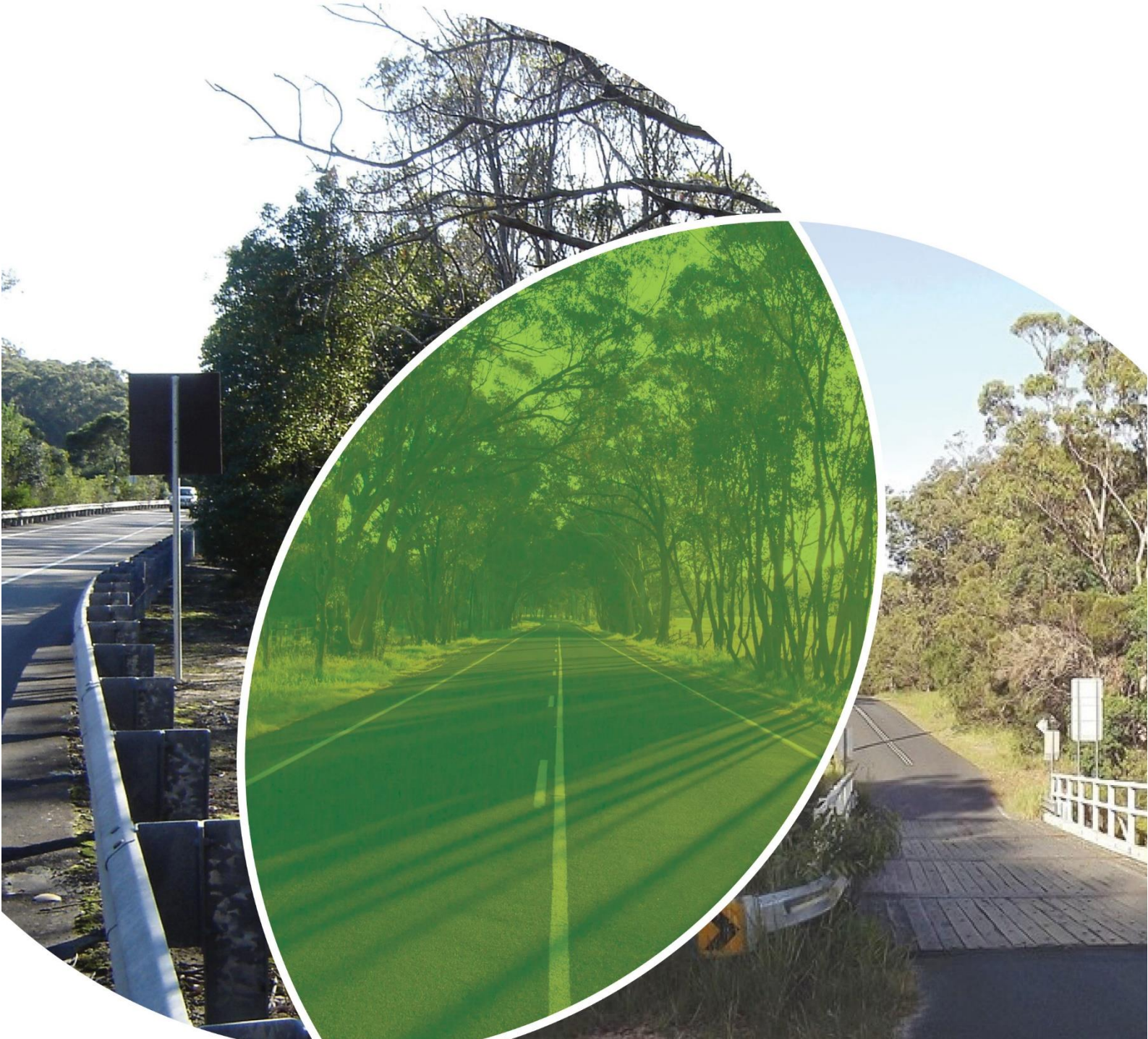
LOCAL GOVERNMENT NSW

Council Roadside Reserves

Council Roadside Environmental Management Framework



Acknowledgements

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The CRR project is funded by the NSW Environmental Trust to build the capacity of councils and to improve the management of roadside environmental values in NSW.

March 2020

NSW GOVERNMENT

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Abbreviations

Abbreviation	Description
AHIP	Aboriginal Heritage Impact Permit
APZ	Asset Protection Zone
BC	*Biodiversity Conservation Act 2016*
BFRMP	Bushfire Risk Management Plans
CREMF	Council Roadside Environmental Management Framework
CRR	Council Roadside Reserves Project
DCP	Development Control Plan
DPIE	NSW Department of Planning, Industry and Environment
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPBC	*Environment Protection and Biodiversity Conservation Act 1999*
GIS	Geographical Information System
IPR (or IP&R)	Integrated Planning and Reporting system
LCA	Local Control Authority (under *Biosecurity Act 2015*)
LEP	Local Environment Plan
LGA	Local Government Area
LGNSW	Local Government NSW
LLS	Local Land Services
MNES	Matters of National Environmental Significance
NPW	NSW *National Parks and Wildlife Act 1974*
NRM	Natural Resource Management
POEO	NSW *Protection of the Environment Operations Act 1997*
REF	Review of Environmental Factors
RFS	Rural Fire Service
TfNSW	Transport for New South Wales (includes the former Roads and Maritime Services)
RVMP	Roadside Vegetation Management Plan
SEE	Statement of Environmental Effects
SEPP	State Environmental Planning Policy
SOP	Standard Operating Procedures
TSR	Travelling Stock Reserves

Executive Summary

This Roadside Environmental Management Framework aims to support councils in NSW to conserve and improve roadside environments. It recognises that roadsides are natural assets and are subject to a range of legislative and planning requirements, with a variety of stakeholder interests and responsibilities. Roadsides are complex areas to manage and consideration needs to be given to issues such as:

- road safety
- road maintenance
- strategic planning
- roadside vegetation
- threatened or endangered flora, fauna and ecological communities, including matters of national environmental significance
- wildlife management
- erosion and sediment control
- soil management, including acid sulphate soils, soil salinity and erosion
- weed management
- surface water
- ground water
- scenic and recreational values
- fire management
- Aboriginal and non-Aboriginal heritage values
- utilities
- traffic studies
- noise and air pollution
- signage
- settlement strategy and economic development strategy.

Tools and case studies are presented in this report consistent with the Integrated Planning and Reporting framework, with a focus on councils' core activities of strategic planning, impact assessments and approvals, and on-ground works.

This document was prepared as part of the Council Roadside Reserves (CRR) project to enable the value of natural assets in roadside reserves to be embedded into councils planning, reporting and asset management systems (Integrated Planning and Reporting (IP&R) systems). Councils may use this document to identify adjustments to their current organisational procedures that may be trialled to improve roadside environmental management.

1. Introduction

1.1. Background

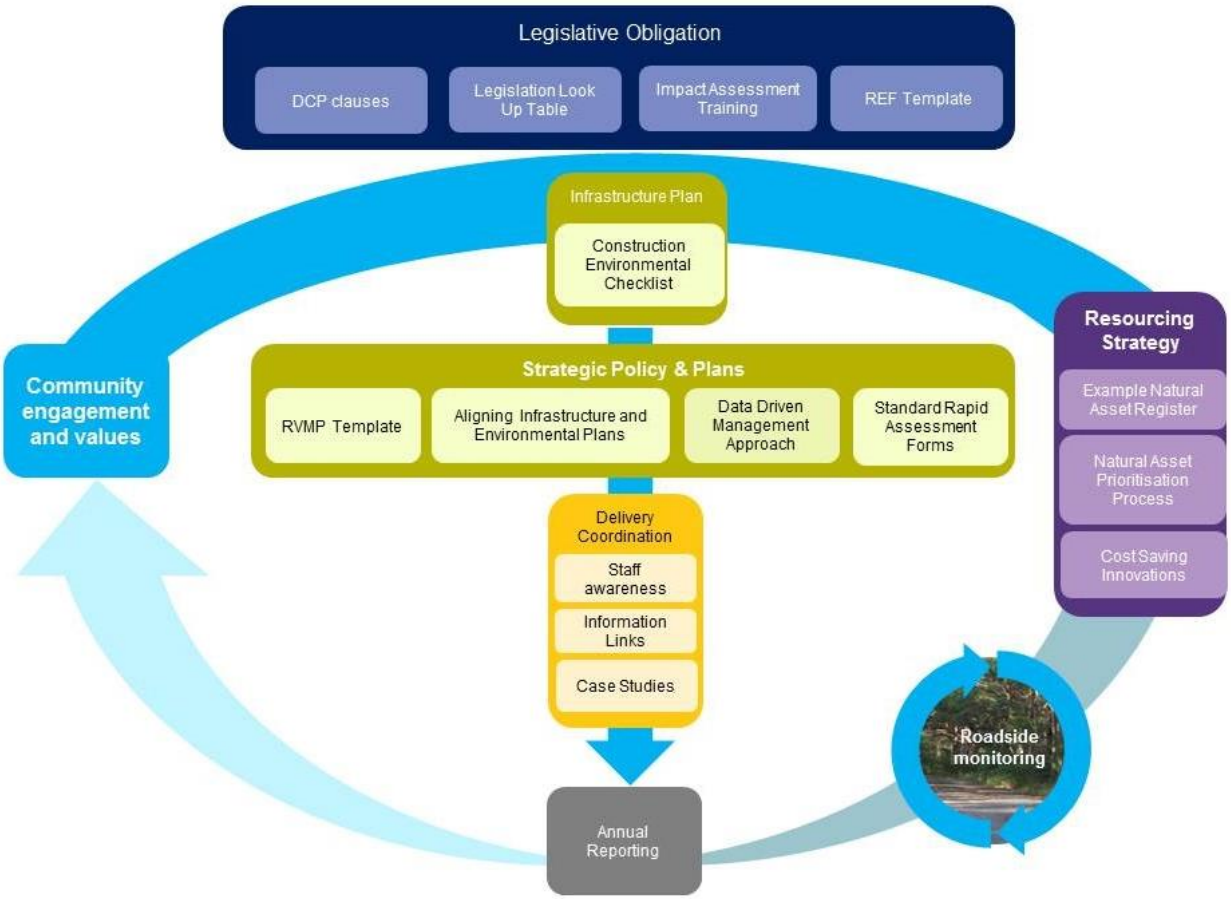
This document was prepared by Eco Logical Australia for local councils in NSW as part of the Local Government NSW (LGNSW) Council Roadside Reserves project (CRR). The CRR project, funded by the NSW Environmental Trust, works to build the capacity of councils, to improve the management of roadside environmental values in NSW. This will enable councils to be more active natural asset managers through understanding the value of their roadside reserves and planning for appropriate management, building partnerships and enabling strategic prioritisation of works according to biodiversity or ecological value.

