>A Avoid clearance</p>	<p>If you are unable to achieve No Loss, look for ways you can alter the location/ design/construction method so as to avoid clearance of native vegetation. For example:</p> <ul style="list-style-type: none"> • investigate road realignment, or install guard rail/ wire rope barriers as an alternative to removing hazardous trees • steepen batters to minimise the construction footprint • use hand trenching in the critical root zone to avoid severing roots.
<p>M Minimise the impacts of clearance</p>	<p>If there is no way you can avoid clearing native vegetation, look for ways you can minimise the impact of the clearance. For example:</p> <ul style="list-style-type: none"> • prioritise the retention of rare vegetation communities or important habitat over other less critical pieces of vegetation • retain hollows from felled trees to provide habitat, use low-impact methods • avoid unnecessary ground disturbance which would encourage weed colonisation, and avoid windrowing cleared vegetation.
<p>O Offset clearance</p>	<p>If clearance is unavoidable, offset the loss of vegetation and biodiversity by undertaking revegetation or equivalent bush-care work.</p>

Appendix 7 – Council Approval Requirements

Pursuant to s 221(2)(e) of the *Local Government Act 1999*, any public activity involving the planting, interference or removal of vegetation on a roadside (developed or undeveloped) requires prior approval from Council. The maximum penalty for unauthorised planting, interference or removal of vegetation on a road is \$5,000.

The only exceptions to this are if the person who proposes to make such an alteration to the road has some other statutory authorisation to do so - Section 221(3)(a) - or the purpose of the alteration is to permit vehicular access to and from land adjoining the road and the alteration is approved as part of a development authorisation under the *Development Act 1993* – Section 221(3)(b).

See below a list of current Council application and approval forms. Note that in **Section 4** above, Council has identified that we will be reviewing our permit framework and as a result, the name and format of these applications forms may change. This section of the RVMP will be updated to reflect any changes to Council’s approval processes as and when they occur.

Relevant application forms are available on Council’s website (www.alexandrina.sa.gov.au) or by calling Customer Service on (08) 8555 7000.

Activity	Application Form	Relevant Section within RVMP
Collection of roadside timber	NA – public collection of roadside timber is not permitted within the Alexandrina Council district.	3.14 Removal of Plant Material
Alter a roadside verge (developed roads) <ul style="list-style-type: none"> • Install a drain • Landscape a verge • Tree planting • Tree removal request • Pest plant and/or animal control • Extend Council’s CWMS Infrastructure • Bushfire Prevention Works 	Application to Alter a Verge	3.1 New Roadworks (i.e. drains) 3.3 Public Safety 3.4 Installation and maintenance of services (i.e. CWMS) 3.5 Pest Plant and Animal Control 3.7 Clearance for Fence lines 3.9 Bushfire Protection 3.17 Restoration of Roadside Vegetation See also Council’s Tree Management Policy
Tree removal request – unmade road	A Customer Action Request (CAR) can be lodged via email at alex@alexandrina.sa.gov.au or by calling Customer Service on (08) 8555 7000.	As above
Environmental restoration/revegetation works on an unmade road <ul style="list-style-type: none"> • Revegetation • Pest plant and/or animal control 	Application to Revegetate Undeveloped Council Road Reserve Note: adjacent landowners seeking to restore and/or revegetate an unmade road are encouraged to obtain an Unmade Road Reserve Permit	3.5 Pest Plant and Animal Control 3.17 Restoration of Roadside Vegetation

Activity	Application Form	Relevant Section within RVMP
Seed Collection and/or other collection of plant material	A written request should be submitted to Council's Environmental Project Officer quoting DEWNR permit number.	3.14 Removal of Plant Material
Driveway Crossover	Driveway Crossover Application	3.8 Clearance for Access to Adjoining Land
Use of unmade road reserve by adjacent landowner: <ul style="list-style-type: none"> • Alter the construction, arrangement or materials of the road • Facilitate access from adjacent property • Erect or install a structure in, on, across, under or over the road • Change, interfere or remove a structure associated with the road • Plant, interfere or remove vegetation • Undertake business activity (i.e. cropping or grazing) 	Permit 7 – Unmade Road Reserve Permit	3.1 New Roadworks 3.4 Installation and maintenance of services (i.e. CWMS) 3.5 Pest Plant and Animal Control (i.e. roadside weed control) 3.7 Clearance for Fence lines 3.8 Clearance for Access to Adjoining Land 3.9 Bushfire Protection 3.10 Grazing 3.11 Movement of Stock 3.13 Cultivation and Cropping 3.17 Restoration of Roadside Vegetation
Over-dimensional Vehicle Request	Over-dimensional Vehicle Access Application	3.15 Over-dimensional Vehicle

Appendix 8 – Declared Weed Species

The table below summarises the declared plant species identified by staff within Natural Resources AMLR and Natural Resources SAMDB as occurring within the Alexandrina Council area, including their advice as to which species should be considered a priority for control.

