



Managing Roadsides **Implementation**

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Why are roadside environments important?

There are approximately 180,000 km of public roads in New South Wales (NSW). Coupled with other linear reserves such as travelling stock reserves (TSRs), rail corridors and infrastructure easements (including electricity lines, gas pipelines), it is estimated that NSW linear reserves cover about 6% of the State's area.

Apart from covering a large area, the State's roadside reserves contain significant native biodiversity, including ecological communities that are not represented in national parks, public reserves or private land. In rural areas, roadside reserves may constitute the only remaining intact natural environment in the district due to extensive clearing for broadacre farming and other land uses.

Roadside reserves provide invaluable wildlife habitats and corridors, especially when linked with other native vegetation remnants in the landscape and provide connectivity which may assist in addressing threats, including those associated with climate change. Other values of roadside reserves include:

- Transport routes (e.g. for stock)
- Agistment during drought
- Fire control lines
- Carbon sinks
- Places of Indigenous culture and heritage
- Sites of historic heritage
- Geological heritage
- Aesthetic appeal and recreational opportunities
- Sites for research and education.

Managing roadside environments in NSW

Reserves along main roads in NSW are managed by the NSW Roads and Maritime Services; local councils are responsible for the management of local (minor) roads and their reserves.

Managing roadside areas is complex due to a number of competing values and issues. Conservation needs must be balanced with road safety, soil stability, water runoff, legal requirements, bushfire risk, infrastructure corridors (water, power, telecommunications), cultural values, firewood collection, grazing, recreational values (horse riding, hiking, bike riding), educational values and development needs.

The NSW Environmental Planning and Assessment Act 1979 outlines requirements for environmental assessment in relation to roads in NSW. Works on existing roadsides will be covered under the Local Environment Plan (LEP) and no permit is required. However, local councils do have a responsibility to undertake due diligence in relation to managing environmental values, including threatened species, usually by way of an assessment called a Review of Environmental Factors (REF), and are their own consent authority in this regard.

If it is considered that a significant environmental impact may occur, then further assessment and mitigation measures are required and the assessment may be directed to the Environment Minister (NSW and/or Commonwealth) for determination. Note that for main roads, the NSW government agency Roads and Maritime Services is the determining authority.

There are other legislative requirements relating to specific aspects of roadside reserve management including:

- Bushfire management (*NSW Rural Fires Act 1997*)
- Threatened species (*NSW Threatened Species Conservation Act 1995, Commonwealth Environmental Protection and Biodiversity Conservation Act 1999*)

- Weed management (*NSW Noxious Weeds Act 1993*)
- Protection of public lands (*NSW Local Government Act 1993*)
- Pollution of land or waterways (*NSW Protection of the Environment Operations Act 1997*).

In addition to carrying out the legislative requirements, local councils are encouraged to take a more proactive approach to roadside environmental management. This approach involves the use of Roadside Vegetation Management Plans (RVMPs) or similar. These plans enable the identification of important roadside environments and coordinated strategies to conserve them. This holistic planning approach means that the risks to the important natural assets are understood and better managed.

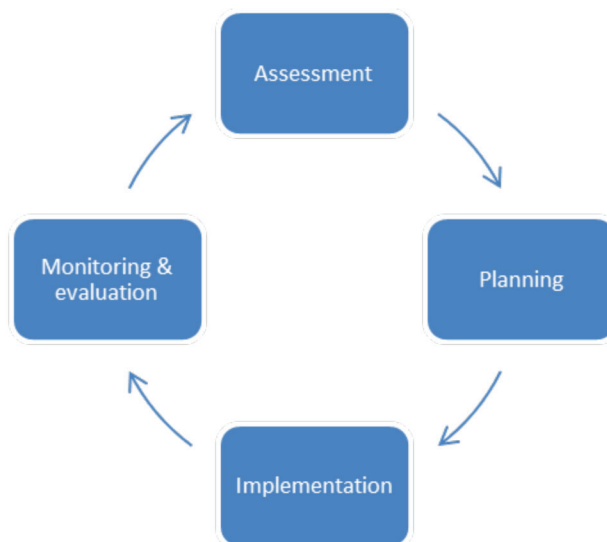
These guidelines have been prepared for local councils seeking to achieve best practice in roadside environmental management through the use of RVMPs. However, the guidelines will also be of relevance to managers of other linear reserves which, by nature of their shape and issues, have similar management requirements.