1.2. Why is this Report Needed?

This document provides an overarching framework for roadside vegetation management by NSW councils. It identifies how roadside responsibilities fit within each step of the Integrated Planning & Reporting (IP&R) cycle. The intent is to embed roadside management activities into council operations with ongoing funding.

NSW Roads and Maritime Services (RMS) (now part of Transport for NSW) and the NSW Roadside Environment Committee have developed environmental management guidelines and standard operating procedures. Uptake of these resources by councils across NSW has been variable and lacked an overarching framework. This document builds on previous resources and work undertaken by councils, including Roadside Vegetation Management Plans (RVMPs).

Local government stakeholders have identified barriers to consistent, long-term management of roadside environments. Key barriers include the challenges of integrating natural and built asset management procedures, funding consistency, separation of staff responsibilities and access to applied resources. Stakeholders have highlighted the need to embed roadside environmental management into councils' Integrated Planning and Reporting (IP&R) framework (**Appendix A**) to help address some of these barriers.


Legislative Obligation
DCP clauses
Legislation Look Up Table
Impact Assessment Training
REF Template
Infrastructure Plan
Construction Environmental Checklist
Strategic Policy & Plans
RVMP Template
Aligning Infrastructure and Environmental Plans
Data Driven Management Approach
Standard Rapid Assessment Forms
Delivery Coordination
Staff awareness
Information Links
Case Studies
Annual Reporting
Community engagement and values
Resourcing Strategy
Example Natural Asset Register
Natural Asset Prioritisation Process
Cost Saving Innovations
Roadside monitoring

1.3. Purpose and Limitations of this Report

This document, known as the Council Roadside Environmental Management Framework (CREMF) aims to improve integration of roadside environmental management into other council activities including road planning, construction and maintenance consistent with IP&R. Embedding roadside environmental management in IP&R has the benefit of linking strategic planning, natural asset management, risk management, built asset maintenance, state of the environment reporting and budgeting cycles. The approach is designed to mainstream roadside environmental management into councils' overall service delivery and asset management planning responsibilities.

Approaching roadside environmental management through IP&R presents some challenges. This is a new lens for managing natural resources and aligning built and natural assets to the asset planning process is an emerging field of practice. Key to successful framing of the approach will be a robust discussion by the community of practice to test, refine and improve on the conceptual framework. When viewed as part of the whole road asset, the environmental values present can be more readily factored into asset maintenance works and considered in council's resource strategy.

This document provides a platform for piloting innovative approaches to improved roadside management whist recognising the diversity amongst councils. The framework may be used in discrete portions as required. The guidelines and tools are presented to assist councils in meeting regulatory requirements and achieve improved roadside environmental management. They are not designed to be onerous or obligate, and councils may adapt ideas and tools to dovetail to their specific requirements. Organisations with existing roadside vegetation management plans may find benefit in this updated compendium of resources provided by LGNSW. A self assessment checklist has been included in **Appendix D**.

2. Roadside Reserves and Values

2.1. Road Network

Road management in NSW is a function of road category and size, as shown below in Table 1. Main arterial roads are the responsibility of Transport for NSW (TfNSW) (includes the former Roads and Maritime Services (RMS)). Local councils are responsible for the management of regional and local roads as well as some state roads under contract to TfNSW.

Councils have the primary responsibility for land use planning in their Local Government Area and are responsible for the provision and management of a wide range of public infrastructure, amenity and services. This includes planning and provision of local road network to support local communities.

Other agencies, for example Local Land Services (LLS) and the Rural Fire Service (RFS), may also be involved in management of roadsides. This is discussed further in **Chapter 3**.

Table 1: Road network management

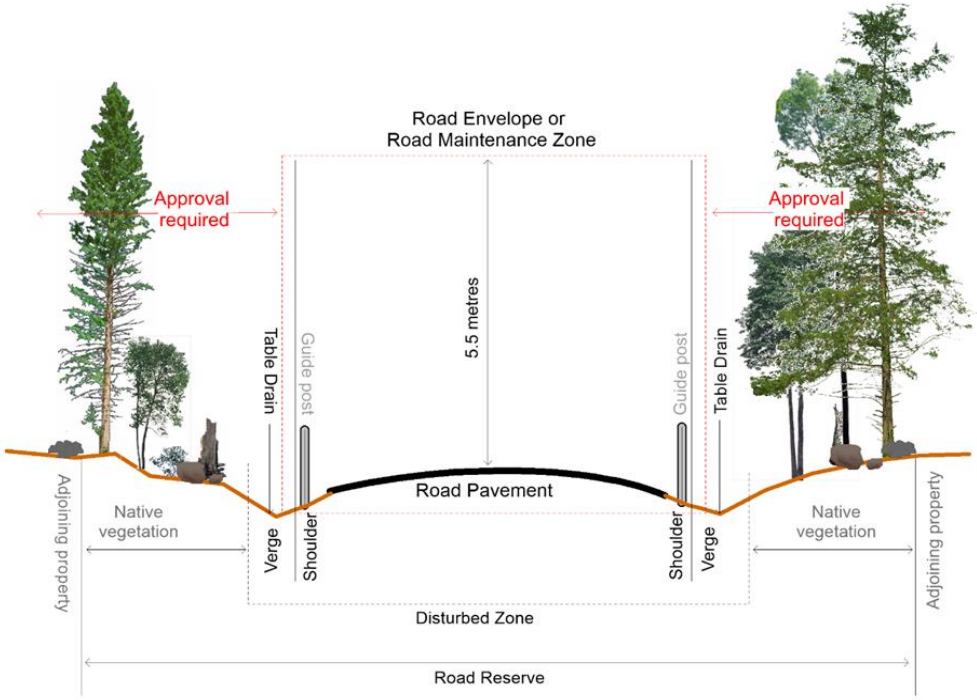
Road Type	Infrastructure Funding	Infrastructure Maintenance	Environmental Management
State Roads	Transport for NSW*	TfNSW or private contractors**	TfNSW RMS Environmental Policy RMS Planning and Environmental Assessment Manual
		Local Government under contract to TfNSW Road Management Council Contracts (RMCC)	Local Government to RMCC standards
Regional Roads	Local Government***	Local Government	Local Government
Local Roads (Sealed & Unsealed)	Local Government	Local Government	Local Government
Private Roads	Landholders	Landholders	Landholder statutory obligations

* The Federal Government also provides funding for a sub set of State Roads
** Or by public private partnerships in special circumstances
*** Can also include funding support from TfNSW and the Federal Government

2.2. Roadside Reserves

Local Government owns or is responsible for a significant amount of the ~2.5 million hectares of roadside vegetation in NSW (Dufty 2010). For the purposes of this framework a roadside reserve is defined as the entire width of the road corridor (fence to fence or boundary to boundary) along a given length of road. Features within the road reserve may include:

- road infrastructure
- roadside furniture and facilities
- drainage structures
- cleared verge areas
- vegetated areas (including areas of high conservation value)
- heritage items.



2.3. Roadside Values

Roadside reserves are a complex environment to work in due to competing values and issues. Councils are responsible in this regard to consider road safety, conservation, cultural values, firewood collection, bushfire risk, legal requirements, recreational use and development pressures. There is a need to manage linear roadside reserves for environmental objectives, recognising the ecological value of these areas rather than just their value as transport corridors.

Roadsides perform multiple functions, comprise a diverse range of environmental, economic, social and heritage values and provide a range of beneficial environmental and ecosystem services. Roadside reserves may support endangered ecological communities that are not represented in National Parks or other conservation areas (REC factsheet 1: *Managing Roadsides – Assessment*).

Roadside reserves are integral to the protection of the integrity of the hard road surface and safe road use. The conservation or establishment of roadside native vegetation may reduce maintenance costs by decreasing the need for mowing and weed control, stabilising banks and preventing road pavement waterlogging. Roadside vegetation may also contribute to reducing road accidents by decreasing headlight glare, reducing driver monotony and highlighting road delineation. Roadside vegetation can benefit adjacent agricultural production by providing shelter belts and reducing salinity encroachment (Napier proceedings of 17th ARRB Conference, Part 7).

Roadsides also frequently support an array of community uses. The values and services provided by well-managed roadside environments have been documented in many roadside vegetation management plans (RVMPs) and roadside environmental management strategies, as well as other sources. The array of services provided by roadside reserves that benefit the broader community are demonstrated below in Table 2.

Table 2: Roadside values

Environmental values	Seed source
	Wildlife habitat
	Habitat connectivity
	Weed suppression
	Sediment and erosion control
	Nutrient filtering/ water quality
	Salinity management
Heritage values	Cultural heritage such as middens, scarred trees, rock engravings and artwork
	European heritage, historic road markers, heritage roads, culverts and bridges
Recreation	Scenic amenity
	Shelter, shade and privacy
	Activities such as horse riding, cycling, walking
Commercial	Activities such as firewood harvesting, bee keeping, travelling stock routes
	Rest stops and associated business opportunities

Roadside environments vary significantly, as do the conservation values present within the road reserve. In heavily cleared rural areas, roadside vegetation may constitute the only remaining intact natural environment. Equally in urbanised contexts, vegetation is often highly fragmented which increases the importance of roadside vegetation as stepping stones between remnant patches. These remnants can provide valuable wildlife habitat and may support areas of core habitat when linked to other vegetation across the landscape. However, roadside vegetation continues to be under threat from poor management practices, despite these areas often containing high value remnant vegetation and threatened ecosystems.