The table below is not a complete list of declared plant species and should only be used as a general guide. For the complete list of declared plant species and the exact provisions which apply to each, please refer to the PIRSA website: www.pir.sa.gov.au/biosecurity/weeds_and_pest_animals.

Common Name	Botanical Name	Found in AMLR area	Found in MDB area
African boxthorn	<i>Lycium ferocissimum</i>	Yes, common Priority for control	Yes, common*
African feathergrass	<i>Pennisetum macrourum</i>	Yes, common	Yes
African lovegrass	<i>Eragrostis curvula</i>	Yes, common	Yes, common*
Aleppo Pine	<i>Pinus halepensis</i>	Yes, common*	Yes, common*
Asparagus weeds		Yes, common	
Athel pine	<i>Tamarix aphylla</i>		Yes
Apple of Sodom	<i>Solanum linnaeanum</i>		Yes, common*
Arum Lily	<i>Zantedeschia aethiopica</i>	Yes, Priority for control	Yes
Bathurst burr	<i>Xanthium spinosum</i>		Yes
Blackberry	<i>Rubus fruticosus</i>	Yes, common	Yes, common*
Bladder campion	<i>Silene vulgaris</i>		Yes
Boneseed	<i>Chrysanthemoides monilifera</i>	Yes, Priority for control	Yes, Priority for control
Bridal creeper	<i>Asparagus asparagoides</i>	Yes, common*	Yes, common*
Bridal Veil	<i>Asparagus declinatus</i>	Yes	Yes, Priority for control
Box elder	<i>Acer negundo</i>		Yes
Caltrop	<i>Tribulus terrestris</i>	Yes	Yes, common*
Cape broom	<i>Gensita monspessulana</i>	Yes, common*	Yes, common*
Coolatai grass	<i>Hyparrhenia hirta</i>		Yes, Priority for control
Cutleaf mignonette	<i>Reseda lutea</i>		Yes
Dog rose	<i>Rosa canina</i>	Yes, common	Yes, common*
Desert Ash	<i>Fraxinus angustifolia</i>	Yes	
English broom	<i>Cytisus scoparius</i>	Yes, Priority for control	Yes
Fountain grass	<i>Cenchrus longisetus</i>	Yes	Yes
Gazania	<i>Gazania spp</i>	Yes, Priority for control	Yes, common*
Gorse	<i>Ulex europaeus</i>		Yes, common*
Horehound	<i>Marrubium vulgare</i>	Yes	Yes, common*
Innocent weed	<i>Cenchrus incertus</i>		Yes
Italian Buckthorn	<i>Rhamnus alaternus</i>	Yes, Priority for control	Yes

Common Name	Botanical Name	Found in AMLR area	Found in MDB area
Khaki weed	<i>Alternanthera pungens</i>		Yes, Priority for control
Mirror Bush	<i>Coprosma repens</i>		
One-leaf cape tulip	<i>Moraea flaccida</i>	Yes	Yes, common*
Olive	<i>Olea europaea</i>	Yes, Priority for control	Yes, common*
Polygala	<i>Polygala myrtifolia</i>	Yes	Yes
Prickly pears	<i>Opuntia</i> spp. (except <i>O. ficus-indica</i>)	Yes	Yes
Sagittaria	<i>Sagittaria graminea</i>		Yes, Priority for control
Salvation jane	<i>Echium plantagineum</i>	Yes	Yes, common*
Salvinia	<i>Salvinia molesta</i>		Single site near Goolwa - has been eradicated
Silverleaf nightshade	<i>Solanum elaeagnifolium</i>	Yes	Yes, common*
Spiny rush	<i>Juncus acutus</i>	Yes, Priority for control	Yes
Sweet Briar	<i>Rosa rubiginosa</i>		Yes, common*
Sweet Pittosporum	<i>Pittosporum undulatum</i>	Yes, Priority for control	Yes
Two-leaf cape tulip	<i>Moraea miniata</i>		Yes
White weeping broom	<i>Retama raetam</i>		Yes
Water dropwort	<i>Oenanthe pimpinelloides</i>		Yes, Priority for control

*common however may be restricted to certain areas of the Council district.