Towards best practice in roadside environmental management

There are four stages that lead to best practice in roadside environmental management:

1. Assessment
2. Planning
3. Implementation
4. Monitoring and evaluation

The stages should be carried out in a cycle as shown below.



The four stages in best practice roadside environmental management

This guide outlines the third stage in best practice - implementation.

Management actions

As identified in 'Managing Roadsides 2: Planning', there are four main categories of actions that could be included in the management action plan in the RVMP:

1. Actions relating to legislative requirements for road construction and widening.
2. Actions relating to other legislative requirements such as weed management, and bushfire management.
3. Actions to minimise the impacts of threats and resolve issues.
4. Actions to better manage high, medium and low conservation value roadsides, particularly highest priority sites.

This guide primarily covers the fourth category of actions, as the first two are directed by legislation and the third is localised and is partly covered by the other three categories.

A good guide to management actions related to clearing and maintenance is the 'Biodiversity Guidelines' issued by the NSW Roads and Maritime Services. The Guidelines are available at: www.rms.nsw.gov.au/environment/downloads/biodiversity_guidelines.pdf

The Hunter and Central Coast Regional Environmental Management Strategy (HCCREMS) has produced a series of useful guides to implementation practices and a Review of Environmental Factors (REF) template. These resources are available at: www.hccrems.com.au/Programs/Roadside-Environments/Roadside-Environment-Resources.aspx.

Implementing the management actions

Actions relating to the management of high, medium and low conservation value roadsides could include:

- Appropriate maintenance of roadsides
- Signage and markers
- Training
- Community education
- Regulation
- Stakeholder engagement and partnerships
- Funding opportunities
- Restoration and rehabilitation projects

To best manage roadside environments it is important that council staff and contractors use appropriate maintenance regimes for high, medium and low value conservation sites.

Maintenance of high conservation value roadsides

Consider the following techniques to protect and/or enhance these areas:

- Restrict stock from these areas. Consider fencing, limiting agistment, or diverting travelling stock during certain times such as flowering and seed set.
- Create vegetation corridors connecting adjacent remnant vegetation areas.
- Undertake a weed strategy, to restrict the impact of encroaching weeds.
- Limit weed spraying and slashing within these sites.
- Encourage managers of adjacent land to minimise impact on the roadside.
- Restrict or redirect road maintenance and development activities to other areas.
- Educate motorists and road workers about the importance of the site by erecting signs and providing training.
- Encourage firebreaks on adjoining land rather than through the roadside.

- For those roadsides in Management Categories B and C, attempt to rehabilitate them to Category A (see 'Managing Roadsides 1: Assessment' for an explanation of categories).
- Identify and attempt to minimise threatening processes relating to threatened species and Endangered Ecological Communities.
- Conduct rehabilitation work on the highest priority areas if opportunities for funding of projects arise.

Maintenance of medium conservation value roadsides

Consider the following management options:

- Identify those areas capable of being protected from grazing and road works by restricting stock access or fencing the area. Other areas may need to be allocated as routes for travelling stock, to maintain access.
- Encourage regeneration of natural vegetation, by managing grazing, burning or light cultivation.
- Set up an integrated weed control strategy to manage the impact of existing or encroaching weeds.

Maintenance of low conservation value roadsides

Ensure that activities are managed effectively to avoid further degradation. Consider the following management:

- Prioritise these areas for travelling stock and grazing, ensuring that this does not lead to further roadside degradation, such as erosion or weed infestation.
- Control weeds which impact on the roadside and adjacent land.
- Rehabilitate the land if opportunities exist to create a strategic connection with other remnant vegetation, or to help control salinity and erosion.
- Use for activities which are not appropriate in high and medium conservation value roadsides, for example, stockpiles, spoil dumps and machinery parking.

Signage and markers

There are two main ways used in NSW to identify high conservation value roadsides and signal the various management regimes for all roadsides.

1. Significant Roadside Environment Area Signs
2. Roadside markers

Significant Roadside Environment Area Signs

Roads are regularly used by everyone in the community. Placing signs on roadsides will create interest in the roadside environment. Signs also alert roadside users and works crews to areas which need special care particularly those high priority sites within high conservation value roadsides.



Example of a Significant Roadside Environment Area sign (photo: Orange City Council)

The NSW Roadside Environment Committee (REC) encourages identification of significant roadside environment areas (SREA) and provides a template to be used to identify such areas. Sites of significance can be based on ecological, historical, geological or cultural attributes, or a combination of all of these.

The SREA signs identify areas to:

- warn roadside workers to take care when operating in the area
- highlight the features of the roadside to the public and promote awareness
- provide a contact for further information.