Roadside vegetation may occur across multiple tenures. This project is focused on managing vegetation within the publicly accessible roadside reserve. Complementary management of adjoining vegetation is encouraged.

2.4. Threats to Roadsides

The roadside environment is subject to numerous and competing uses giving rise to pressures and threats to the values present. Uncoordinated management of roadside values exacerbates these pressures, may increase maintenance costs for councils and introduce risk to council's due

diligence obligations. There are several Key Threatening Processes (KTPs) listed under NSW and Commonwealth legislation that must be considered in managing roadside vegetation.

Remnant vegetation in the roadside may be degraded as a result of road maintenance works, construction works, insensitive road planning and design, and unregulated uses e.g. firewood collection, rubbish dumping. Common roadside activities that may impact protected cultural and environmental values include:

- vehicular access, tracks and parking
- routine environmental maintenance activities such as mowing, pruning, trimming
- vegetation control for sight distance
- weed and pest control activities
- firewood, plant and seed collection
- grading, excavation, digging or trenching
- road widening activities including stock piling and borrow pits
- stock grazing.

2.4.1. Key Threatening Processes

Key threatening processes do not regulate or prevent actions undertaken by property managers, however, they are designed to raise awareness of how threats to biodiversity are operating in NSW and/or nationally and to guide land managers in protecting threatened species and improving opportunities for biodiversity. Threat Abatement Plans are developed to guide abatement of the threat and contain management actions and research on the topic.

There are 39 Key Threatening Processes currently listed in NSW and 21 listed Nationally. Table 3 below contains examples of KTP's relevant to managing roadside environments. For additional information see the Key Threatening Processes Strategy on the DPIE website and the Frequently Asked Questions on the Department of Agriculture, Water and the Environment website.

Table 3: Relevant Key Threatening Processes

Key Threatening Processes	**Legislation**
Clearing of native vegetation	BC and EPBC Acts
Loss of Hollow-bearing trees	BC Act
Infection of frogs by amphibian *chytrid* causing the disease *chytridiomycosis*	EPBC and BC Acts
Infection of native plants by *Phytophthora cinnamomi*	EPBC and BC Acts
Invasion, establishment and spread of some weed species (e.g. garden plants, lantana, exotic perennial grasses, vines and scramblers)	EPBC and BC Acts
Bushrock removal	BC Act
Removal of dead wood and dead trees	BC Act
Invasion of native plant communities by exotic perennial grasses	BC Act

Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	BC Act

2.4.2. Firewood Harvesting

Firewood collection is a key management issue for councils and Local Land Services. Council is responsible for managing firewood collection on council managed land including roadside reserves. It is up to individual councils as to whether they permit collection of firewood within roadside reserves under their management and, if not permitted, how fines are levied in accordance with Office of State Revenue guidelines. This requires the formal adoption of a policy stating councils position, which must be communicated and promoted internally and externally. Councils should also ensure they consider the “Removal of dead wood and dead trees” KTP as outlined above when determining whether they will permit firewood collection.

Resourcing compliance is a major barrier to managing this issue given the often extensive and linear nature of roadside reserves. Routine site assessments may be undertaken (as part of routine maintenance works or through a rapid assessment) to monitor changes in fallen and standing timber stock through time, which will hopefully highlight activity areas for future targeted compliance actions.

Managing Firewood Harvesting

Some councils have moved towards prohibiting firewood harvesting from roadsides reserves to protect biodiversity and habitat values E.g. Bathurst Regional Council, Albury City Council, Junee Shire Council.

Other councils operate a permit system which provides some oversight of harvesting activities and allows the exclusion of collecting from certain areas for environmental protection reasons, e.g. Wagga Wagga and Federation Councils.

Community education is vital to support environmentally sensitive management of fallen timber and firewood harvesting. Further information is available on the Department of Agriculture, Water and the Environment website.

2.5. Natural Assets

Environmental values and services are not readily accounted for in economic terms and therefore the value of the roadside reserve as an asset may be overlooked in the planning process. Roadside maintenance costs associated with improved environmental values may then be perceived as an unmitigated cost to local government.

While the road infrastructure may be considered as a built asset, the roadside reserve containing vegetation, and other natural features may be considered as a natural asset. Within a local government strategic planning framework, areas of biodiversity can be considered as 'natural assets'. Natural assets can be defined as soil, water systems, plants and animals from which ecosystem services flow to provide financial, cultural and ecological benefits. Natural assets will appreciate with management over time. In contrast, built assets depreciate more slowly with management but will eventually require replacement. Arguably, natural assets cannot be replaced. Revegetation is costly, requires ongoing input over a long period of time and full vegetation composition (structural and species diversity) may never be returned. Lack of active management in the past has resulted in serious degradation of the environmental values of roadside reserves, in some cases to a point where it is impossible to reverse the decline. Like built assets, natural assets need to be actively managed to ensure they are functioning and continue to provide the important ecosystem services identified above.

There are many competing interests for council resources. Accordingly, natural asset management must be considered alongside other council programs/actions (e.g. sporting, recreation, infrastructure, facilities, etc.) and linked with council's IP&R framework. If treated in isolation, there is a tendency for natural assets to receive low priority. Resourcing must be set aside to maintain and where appropriate enhance the roadside reserve assets. This may be most effectively achieved by the manager of the built asset also managing the natural roadside reserve asset and undertaking works on both at the same time.

There is a need to align natural assets with built assets through councils' Integrated Planning and Reporting (IP&R) framework and in particular, through the asset planning process. A number of documents and templates have been produced as part of this suite of tools to assist councils to integrate the management of roadside reserve vegetation into pre-existing Asset Management Systems.

Toolkit:

Asset Management Plan Template for Roadside Trees

Asset Management Plan Template for Roadside Vegetation

The main opportunities for improving natural asset integration, include:

- High-level strategic integration of natural assets into asset management systems;
- Natural asset valuation and potential insurance of natural assets;
- Asset management planning – including monitoring and inspection, maintenance and renewals programming;
- Options for integrated asset management information systems suitable for natural asset management;
- Funding allocations; and
- Internal and external reporting requirements.

The asset needs to be described and put in context. A potential hierarchy for natural assets is:

Asset Class	Asset Type	Asset Component	Asset Subcomponent
Natural Assets	Bushland	Roadside reserve Riparian reserves	Trees Shrubs Grasses
	Trees	Street trees Roadside trees Reserves	
	Waterways/water bodies	Creek River Ocean Estuary Lake Wetland Pond	Riparian edge Weir Bed Water Bank Aquatic vegetation

Councils may also be interested in developing a natural asset register using the steps outlined on the following page and applying data collected in **Section 5**.

Steps Towards Developing a Natural Asset Register

To identify roadside reserve management in the (capital) works program it is beneficial to approach natural asset management in a common language to built asset management. A foundation step is to establish a simple natural asset register. In this project context the focus is on natural assets occurring in roadside reserves, however similar principles apply to natural assets more broadly.

Step 1: Determine the class of natural asset. This may identify classes of natural vegetation and natural waterways including those in roadside reserves.

Step 2: Assess the value of the natural asset. A simple, qualitative approach to valuing assets is to rank them based on agreed criteria. Criteria for natural assets may be their contribution towards conservation significance and irreplaceability. Conservation significance may already be indicated in council's related policies and plans such as biodiversity strategies, estuarine management plans, and natural areas management plans. Consider gathering an expert reference panel to assist in the development of agreed criteria.

(Optional) A quantitative approach considers land value, associated tourism value, maintenance and replacement costs. Investigate ecosystem services provided by natural assets and valuation research.

Step 3: Document the natural asset attributes in a natural asset register and geographic information system. Attributes include ownership, management control, total area, asset name, asset ID, related policies/plans, features present, asset condition, legal status such as endangered ecological community and associated road segment (and built asset ID).

Step 4: Set targets on the overall management goal for the asset. Targets will be informed by a combination of community expectations and council's natural resources policy. This step will inform the level of service required to match the community values for natural resource management and provision of infrastructure.

Step 5: Identify the financial cost required to restore/enhance the asset and maintain the asset in target condition state. Cost/benefit analysis of management scenarios may be useful to demonstrate the benefits of retaining patches of high quality vegetation (and other conservation values) or early management intervention to prevent decline of asset quality in comparison with restoration works required in degraded systems.

Step 6: Prepare management options with reference to existing policies and plans.

Natural Asset Service Planning

Blue Mountains City Council have included natural assets in their listed asset stock in the Resourcing Strategy (BMCC 2014). Council identified approximately 10,000 hectares of Terrestrial Ecosystems managed by BMCC including: temperate peat swamps on sandstone, threatened ecological communities, remaining schedule vegetation, non-schedule vegetation, 317 km creek lines, and 2 open water bodies (Glenbrook Lagoon and Wentworth Falls Lake).

BMCCs natural asset management is currently captured in a spatial-enabled service (MapInfo). This enables data capture of extent, type, condition and other features to be readily integrated. Bushland condition is currently determined from a visual assessment and then categorised into three broad categories; ‘degraded’, ‘recovering’ and ‘pristine’. These condition assessments vary in frequency from annually to three-yearly by dedicated council staff.

Council notes that “quantification of the value and defining the replacement cost for natural assets is complex. In the absence of an agreed national standard methodology for valuing natural area assets, work will continue on development of a suitable formula for recognising the real value of this important asset group”.

In the interim Council identified current expenditure and current customer service ratings. By identifying service aims in conjunction with strategic risks and risk management strategies, BMCC was then able to develop scenario lifecycle plans based on delivering reduced service levels, maintaining current service levels and improving service levels over a ten year forecast. This information can guide resourcing strategies and is presented in the same language and format as Council’s built assets.