NRM staff also identified the following non-declared weeds as being an issue within the Alexandrina Council area:

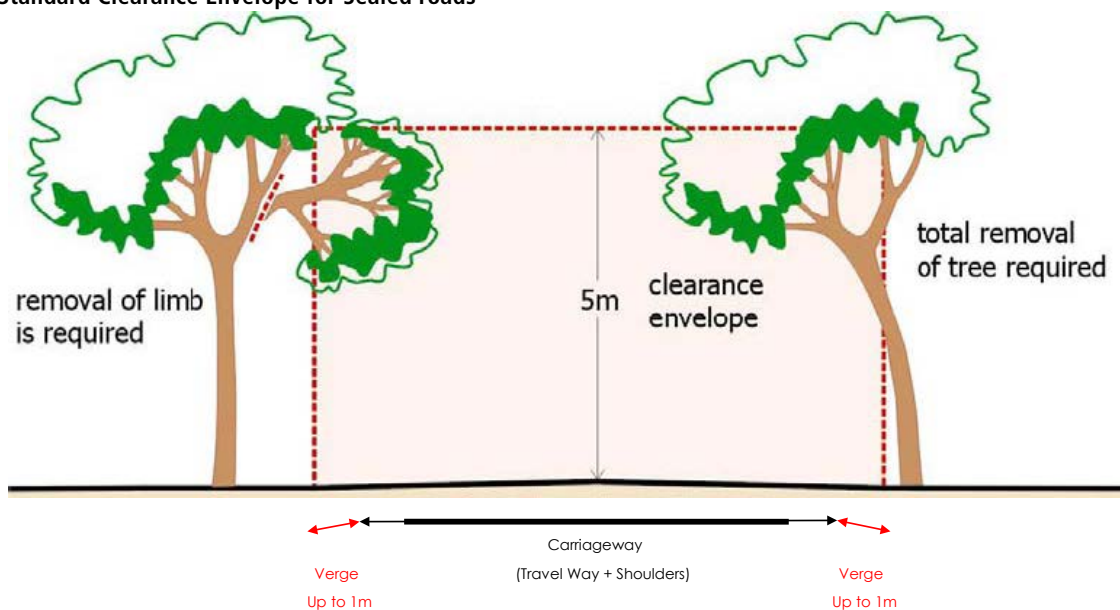
- Natural Resources AMLR: *Acacia saligna*, Victorian Coastal Tea Tree, *Albizia*, Century Plant and Radiata Pine.
- Natural Resources SAMDB: Giant ice plant (*Mesembryanthemum guericchianum*).

Other non-declared weeds of high concern on roadsides within the Alexandrina Council area include:

- Pin Cushion (*Scabiosa atropurpurea*)
- WA Wattle (*Acacia cyclops*)
- Fennel (*Foeniculum vulgare*)
- Rice Millet (*Piptatherum miiaceum*)
- Tree Lucerne (*Chamaecytisus palmensis*)

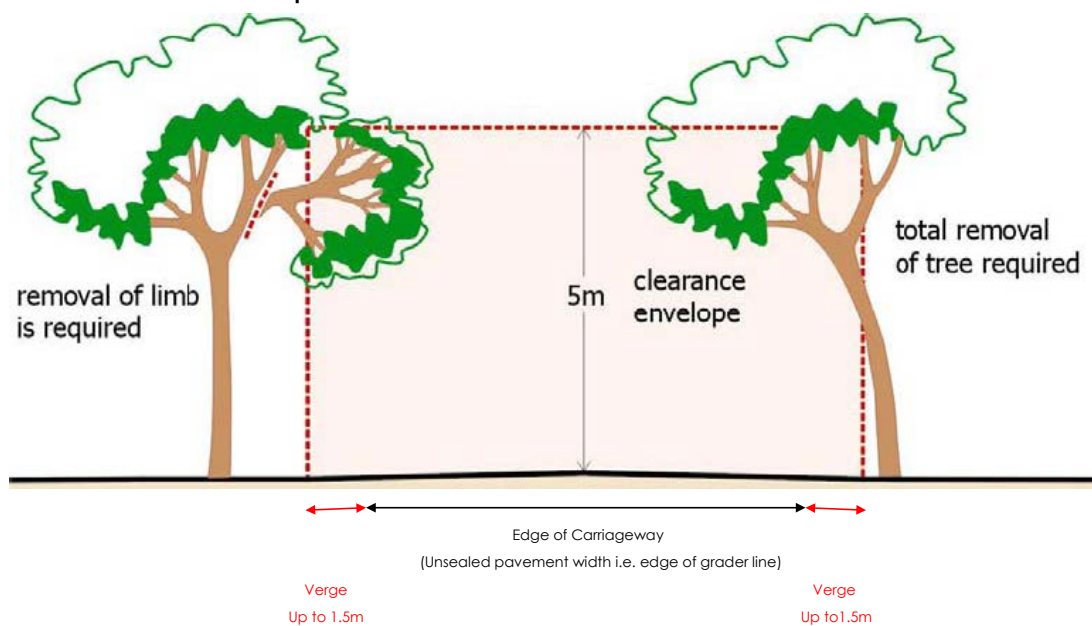
Appendix 9 – Clearance Envelopes

Standard Clearance Envelope for Sealed roads



Lateral verge clearance up to 1m from edge of shoulder. Shoulder may be sealed or unsealed but is flush with the surface of the travel way. Width of shoulder will vary in accordance with design conditions i.e. operating speed. Shoulder widths will usually be greater on higher speed roads. If native vegetation over five years old is present within the clearance envelope then approval must be sought from the Native Vegetation Council.