Local councils are encouraged to produce and erect SREA signs along high priority roadsides. Guidelines for erecting SREA signs can be found at: www.lgnsw.org.au/policy/roadside-vegetation-implementation-project/grant-reporting-process.

Roadside markers

Roadside markers can be used to provide clear instructions for council staff undertaking roadside management activities within identified ecologically sensitive sites. A marker scheme involves colour-coded stickers being placed on existing or new white marker posts that will alert council staff to the presence and nature of ecologically sensitive roadside sites of high conservation value. These stickers provide a clear coded link to supporting Field Guides that specify appropriate management practices for protecting ecological values on that site.

Some individual councils have developed their own marker schemes. The Hunter and Central Coast Regional Environmental Management Strategy (HCCREMS) has developed a roadside marker scheme for their region, and provides consistency across councils in its region. The marker scheme will significantly reduce the risk of inadvertently damaging threatened species and communities protected by Commonwealth and State legislation. Some 250 sites of ecological significance have been identified and documented across 14 councils in the region.

Ecologically sensitive sites are defined as:

- Intact remnant native vegetation which may be significant at local or regional levels.
- Endangered Ecological Communities as identified in the *Threatened Species Conservation Act 1995* and the *Environment Protection and Biodiversity Conservation Act 2000*.
- Habitat for a range of significant flora and fauna species. The roadside environment may contain features including bush rock, fallen logs or trees with hollows that provide important habitat for a range of ground dwelling and arboreal animals.
- Roadsides adjoining or intersecting with wetlands, creeks and rivers which provide habitat for aquatic fauna and flora. Many creeks, rivers and wetlands intersect with roads or occur immediately along the roadside. These sites are an important food source and refuge for a range of native plants and animals. Impacts such as upstream erosion from road related activities may have detrimental impacts on these fragile habitats.
- Corridors and key habitats providing linkages for fauna movements in the area.

More details about the HCCREMS roadside marker scheme can be found at: www.hccrems.com.au/Programs/Roadside-Environments/Current-Activities.aspx.

Training

Training for local council staff is the best way to raise awareness of the RVMP across council, generating interest and skill and encouraging staff to make informed decisions about resource management on roadsides. Training of staff should include everyone from grader drivers, to administrators and elected representatives. The RVMP should also be supported by other organisations with an interest in roadside management, such as bush fire brigades and utility providers. It is an advantage to mix staff from these organisations in training sessions.

Training should address ecological principles, management of vegetation, soil and water, heritage areas, legislation, planning, threats to vegetation and engineering practices.

It is most important to train council maintenance staff and contractors in appropriate maintenance practices as outlined above, and the purpose of the SREA signs or road markers.

The REC encourages the following learning outcomes for council staff training:

- Explain the importance of managing the roadside environment including vegetation
- Explain competing uses of roadsides, for example road construction, road safety, environment and other uses.
- Identify issues in managing roadside environments, for example bushfire management, weed management, sediment and erosion control.
- Identify appropriate council plans and assessments, for example roadside vegetation management plans and REFs that guide roadside works.
- Identify roadside works from these plans and assessments that may impact on roadside environments.
- Describe appropriate roadside works in high conservation value areas across the following: road construction and maintenance; roadside rehabilitation; fire prevention works; slashing and spraying; firewood collection; livestock movement and grazing; road reserve boundary fencing; and, property access.
- Describe any community consultation measures for the appropriate roadside works.
- Describe reporting and communication requirements for the appropriate roadside works.
- Conduct maintenance and construction activities along roadsides using environmentally sensitive and sustainable practices.

For details of training organisations and trainers contact the REC Executive Officer (see below).

Community education

An interested community will assist in implementing the RVMP by being more aware of their impact on the roadside, behaving sensitively themselves and observing others. Involving the community in roadside activities will also help and can save time and money.

There are many ways of educating communities about the value of roadsides and appropriate management including of high conservation value areas. These include:

- Local newspapers and radio to highlight positive outcomes
- SREA signs and road markers
- Advertising through rate notices and council publications
- Pamphlets
- Maps
- Use of social media, including council's Facebook and Twitter
- Content on council and stakeholder websites
- Presentations to community groups and schools.

The REC produces a quarterly 'REC Newsletter' which highlights best practices in linear reserve environmental management. To subscribe, contact the REC Executive Officer (details below). Previous editions are available from the REC website: www.rms.nsw.gov.au/environment/downloads/rec_newsletters_dl1.html

Regulation

The methods outlined so far use persuasion to encourage people to look after their roadsides. Local councils and other authorities have rangers who regularly use the roads and monitor activities on the roadside. The LEP or DCP will have policies which can be regulated. Legislation at the State or Commonwealth level also provides for regulatory powers.