More information from Blue Mountains City Council Resourcing Strategy

3. Roles & Responsibilities

Collaboration, engagement and communication are key to improving management of linear reserves. Stakeholder feedback acknowledged that most people know the value of collaboration but in practice this falls down for a number of reasons. Collaboration requires a driver to initiate momentum and without a clear need or benefit, the momentum of good intentions will slip overtime. There are three audiences to consider in managing the roadside environment: internal council departments, external organisations and agencies, and community members.

The aim of engagement is to provide clarity on council objectives for managing environmental values in roadsides across separate council sections and externally in partnership with key stakeholders. It provides opportunities for co-learning and refinements of field practices, as well as improved adherence to management of conservation values. Through engagement, councils are able to leverage prior learning on managing linear reserves. There is also greater potential to identify and broker cost-sharing arrangements that deliver more effective implementation of conservation work. Without engaging internal council stakeholders, long term, systemic improvements to roadside vegetation management will be constrained.

3.1. Council

To foster consideration of the natural assets alongside management of the built road and other council asset management, it is necessary to engage laterally across teams and vertically from elected representatives to depot teams.

No two councils are alike, however, each has capacity and resources to support their roadside management activities**. Table 4** below provides a broad summary of roles and responsibilities for roadside environmental management. This illustrates how disparate corporate knowledge is across this issue and underlines the value in internal collaboration. In many smaller councils, a single staff member may carry out multiple functions, or resources may be shared through collaborative arrangements between departments.

Because the roadside reserve will be considered and managed as a council natural asset, it is important for the council asset manager to either oversee the preparation of the strategic planning document or have a comprehensive consultation and signoff role. The asset manager may be a team leader in council's engineering department who is also the manager for the built road infrastructure asset. Technical advice may also be sought from environmental, parks/bushcare, weeds or depot works teams who may provide expert advice when required. Council's environment manager or equivalent will have involvement in monitoring and evaluating the effectiveness of the implementation of natural asset management actions. Responsibility of one asset manager to implement works to improve and maintain both built and natural roadside assets could have advantages in:

- the efficient scheduling of works on both the built infrastructure and the roadside vegetation (for example works to clear culverts and drains could be carried out with weed control/vegetation pruning works).
- reducing the risk of inadvertent impacts upon natural assets resulting from infrastructure works because the asset manager is responsible for the protection and maintenance of both assets.

Table 4: Roadside management roles across council

Role	Officer	Rationale
Asset management (including roadside environmental assets)	Roads engineers	Single point of responsibility for all aspects of road management and maintenance
Environmental impact assessment	Environmental officers	Expertise in environmental assessment such REF's. Provides degree of separation from asset manager and environmental assessment processes
Environmental expert advice	Environmental officers	Provide technical advice, assistance and expertise on general environment and biodiversity matters to assist asset managers and field staff
Spatial data management	GIS Officer	Custodian of spatial data. Provision of data information "products" to assist asset engineers, environmental staff and field staff to meet environmental safeguards, such as protecting endangered ecological communities or threatened species, etc.
Work site management	Supervisors and engineers	Responsibility for risk assessment, impact mitigation, incident reporting
Work site operations	Field staff	Participate in risk assessment, impact mitigation, incident reporting

Steps Towards Internal Collaboration

1. Identify key internal staff to consult on roadside vegetation management. This may be done as part of developing or updating an Infrastructure Plan, a RVMP, a natural asset register, or similar.
2. If there are key gaps in staff expertise, options include:
   a. Refer matter to corporate planners for consideration in the workforce strategy
   b. Identify role sharing to maximise resources
   c. Seek funding from external services providers for technical advice or training
3. Invite staff to participate and provide reasons why e.g. aligning plans, exploring cost sharing options, gaining expertise, identifying improvements for service delivery.
4. Agree on assigned roles and responsibilities in delivering integrated roadside management. These may be formal responsibilities e.g. linked to action plan within a RVMP or informal arrangements e.g. Mid Coast Council Collaboration Case Study for cost saving.
5. (Optional) Formalise agreed delegation/consultation arrangements within RVMP or Corporate Procedure Register e.g. Kyogle Road Network Management System Overview (**Appendix E**).
6. Identification of responsibilities of staff positions (mitigates personnel changes over time).

Council Collaboration

Weed management is a significant issue in managing biodiversity values in roadside environments. The managers of different internal operational work groups within the Mid Coast Council collaborated to coordinate weed control works with the roadside infrastructure maintenance schedule. The efficiencies achieved through cost sharing and joint resourcing of traffic management measures, chemical and other weed control resources and staff resources resulted in an increased:

- ability to deliver roadside weed maintenance
- amount of roadside maintenance works delivered on regional roads per annum.

This helped Council address:

- Key Direction 1.4 in the Community Strategic Plan (linked to the Delivery Program 2013-2017 and Operational Program 2014-15)
- Consolidated asset management plan ·
- Noxious weeds plan
- Work Health Safety system

See the Mid Coast Council Case Study for more information.

3.2. External Organisations and Agencies

3.2.1. Transport for NSW (includes the former Roads and Maritime Services (RMS))

TfNSW has an environmental policy commitment to managing potential impacts on the environment including water, biodiversity, contaminated land, acid sulphate soils, erosion and sedimentation, noise, heritage, air quality and waste. This has led to the development of numerous technical manuals and guidelines, many of which are published on their website.

The Road Maintenance Council Contract (RMCC) establishes a collaborative contractual relationship between RMS (now TfNSW) and each council to deliver road maintenance. Councils are being invited to participate in a process which aims to lift the standard of risk and asset management by fostering the exchange of ideas, work practices and planning methodologies, with the ultimate result of improving value for money. The concept of continuous improvement is central to the RMCC.

Consultation with councils indicated a perceived disparity between the work approaches for RMCC work and internal council maintenance programs. The RMCC provides a robust operational framework for roadside environmental management and these principles may be applied to all roads, not only those under the RMCC. Councils not party to RMCC arrangements should contact TfNSW for access to information on procedures if they are not available on their website, or for further information.

RMS (now TfNSW) host the NSW Roadside Environment Committee, which was established by the NSW Government comprising representatives from 12 organisations including local government, to work collectively to promote and coordinate best practice linear reserve management.

TfNSW Resources

Councils can contact TfNSW for information requests pertaining to RMCC procedures and tools not published on their website. There are a range of resources available on the website:

https://www.rms.nsw.gov.au/about/environment/protecting-biodiversity/index.html

RMS biodiversity guidelines

TfNSW Local Government Relations

A suite of useful guides are also available through the Roadside Environment Committee

3.2.2. Local Lands Service – Travelling Stock Routes and Reserves (TSRs)

Travelling stock routes and reserves are parcels of crown land, including designated road corridors, reserved under legislation for use by travelling stock. Local Land Services (LLS) is responsible for the care, control and maintenance of almost 500,000 ha of TSRs in NSW.

TSRs provide pasture reserves for travelling or grazing stock. These reserves can be beneficial in times of drought, bushfire or flood. LLS manages the land to strike a balance between the needs of travelling or grazing stock and the conservation of native species. The role of LLS in managing TSRs includes:

- authorising and monitoring stock and other users
- controlling weeds listed in the Regional Strategic Weed Management Plan and under general biosecurity obligations
- controlling pest animals and insects
- providing and maintaining fencing and other infrastructure
- considering land management and animal health legislation.

These functions overlap with council roadside reserve activities in areas where travelling stock routes follow the road corridor. LLS recognise the need for consistent and collaborative approaches for linear reserves, such as roadside and travelling stock reserves and environmental assessment and data management systems have been developed to support a standardised approach to linear reserve management across NSW, the Rapid Assessment Method, which is described in more detail in Section 5.3.

Collaborative Weed Management

In 2010 an infestation of Chilean Needlegrass (CNG), a declared class 3 noxious weed (under former Noxious Weeds Act) and Weed of National Significance was discovered in Tumut Shire near Adelong Gap.

Initially the infestation was managed as part of an in-house weed control program that lacked a strategic regional focus. Subsequently the ranger/noxious weeds inspector from Tumut Shire Council (now Snowy Valleys Council) prepared a successful multi-stakeholder grant funded project for the management of CNG.

The existing weed control program was substantially expanded through grant funding and both in-kind and actual contributions from multiple stakeholders working collaboratively. These included:

- Snowy Valleys Council
- Australian Rail Track Corporation
- John Holland Group
- National Parks and Wildlife Service
- Local Land Services
- Roads and Maritime Services
- Private landholders

The expected goal through its initial (3 year) phase was 40%-60% decrease in CNG infestation in areas under management and containment to prevent further spread.

However, the project saw 95%-97% decreases of CNG in treated areas and more than 2000 native tree species planted to assist in habitat recovery processes.

See the Snowy Valleys Case Study for more information.

3.2.3. Rural Fire Service

Councils have responsibilities under the *Rural Fires Act 1997,* which is administered by the NSW Rural Fire Service (RFS).

Some road reserves may be covered by local Bushfire Risk Management Plans (BFRMPs). A BFRMP is a comprehensive document that maps and describes the level of bush fire risk across an area. The BFRMP identifies assets within the community at risk from bush fire, assesses the level of risk to those assets, establishes treatment options to deal with the risk and assigns responsibility for carrying out those treatments. The BFRMP is used to determine where mechanical clearing or hazard reduction burns are conducted, which areas require specialised fire protection, and which areas need to be targeted for community education.

Where possible, it is important to link BFRMPs with RVMPs for consistent planning. Environmental approval may be required for any activity which involves the modification of vegetation and/or the production of smoke.

Councils that are planning to conduct bushfire hazard reduction works on their roadsides should apply for an environmental assessment through the NSW RFS.

3.2.4. Other Organisations

There are a range of other organisations with a stake or interest in the roadside environment. These include State Government agencies such as DPI Lands, DPI Water and DPIE, as well as utility providing services such as water, power and telecommunications, Local Aboriginal Land Councils, and community groups such as Landcare.