Standard Clearance Envelope for Unsealed roads



Lateral verge clearance up to 1.5m from edge of grader line. If native vegetation over five years old is present within the clearance envelope then approval must be sought from the Native Vegetation Council.

Secondary Clearance Envelopes

- A secondary clearance envelope extending up to 500 mm around roadside furniture can be maintained, **Figure 1**.
- 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 2**.
- At road intersections where corners are created, verges are to be maintained for safe sight distance according to **Figure 3**.

Low growing native plant species within the road verge that will not impair sight distance or pose a significant risk to vehicle safety are to be retained and promoted. The presence of these species can help prevent weed invasion and soil erosion, maintain a level of biodiversity in the area and can reduce roadside management costs.

Figure 1.
Secondary Clearance Envelope maintained around roadside furniture

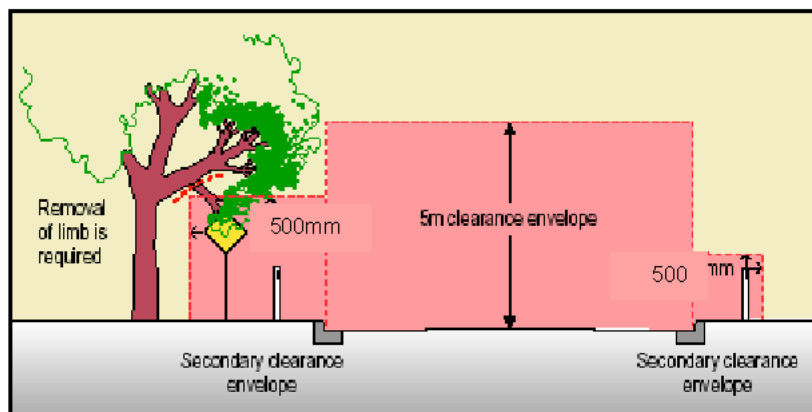


Figure 2
Secondary clearance envelope for signage sight distances

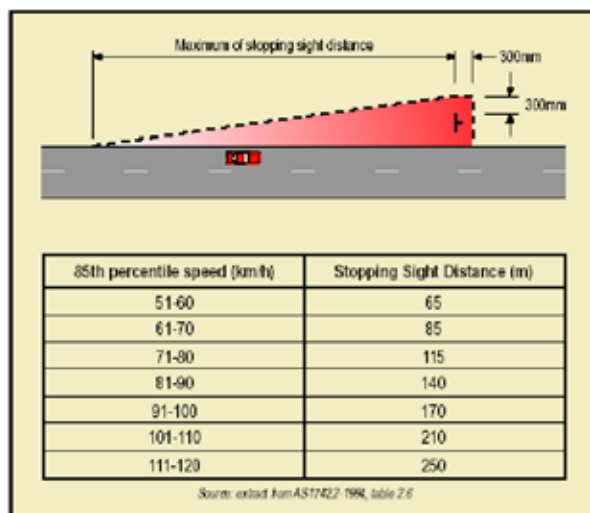
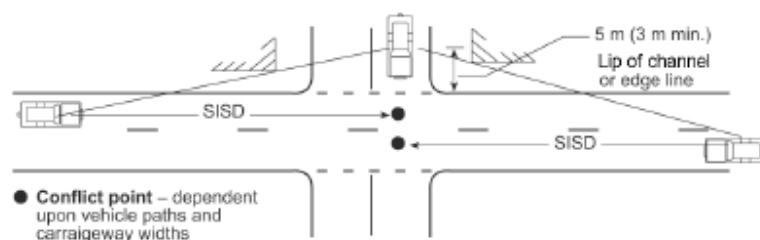


Figure 3
Safe intersection sight distance (SISD) Austroads Guide to Road Design Part 4A. For details on how to calculate safe sight distance and sight triangles, refer to Section 3.2.2 of the Austroads Guide



THRIVE IN CLEAN GREEN FUTURES

How to contact us

Phone 08 8555 7000

11 Cadell Street, Goolwa

PO Box 21
Goolwa SA 5214

alex@alexandrina.sa.gov.au

www.alexandrina.sa.gov.au

[facebook.com/alexandrinacouncil](https://www.facebook.com/alexandrinacouncil)