The effectiveness of regulation and legislative control is dependent on people knowing about it. Upon implementing any controls, they must be advertised in the local press and radio.

Stakeholder engagement and partnerships

Resources to implement the RVMP can come in the form of people, money or expertise.

Community groups or local businesses can be encouraged to contribute to the maintenance of roadsides through an 'Adopt-a-road' scheme. Already, there are examples in NSW where local communities have adopted lengths of road and undertaken to plant trees, raise awareness, and keep those areas free of litter and noxious weeds. Roadsides which are well cared for and in good condition contribute to the economy of a region by attracting tourism. Some local councils in NSW have established tourist trails in their LGAs to highlight roadsides, including those high conservation value areas.

Private businesses, schools, service and community groups can be involved in tree planting, weeding, litter removal or other activities on roadsides. Acknowledgement of the work of these groups is a good idea and could be achieved through erecting signage.

Landcare groups may also be interested in helping to manage a roadside environment. Roadsides often offer a group the opportunity to manage an area of remnant vegetation which contributes to catchment health and provides valuable experience.

Some groups specialise in community involvement of natural resource management activities. Organisations such as Greening Australia, Landcare, Coastcare, Clean Up Australia, Keep Australia Beautiful Council have expertise in getting the community involved. Schools, service groups such as Rotary, Lions and Apex, other sporting groups, local businesses and government departments can also become involved in roadside activities.

There are many organisations that use roadsides or have an interest in their management and can assist with the implementation of the RVMP. Gas, electricity and telecommunication suppliers may contribute to implementation. County Councils certainly need to be involved. Fire planning and protection assistance is available through fire control officers and the local bush fire management committee.

Funding opportunities

As highlighted, it is important for local councils to identify high priority sites for rehabilitation. Funds for these activities may not be included in council budgets, and assistance is sought through grants and other funding opportunities. Funds in the past have been provided for roadside rehabilitation and restoration projects by the NSW Environmental Trust and other funding providers.

Sponsorship can contribute to implementation of the plan. This can be in the form of money, goods or in-kind support. A local business may provide financial support or donate materials to do the works, or assist through the provision of services of a consultant. Sponsorship such as this needs wider acknowledgement and promotion, and the expectations from the sponsor and council should be negotiated up front in the project.

Restoration and rehabilitation projects

Funding for restoration and rehabilitation projects can be sourced from council budgets or from external sources such as a grants and sponsorship. In-kind support can be obtained from council staff, other agencies and not-for-profit groups.

There are several best practice guides to restoration and rehabilitation projects that can be used for roadside reserves. These guides include:

- The IUCN's Ecological Restoration for Protected Areas www.data.iucn.org/dbtw-wpd/edocs/PAG-018.pdf
- Best practice guidelines provided by the NSW Office of Environment and Heritage www.environment.nsw.gov.au/Search.

There are also many contractors that specialise in restoration and rehabilitation works. Their contact details can be readily accessed from the internet.

Examples

Examples of RVMP implementation projects can be found at: www.lgnsw.org.au/policy/roadside-vegetation-implementation-project/resources-and-case-studies.

The Roadside Environment Committee

The NSW Roadside Environment Committee (REC) was established in 1994 by the NSW Government in recognition of the environmental values of linear reserves including roadsides. The REC is an umbrella body of state agencies and environment groups that promotes and coordinates leading practice in linear reserve environmental management across the State. The REC identifies issues, and with land managers, works towards solutions.

The REC has taken a strategic approach to improving linear reserve environmental management in NSW. To do this, it has developed, implemented and evaluated a series of three-year strategic plans.

The objectives of the current REC strategic plan are:

- to achieve consistent, high quality of environmental management of NSW linear reserves
- to engage with key stakeholders and communities to improve linear reserve environmental management in NSW
- to address issues related to the management of linear reserve environments in NSW.

The REC website is at www.rms.nsw.gov.au/environment/roadsideenvironcommittee.

For more information

If you would like more information on roadside environmental planning and management, funding opportunities for projects or contacts within other organisations please contact the Executive Officer of the NSW Roadside Environment Committee.

Neil Dufty
REC Executive Officer
Phone: (02) 9354 0300
Mobile: 0437 130 283
Email: ndufty@molinostewart.com.au



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