3.3. Community Stakeholders

Community values drive IPR, which are articulated through the Community Strategic Plan. Managing roadside reserves spans two key community concerns, the provision of road infrastructure and protection of environmental values. Linear reserve management has the potential to contribute to council's quadruple bottom line with respect to social, environmental, economic and civic leadership outcomes.

Community stakeholders have an important role in elevating the importance of roadside management and supporting endeavours to achieve environmental outcomes on the ground. There is a wide diversity of views, as with most land management, on the environmental values of roadside environments. In some local government areas there is a strong interest from sectors of the local community on the biodiversity values of roadside vegetation and an increasing expectation that the council play an active role in roadside environment conservation initiatives. Conversely in other local government areas community apathy and ignorance of the significant environment values of the roadside environment may conflict with conservation objectives as a result of damaging activities such as firewood collection, rubbish dumping, vegetation clearance, planting exotic tree and shrub species into native vegetation areas or modification by adjacent landholders.

"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."

REC Factsheet 3: Managing Roadsides – Implementation

Furthermore as some roadside remnants are, at times, the last remaining examples of particular vegetation communities, they play a role in improving public awareness of nature conservation and provide opportunities for education in botany and ecology.

There are many approaches and existing toolkits to educate and engage local communities. The challenge is to raise awareness about the environmental values and the management of local roadsides. Tools include providing information on the council website and in rates notices, using the media such as the newspaper and radio to highlight positive stories about the local environment, production of information brochures and factsheets for distribution at local libraries and shopping centres and presentations to local schools and community groups. A range of examples are provided throughout this document.

Local Landcare groups may become actively involved in restoration works in larger linear reserves and contribute to planting native vegetation and undertaking weed control, following a full WHS assessment of traffic safety issues beforehand.

Community monitoring and reporting may contribute valuable data to assist council management responses. As above, collecting information from the roadside environment is potentially risky so this initiative needs to be subject to a full risk assessment. Citizen scientists are not expected to be experts (however, some are), so basic monitoring is suitable. Recent advances in technology such as the use of a mobile phone makes the data collection process simple and readily

accessible for the volunteer. Examples of the types of information that could be collected and used in council roadside management include:

- flora and fauna
- photo monitoring & location
- weed location or extent
- illegal clearing
- degradation such as dumping
- observations of pest species
- habitat observations e.g. bird use of tree hollows
- significant soil erosion events
- bushfire events.

The collected information should be verified by a responsible council officer and, where useful, used to update the natural asset register.

Steps Towards Raising Awareness of Roadside Values

Initiate support for change by promoting the local value of roadside environments with particular emphasis on the areas or topics that may be improved in your local area.

Provide accessible, concise and targeted information on why the areas are important and what is required to protect or improve their condition. The goal is to seed ideas and links across stakeholders internally and externally.

Consider a separate strategy for internal promotion and wider community awareness raising.

Establish a clear understanding of the context of the promotion, this will inform the timing, content and delivery mode of the material.

Be clear beforehand on whether the communication is for passive absorption or active feedback. It may be used to flag council's intent to actively invest in this area or to promote the development of a policy or plan under this framework. All communications have the potential to raise expectations, so a contact point to coordinate responses needs to be established beforehand.

Suggested steps include:

Step 1: Research notable local roadside environmental or heritage features, such as endangered species or ecological communities, areas of habitat connectivity or heritage items. Information sources include Atlas of Living Australia, NSW Bionet, SEED, care groups, roadside management plans, council's geographical information system and expert knowledge.

Step 2: Develop a short thought piece or similar promotional material to raise awareness on the value of local linear reserves. Localised information will help bring the issue alive more than generic information. For example "Did you know that a recent study found that the vulnerable squirrel glider (*Petaurus norfolcensis*) crossed on one rope-bridge (insert study area) at least once every 4.5 weeks over a 32-week period?" (Goldingay *et al* 2013).

Step 3: Before publication verify the information sources directly where possible. Talking to authors or visiting sites can provide additional information, flavour and context.

Step 4:

Incorporate an article in council's community newsletter or social media

or

Provide a news item for councils' intranet or noticeboard

or

Develop a short briefing note on the matter for elected representatives prior to public promotion.

Step 5: Consult the IPR manager on how the information may be useful for the next round of community consultation forums (if timing is suitable).

Collaborative Weed Management

Campaspe Council (Victoria) has developed a Community Roadside Management Handbook designed for the general community, including landholders, fire prevention agencies and Landcare groups.

The handbook provides educational and instructive information across a range of topics including:

- Environmental values and significant roadside vegetation
- Weed management and hygiene
- Protection of waterways and wetlands
- Protection of cultural heritage
- Environmental considerations, approval requirements and point of contact for common roadside activities, including:
    - Firewood collection
    - Fire prevention
    - Stock movement, droving and grazing
    - Permanent livestock crossings
    - Cultivation and ploughing
    - Slashing
    - Cropping and haymaking
    - Machinery movement
    - Roadside revegetation activities
    - Seed collection

The handbook provides an excellent example of a community–level document designed to educate and raise community awareness regarding roadside values and behaviours. The handbook is available from Campaspe Council.

4. Legislation

This chapter provides a summary of key legislation and statutory obligations on councils when managing roadside environments. Risk management strategies are a key driver for councils to establish and implement environmental management in roadside reserves.

There is a wide range of legislation relating to the management of roadside reserves that a council must be aware of and demonstrate compliance with. Due diligence may be facilitated within a council through a range of measures, such as identifying roadside reserve areas with high biodiversity values, the adoption of standard operating procedures for routine roadside maintenance activities and undertaking a sound environmental assessment of works proposed within a roadside reserve. The implementation of these measures should be embedded within the council structure through internal training and, regularly evaluated, through a monitoring and review process.

Key legislation and its relevance to council roadside management is detailed below in **Table 5**. The majority of council roadside activities are either maintenance works or new activities, which are subject to the Part 5 assessment pathway under the *EP&A Act 1979*.

The information presented within this document is generic and should not be relied on for development assessment and determination. Any number of environmental values may be present for each activity and it will be necessary to undertake an investigation into the level of assessment required on a case by case basis.

4.1. Recent Legislation Changes

There has been significant legal reform in NSW recently that may impact council roadside management. This section outlines relevant considerations as well as a general overview, which identifies the current regulatory context for key matters.

4.1.1. Vegetation Management and Biodiversity Conservation

Native vegetation and biodiversity conservation in NSW are now managed under a framework of three primary statutes. the *Biodiversity Conservation Act 2016* (commenced 25 August 2017), the *Local Land Services Act 2013* (Amendment 2016) and the State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017.

The *Biodiversity Conservation Act 2016* (BC Act) replaced the *Threatened Species Conservation Act 1995* and parts of the *National Parks and Wildlife Act 1974.* The BC Act 2016 sets out offences relating to the protection of animals and plants, contains licence requirements for activities which may affect threatened species and ecosystems, contains provisions for listing species and ecosystems, regulates the impact assessment for threatened species ('assessments of significance') and details biodiversity offset requirements. The Biodiversity Assessment Methodology (BAM) sets out assessment and reporting requirements for the impacts of developments, including Part 5 activities, on biodiversity.

Further information and tools on the *Biodiversity Conservation Act 2016* are available from DPIE.

The State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 ('Vegetation SEPP') regulates the clearing of vegetation in urban local government areas, as well as urban and environmental zones across the State, where clearing does not otherwise require development consent under the *Environmental Planning and Assessment Act 1979*. Vegetation clearing, associated with Part 5 activities, that is authorised under s60O of the *LLS Act* are not subject to the Vegetation SEPP.

Vegetation in rural areas is governed under the *Local Land Service Act 2013* and guided by the Native Vegetation Regulatory Map. The map identifies regulated land categories and associated requirements under the Act. The definition of 'native' vegetation is set in Part 5A, Division 1, Section 60B. Land management codes apply for landholders that may be adjacent to road reserves. Further information on land management is available from the LLS.

Guidance for councils on biodiversity and vegetation reforms is available from DPIE.

Additional guidance for councils on biodiversity assessment and decision pathways has been developed by Hunter Councils (Flowchart for non Interim Designated Areas).

4.1.2. Coastal & Fisheries Management

In addition to the primary instruments above, biodiversity management is also regulated under the *Fisheries Management Act 1994*, the *Coastal Management Act 2016* and the State Environmental Planning Policy (Coastal Management) 2018.

The *Coastal Management Act 2016* took effect on 3 April 2018 with the release of the Coastal Management SEPP 2018 and gazettal of the Coastal Management Manual. This Act replaces the *Coastal Protection Act 1979* and pertains to identified management activities in the coastal zone. The Coastal Management SEPP consolidates and replaces the former SEPP 14 Wetlands, SEPP 26 Littoral Rainforest and SEPP 71 Coastal Protection. The coastal area is defined in dynamic maps available from SEED.

Further information is available:

- Coastal Management SEPP
- Coastal Management Toolkit.
- https://www.planning.nsw.gov.au/Policy-and-Legislation/Coastal-Management

4.1.3. Weed and Pest Management

The *Biosecurity Act 2015* commenced in 2017 following the development of supporting subordinate regulation, policies and procedures. The *Biosecurity Act* replaces a number of existing Acts, including the *Noxious Weeds Act 1993*. The NSW Department of Primary Industries (DPI) administers the Act and determines the weed species covered by regulatory tools such as Prohibited Matter, Control Orders and Biosecurity Zones.

Regional Strategic Weed Management Plans (RSWMP) have been developed for each region and are important in identifying regional priority weeds, including management objectives and how land managers might meet requirements under the General Biosecurity Duty. The NSW Weed Risk Management system underpins the weed prioritisation process. A copy of the Regional Strategic Weed Management Plans for each region is available from LLS.

Councils have dual responsibilities under the Biosecurity Act in carrying out the General Biosecurity Duty and as Local Control Authorities. The General Biosecurity Duty (Part 3 s22) is:

Any person who deals with biosecurity matter or a carrier and who knows, or ought reasonably to know, the biosecurity risk posed or likely to be posed by the biosecurity matter, carrier or dealing has a biosecurity duty to ensure that, so far as is reasonably practicable, the biosecurity risk is prevented, eliminated or minimised.

More information about the biosecurity legislation, including handy fact sheets are available from DPI.

When undertaking activities on Crown Land, council must refer to the current applicable Plan of Management. Under the *Crown Land Management Act 2016* all Plans of Management are required to comply with governance requirements for councils managing crown land. Check your Council register of Plans of Management to identify changes relevant to your proposed activities.

Table 5: Legislation

Legislation/Policy	Description	Relevance to Council Roadside Management
Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)	The EPBC Act aims to protect Matters of National Environmental Significance (MNES) which includes EPBC-listed threatened species and endangered ecological communities. Actions that may have a significant impact on MNES are likely to be considered a Controlled Action and require approval from the Minister for the Environment.	Roadside vegetation management should avoid or minimise impacts to MNES. Where impacts are unavoidable an assessment should be undertaken by an ecologist. If the impacts are likely to be significant a referral to the Commonwealth should be made to determine whether the Commonwealth consider it a Controlled Action requiring approval under Part 9 of the Act.
NSW *Environmental Planning and Assessment Act 1979* (EP&A Act)	The EP&A Act is the principal planning legislation for NSW. The Act provides the statutory basis for environmental assessment of development as well State Environmental Planning Policies and Local Environmental Plans. Note Amendments to the EP&A Act have changed numbering. Refer to the published 'New Act Sections Guide July 2018' for all numbering changes.	Most roadside management will be undertaken by or on behalf of Council and will therefore be permissible without consent (see Infrastructure SEPP below). The proposed works must however be subject to an environmental assessment under Part 5 of the EP&A Act. In undertaking an environmental assessment of the activity, council must: • consider whether the activity will have a significant impact on threatened species or endangered ecological communities (Section 7.3 Biodiversity Conservation Act); and • take into account to the fullest extent possible all matters affecting or relating to the environment (section 5.5 of the EP&A Act) • Consider the matters listed in s228 of the EP&A Regulation 2000 If impacts to the environment are significant, an Environmental Impact Statement is required. Council may choose to do an environmental assessment of proposed roadside works or assess individual areas of work.

Legislation/Policy	Description	Relevance to Council Roadside Management
NSW *Coastal Management Act 2016*	The *Coastal Management Act 2016* aims to manage the coastal environmental of New South Wales. The act defines and sets out management objectives for the following management areas: • Coastal wetlands and littoral rainforests: land which displays the hydrological and floristic characteristics of coastal wetlands or littoral rainforest and land adjoining those features • Coastal vulnerability area: land subject to coastal hazards • Coastal environment area: land containing coastal features such as the coastal waters of the State, estuaries, coastal lakes, coastal lagoons and land adjoining those features, including headlands and rock platforms • Coastal use area: land adjacent to coastal waters, estuaries, coastal lakes and lagoons where development is or may be carried out.	Development that is carried out within coastal wetland and littoral rainforest areas are considered designated development. Development for the purpose of environmental protection works may be carried out by or on behalf of a public authority without development consent if the development is identified in the relevant certified coastal management plan or Plan of Management in accordance with either the *Local Government Act 1993* or *Crown Lands Act 1989*. Development within coastal vulnerability, coastal environment and coastal use areas is permitted with consent. Provisions within the Infrastructure SEPP allow routine and emergency maintenance works subject to clause 8(3) & 8(4).
NSW *Biodiversity Conservation Act 2016* (BC Act)	The *Biodiversity Conservation Act 2016* provides a framework for the protection of biodiversity in NSW. The Act covers • Protection of animals and plants, • Areas of outstanding biodiversity value • Biodiversity conservation licences, • Listing of species and ecological communities, • Key threatening processes,	The BC Act contains provisions for threatened species protection that must be considered by councils. The Act outlines environmental assessment requirements for activities including road/roadside works being assessed under Part 5 of the *EP&A Act 1979*. Threatened species and endangered ecological communities listed in the Act are to be considered when undertaking an environmental assessment in accordance with Part 5 of the EP&A Act (described above) and Section 7.3 of the BC Act. The 'test of significance' (5-part test) is used to assess biodiversity impacts for the proposed activities. If a significant impact is likely, council may be required to undertake a Species

Legislation/Policy	Description	Relevance to Council Roadside Management
	• Biodiversity conservation program, • Biodiversity offset scheme, • Investment strategy and private land conservation agreements, • Biodiversity assessment and approvals under the EP&A Act, • Biodiversity Certification, • Public consultation requirements, • Establishment, functions and operations of the Biodiversity Conservation Trust, • Regulatory compliance and • Penalties.	Impact Statement (SIS), Environmental Impact Statement (EIS) or a Biodiversity Development Assessment Report (BDAR) in accordance with the Biodiversity Assessment Method (BAM). The 'test of significance' considers impacts on threatened species and ecological communities, and their habitats. As outlined in Section 7.3 of the BC Act, the five factors considered by undertaking a test of significance are; • Adverse effects on the life cycle of a species • Adverse effects on ecological communities • Adverse effects on habitats • Adverse effects on areas of outstanding biodiversity value • Key threatening processes
NSW *Fisheries Management Act 1994* (FM Act)	The FM Act aims to conserve, develop and share the fishery resources of NSW for the benefit of present and future generations. The Act protects both marine vegetation and threatened species, including species found in inland rivers.	A permit or consultation under the FM Act is required for the following activities: • harm to marine vegetation (such as mangroves, saltmarsh, seagrass and microalgae) – S205 • dredging of creek bed, land reclamation, excavation of bed or bank or obstructing fish passage in a Key Fish Habitat creek – S199, S200, S218, S219 This may be triggered by bridge or culvert works.
NSW *National Parks and Wildlife Act 1974* (NPW Act)	The objects of this Act relate to the conservation of nature and objects, places or features and to provide for the management of land reserved under the Act. The Act protects native plants and animals as well as Aboriginal places and Aboriginal objects.	An assessment in accordance with the Due Diligence Code of Practice is required to identify potential risks to Aboriginal objects (such as scar trees) and places. Depending on the level of risk, further Aboriginal Cultural Heritage Assessment may be required to identify and mitigate potential impacts to

Legislation/Policy	Description	Relevance to Council Roadside Management
		Aboriginal objects or place, including appropriate consultation with Aboriginal representatives and stakeholders. If impacts to Aboriginal objects or places cannot be avoided, an Aboriginal Heritage Impact Permit (AHIP) must be obtained under section 90 of the NPW Act. Roadside management should avoid impacts to Aboriginal places and objects. Works within National Parks Estate, where an easement **is not** in place, requires approval for the works from the DPIE. Works adjoining a National Parks Estate or where an easement **is** in place, requires notification of the works to the DPIE.
NSW *Heritage Act 1997*	The Heritage Act sets out the process by which items or places of State and Local Heritage Significance are protected and managed. Items are considered significant in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.	An approval from the DPIE, is required when making changes to a heritage place listed on the State Heritage Register or covered by an interim heritage order, or when excavating any land in NSW where you might disturb an archaeological relic. If the works are only minor in nature and will have minimal impact on the heritage significance of the place, they may be exempted from the requirement to submit a Section 60 application for approval or Section 140 application for permit.
NSW *Biosecurity Act 2015*	The broad objectives for the Biosecurity Act are to manage biosecurity risks from animal and plant pests and diseases, weeds and contaminants by: • preventing their entry into NSW; • quickly finding, containing and eradicating any new entries • effectively minimising the impacts of those pests, diseases, weeds and contaminants that cannot be eradicated through robust management arrangements;	Roads can act as major transport corridors for pest species (plants and animals, etc). The Biosecurity Act imposes obligations on owners and occupiers of land to control pest species, for example weeds declared for their area, including on land that the Local Control Authority itself owns or manages such as roadsides.

Legislation/Policy	Description	Relevance to Council Roadside Management
	Of specific relevance for local councils, the Biosecurity Act repeals the *Noxious Weeds Act 1993*, but maintains provisions which establish councils as Local Control Authorities (LCAs).	
NSW *Protection of the Environment Operations Act 1997 No. 156 (POEO Act)*	The POEO Act provides a single licensing arrangement relating to air pollution, water pollution, noise pollution and waste management. The POEO Act contains a core list of 'scheduled activities' that require a licence. This list includes road construction; however the definition is restricted to roads that are of 4 or more lanes.	For council roadside works on roads with 4 or more lanes, the council will need to obtain the necessary licences in relation to proposed activities (if required) and ensure operations are in compliance with approvals. Any work potentially resulting in pollution, including erosion and sedimentation must comply with the POEO Act.
NSW *Roads Act 1993*	The Roads Act regulates the implementation of various activities on public roads. Section 159(1) provides the power for the Roads and Maritime Services (now Transport for NSW) to give control of roads to councils, which then become a roads authority under the Act in which case the road becomes a public reserve under the council's duty of care.	Section 88 – Tree Felling states: 'a roads authority may, despite any other Act or law to the contrary, remove or lop any tree or other vegetation that is on or overhanging a public road if, in its opinion, it is necessary to do so for the purpose of carrying out road work or removing a traffic hazard.' Councils should, however, exercise due diligence where areas of high biodiversity may be impacted, by undertaking an assessment and either avoiding or mitigating impacts. Maintenance works e.g. trimming of regrowth should be conducted in accordance with the original assessed impact. New works or new roads will require a new assessment. See useful information resources for further information.
NSW *Rural Fires Act 1997* (RFS Act)	The NSW Rural Fires Act is designed to assist in the protection of infrastructure and assets (environmental, economic, cultural, agricultural and community) from destruction or damage from bushfires. The Act sets out regulations to identify and manage bushfire prone land, establishment of bush fire management committees, fire prevention measures, and penalty offences. The Rural Fire Service is designed to function within rural fire districts under Part 2 of the Act.	This Act will only be triggered in mapped bushfire prone lands. Bushfire prone lands require consideration during the development application process or where council activities place temporary works depots including fuel storage in bushfire prone lands. Further operational considerations are required for works proposed during periods of total fire ban.

Legislation/Policy	Description	Relevance to Council Roadside Management
NSW *Water Management Act 2000* (WM Act)	The WM Act provides a number of mechanisms for protection of water sources. A 'controlled activity' approval from the NSW Office of Water is required for activities that include the construction of buildings or carrying out of works; the removal of material or vegetation from land by excavation or any other means; the deposition of material on land by landfill or otherwise on 'waterfront land'. The WM Act defines waterfront land as the bed of any river, lake or estuary and any land within 40 metres of the river banks, lake shore or estuary mean high water mark.	Under clause 41 of the Water Management (General) Regulation 2018, a public authority is exempt from requiring a Controlled Activity Approval, however the objectives of the WM Act are still relevant. Activities that may impact or interfere with groundwater aquifers such as large-scale excavation or drilling require approval under the WM Act and in line with the NSW Aquifer Interference Policy.
State Environmental Planning Policy (SEPP) (Infrastructure 2007)	This SEPP provides a planning regime for infrastructure throughout NSW. The SEPP describes infrastructure and actions that: • require consent, • are permissible without consent, • are prohibited, • or are exempt development.	Part 3, Division 17 of the SEPP provides development controls for roads. Clause 94 states that development for the purposes of a road or road infrastructure facilities may be carried out by or on behalf of a public authority without consent on any land. In this section, road infrastructure facilities include, among other things, • Emergency works, or routine maintenance works, carried out on an existing road or on land that is adjacent to such a road • Environmental management works if the works are in or adjacent to a road corridor Division 1 provides provisions for consultation that are required to be undertaken for Part 5 activities.
State Environmental Planning Policy (SEPP) (Coastal Management) 2018	The Coastal Management SEPP 2018 gives effect to the *Coastal Management Act 2016*. The State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP) repealed the State Environmental Planning Policy No. 14 – Coastal Wetlands, the State Environmental Planning Policy No. 26 –	If the project is considered routine maintenance works, the Coastal Management SEPP does not apply to roadside vegetation management. In accordance with Clause 10 of the Coastal Management SEPP.

Legislation/Policy	Description	Relevance to Council Roadside Management
	Littoral Rainforests, and the State Environmental Planning Policy No. 71 – Coastal Protection. The Coastal Management SEPP allows for a more integrated approach to land use planning within NSW's coastal zones, as defined within the *Coastal Management Act 2016*.	Clause 8(4) of the State Environmental Planning Policy (Infrastructure) 2007 states: *A provision of this Policy that permits development for the purpose of emergency works or routine maintenance works to be carried out without consent, or that provides that development for that purpose is exempt development, prevails over clauses 10 and 11 of State Environmental Planning Policy (Coastal Management) 2018 to the extent of any inconsistency, but only if any adverse effect on the land concerned is restricted to the minimum possible to allow the works to be carried out.* If the proposed works are not considered routine maintenance works and are located on mapped coastal wetland and littoral rainforest areas, the concurrence of the Director-General of the Department of Planning, Industry and Environment is required, and the development is considered designated development.
State Environmental Planning Policy (SEPP) (Vegetation in Non-Rural areas) 2017	The Vegetation SEPP regulates clearing that is not ancillary to development requiring consent. Clause 5 identifies land to which the policy applies, including listed LGAs and certain land use zones.	Clearing below the biodiversity offsets threshold on land to which the Vegetation SEPP applies only requires a permit issued under the SEPP, and will no longer require development consent. However, development consent will still be required for the clearing of vegetation that is a heritage item or that is located in a heritage conservation area, as well as vegetation that is an Aboriginal object or that is located in an Aboriginal place of heritage significance. Clause 8 of the SEPP states that an authority to clear vegetation under this policy is not required if it is a clearing authorised under s60O of the *Local Land Services Act 2013*. Section 60O provides an exemption for clearing under Part 5 of the EP&A Act and therefore consent is not required under the SEPP (Vegetation in Non-Rural Areas).

Table 6: Repealed Legislation

Former Legislation/Policy	Date Repealed	Current Arrangements
NSW *Threatened Species Conservation Act 1995*	25 August 2017	*Biodiversity Conservation Act 2016* Biodiversity Conservation Regulation 2017 Biodiversity Conservation (Savings and Transitional) Regulation 2017 *Local Land Services Act 2013* *Local Land Services Amendment Act 2016* State Environmental Planning Policy Vegetation in Non Rural Areas 2017 *Fisheries Management Act 1994* *Environment Protection and Biodiversity Conservation Act 1999*
NSW *Native Vegetation Act 2003*	25 August 2017	
NSW *Noxious Weeds Act 1993*	4 June 2015	*Biosecurity Act 2015* Biosecurity Regulation 2017 *Local Land Services Act 2013* (*Local Government Act 1993*)
State Environmental Planning Policies: • **14 Coastal Wetlands** • **26 Littoral Rainforest** • **71 Coastal protection**	3 April 2018	State Environmental Planning Policy Coastal Management 2018

5. Roadside Assessment

5.1. Types of Information

Enhanced use and understanding of environmental data in roadside management can improve asset and risk management outcomes for councils. Information on roadside values includes the type and structure of vegetation present, exotic and feral species present or using the area, disturbance levels, habitat present, heritage values and site characteristics. Environmental data can be used to:

- identify significant environmental features and sites of high importance
- minimise council (biodiversity) legislative risk of inadvertent damage from routine maintenance works and for planning and assessing roadworks so that clearing of important vegetation can be avoided
- establish baseline data from which to compare changes from management actions or unregulated uses
- inform funding allocation for works such as weed control
- plan management actions such as restoration works to improve environmental condition.

Roadside data may be collected from desktop investigations and field inspections.

Desktop analysis involves compiling existing information from various sources including maps, reports and databases. Potential data sources are listed below in Table 7. Geographic information system (GIS) access is beneficial but not critical to be able to characterise roadside segments and target areas for additional investigation. Note it is important to check and understand the scale of input data as small, narrow linear features may not be distinguished or distinguishable precisely and therefore information is indicative of attributes present in the general vicinity.

Table 7: Desktop Analysis of Values in Roadside Environments

Type	Topic	Sources
Remote Sensing	Aerial photographs	council/LPI
Database searches	Threatened species records	NSW Bionet EPBC Protected Matters Search Tool Atlas Living Australia
	Heritage database searches	Aboriginal Heritage Management System (AHIMS) NSW Heritage Database Australian Heritage Database
Maps	Soil mapping	eSPADE
	Vegetation mapping	NSW Native Vegetation Information System Sharing and Enabling Environmental Data (SEED) Portal

Type	Topic	Sources
	Weed/pest	FeralScan Local Control Authorities Local Land Services
	Adjacent land uses/potential	LEP land-use zones Cadastre National Parks Estate State Forest Estate DPI Lands/LLS databases
	Watercourses/ water features	Topographical base maps BoM Hydrology Geofabric

Other imagery such as Google Earth street view can be used to identify key features such as intact native vegetation and weed infestations.

Field survey provides the most accurate management information for managing roadside reserves. Due to the cost of field surveys and the extensive nature of linear reserves within a LGA, the main recommended field survey method is a 'rapid assessment'. However, there are times when a full, detailed survey is required to inform a Review of Environmental Factors or similar assessment.

To more readily identify native plant species it is recommended that field surveys be undertaken during the appropriate season when key plant species are likely to be in flower (i.e. Spring or Autumn).

The data collected during survey should be recorded in council's data management system with geographic coordinates and metadata. Metadata is data which includes date of survey, recorder, project ID, method, and accuracy e.g. hand held global positioning system (GPS). The location of key features such as hollow bearing trees and threatened species should be logged in council's asset management system for reference by ground maintenance crews.

Technological advances have enabled use of rugged field tablets loaded with collection templates and GIS map layers, which can be used to collect data during a field survey. The digital, spatial data arrangements vary amongst councils and liaison between GIS and responsible staff is required to identify data management protocols. The roadside data should be made available for recall during maintenance works. Field maps may be embedded within a site works plan or provided in a digital platform used by the works crew (eg Griffith City Council).

Field Reference Maps

Tweed Shire Council (TSC) adopted a comprehensive roadside vegetation management plan in 2013. Field reference notes and maps have been created to assist TSC personnel in making informed decisions when planning and undertaking works in Council's roadside reserves. Prior to undertaking roadside works three steps are to be followed:

Step 1

Use the provided maps to identify management zones (high, medium or low) and the location of any threatened species or Endangered Ecological Communities.

Step 2

Check the guidelines for activities applicable for the management zone in which the works are being undertaken.

Step 3

Consult with a supervisor to ensure there are no other relevant restrictions such as:

- Registered "No spray" zones
- Heritage areas
- Significant or regional weed infestations

Complete a site management environmental checklist before commencing works.

Hard copies of the field reference notes and maps are provided in each council vehicle and form a key component of toolbox meetings and/or contractor induction.

See the Tweed Shire Council Case Study for more information.

5.2. Reserve Prioritisation

The purpose of a prioritisation process is to rank roadside reserves for conservation significance. This can inform where to target field survey effort, flag values that must be protected and the landscape context of the site. The process of prioritisation (or ranking of sites) uses an agreed set of criteria that contribute to stated goals. It is a way of indicating relative value compared with another site. Some reserves may contribute more towards council's connectivity plan than others. Some reserves may contain a unique combination of attributes that mean they are irreplaceable in the landscape and warrant extra management.

Table 8 shows an example of a simple prioritisation based on desktop assessment of mapped values (adapted from Blacktown and Wingecarribee Councils).

Table 8: Simple Prioritisation Criteria

Criteria	Value
Vegetation Community Rarity	Legal status of the vegetation community present in the reserve
Presence of Threatened Biota	Count of separate threatened species (not individuals within population) in each reserve
Associated Vegetation Patch Size	Patch size classes (ha/reserve)
Connectivity / Corridors	Within, adjacent or absent
Cultural Significance	Presence, adjacent, or absent
Proximity to National Parks/ Adjacent Land Use	Distance to formal reserve
Condition Assessment	Weed coverage, general health, resilience and recovery potential
Threats	Pest/ disease, fire, fragmentation, surrounding land use
Community Values	Community usage, community groups/ Bushcare group

Further information on how to run a prioritisation assessment is contained in the Toolkit available with this project.

Prioritisation Approaches

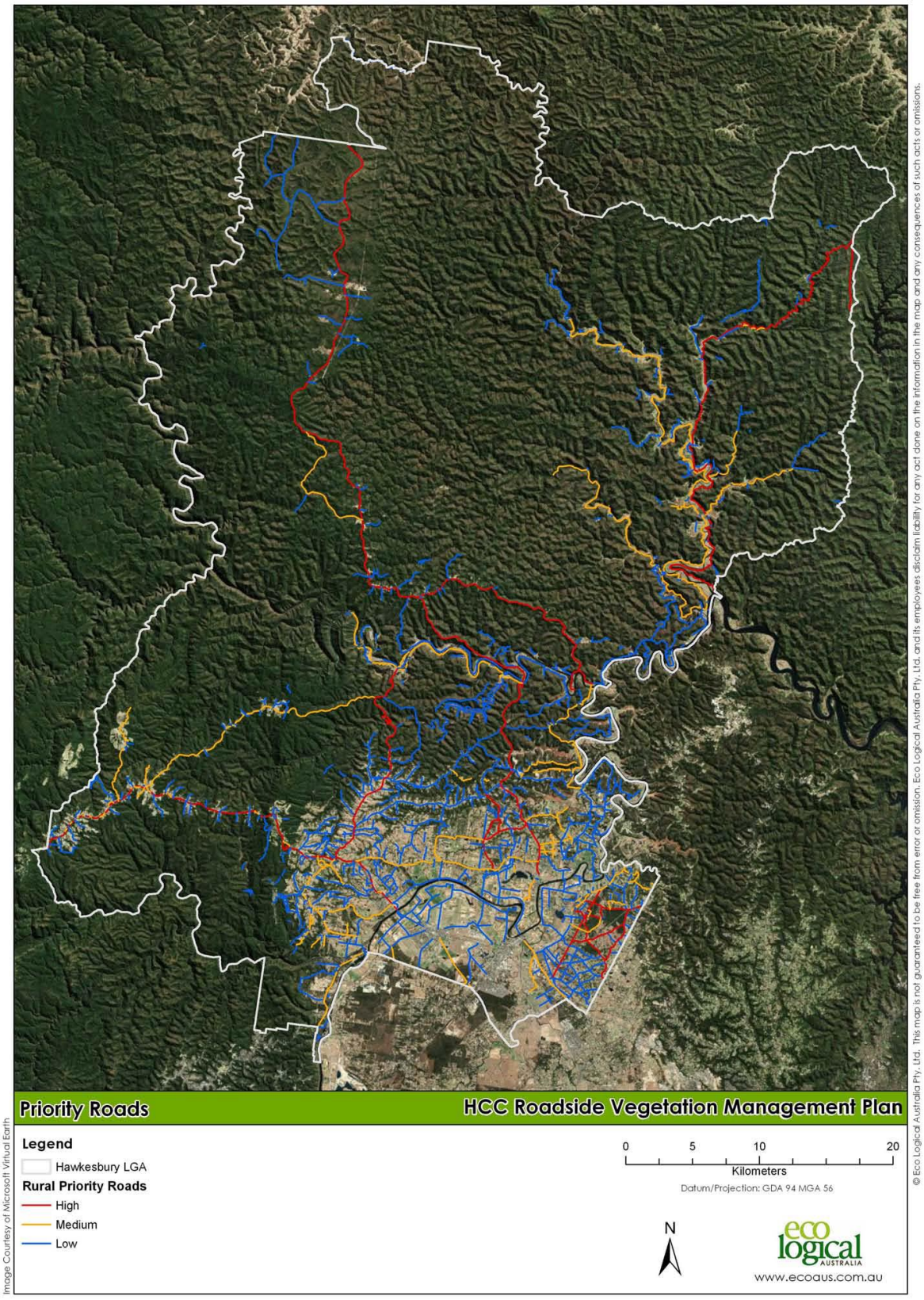
Hawkesbury City Council had previously completed LGA wide vegetation mapping and a conservation significance assessment (HCC 2007). This information was used to prioritise the order of field surveys based on one of three classes, high, medium or low (shown in **Figure 1**).

Blacktown City Council ranked reserves by assessing the biodiversity conservation value of the reserve; the value of the reserve within a landscape context; current condition of biodiversity in the reserve; threats impacting on the reserve and its perceived value to the community (ELA 2014).

Wingecarribee Shire Council developed a flexible, transparent and objective data driven GIS tool for Strategic Roadside Vegetation Management based on biodiversity outcomes. Six priorities were identified ranging from Priority 1 “threatened flora and fauna on roadsides” to Priority 6 “non EEC native vegetation in isolated patches”. See the Case Study for more information.

Appendix D of the RAM Guide also has examples of prioritisation approaches.

Figure 1: Hawkesbury Road Prioritisation for Targeted Survey Effort



5.3. Rapid Assessment Method for Linear Reserve Management

LGNSW and NSW Local Land Services have developed a consistent approach to rapid field surveying of environmental features in linear reserves. The rapid assessment method (RAM) is designed to be used in the field as a cost-effective survey method for collecting data on environmental attributes that are present.

The RAM uses a selection of ecological attributes to calculate an indicative conservation score, in this case high, medium and low. It incorporates attributes in three categories:

- conservation status (Part A)
- landscape context (Part B);
- vegetation condition (Part C).

The conservation score can then be used to guide future management, such as conservation, weed control and rehabilitation. A copy of the RAM proforma is included in **Appendix C.**

Other management actions that could be assisted by the RAM may include:

- regional biodiversity conservation
- management of threatened communities, threatened species and their habitat
- rehabilitation works (e.g. pest control, revegetation, habitat enhancement)
- bushfire management
- management of grazing and other agricultural activities
- management of active and passive recreational uses
- management of other human uses (e.g. firewood collection, adjacent property developments)
- road safety.

The advantages in using this tool are that it applies a consistent methodology across councils and Local Land Services to contribute to a regional or state level dataset (once available). This provides an opportunity for a broader perspective on regional natural resource management priorities.

Further information on the rapid assessment tool is available within the rapid assessment methodology toolkit.

Toolkit:

LGNSW Rapid Assessment Methodology Guide

LLS RAM Guide

LLS Vegetation Guides

6. Strategic Planning

6.1. Higher Level Plans

Council roadside reserve management may also relate to state and regional plans, including high level strategic plans such as *NSW: Making it Happen*, which includes the goal to improve road safety through a suite of actions including the *NSW Road Safety Strategy 2011-2020.*

In addition, there are a wide range of higher level environmental plans such as threatened species recovery plans, which contain specific actions required to protect and manage threatened species occurring within roadside reserves. Linear reserves frequently play a role in ecological connectivity across a landscape and this may be coordinated by a local, regional, state or national plan.

Regional Weeds Committees and Local Control Authorities prepare weed species management plans that may contain risk-assessed pathway analysis that may need to be incorporated into and considered when developing Site Management Plans. All landholders including council are obligated to observe management actions for declared weed species.

Under the *Biosecurity Act 2015*, the concept of a general biosecurity duty has been adopted. This is consistent with the principles of the NSW Biosecurity Strategy that biosecurity is everyone's responsibility. General biosecurity duty applies to any person who deals with biosecurity matters, including weeds. It means that anyone who knows, or ought to reasonably know, that the issue poses a risk, should take all reasonable and practical measures to minimise or eliminate that risk.

Under the changes there is a closer focus on regional strategic weed management plans to ensure compliance obligations are met for weeds at the state and regional level. These plans provide the basis for eradication and containment strategies at various scales. Complementing these regional strategic weed management plans (RSWMP) will be two new regulatory tools:

- The Control Order, to eradicate or prevent spread of a biosecurity matter, for a period of up to 5 years
- The Biosecurity Zone, which will be used to establish longer-term containment obligations.

Example Higher Level Plans

The Cumberland Plain Recovery Plan will influence roadside management actions on the Cumberland Plain. The Plan provides for the long-term survival and protection of seven threatened species, four endangered populations and nine threatened ecological communities listed under the former *NSW Threatened Species Conservation Act 1995* that are found only on the Cumberland Plain.

The Sydney Weeds Committees High Risk Pathways & Sites Management Plan directs weed management requirements under the former *Noxious Weeds Act 1993,* in the Sydney region. The Plan focuses on regionally identified pathways and priority sites and the commitment of all stakeholders to work in a strategic, collaborative and co-operative manner to ensure favourable outcomes. Regional weeds committees are responsible for nominating (listing) regional priority weeds. Each RSWMP is assessed by DPI and approved by the Minister.

For further information see the factsheet: Weed management on roads.

6.2. Integrated Planning and Reporting Framework

The IP&R framework describes a hierarchy where the community's aspirations are systematically translated into actions. There must be a clear link between council's Community Strategic Plan, the Delivery Program and the Operational Plan. The strategies identified in the Community Strategic Plan are carried through to the Delivery Program and expanded into actions and then provided in more detail in the Operational Plan. The relationship between IP&R plans and objectives, strategies and actions are shown in **Figure 2**. In reality this hierarchical relationship is implemented through active advocacy of linkages across council's various plans and the Community Strategic Plan.

Figure 2: Relationship of IP&R Plans, Objectives, Strategies and Actions

<table>
<tr><td>Community Strategic Plan</td><td></td><td></td></tr>
<tr><td>Objectives</td><td>Delivery Program</td><td></td></tr>
<tr><td colspan="2">Strategies</td><td>Operational Plan</td></tr>
<tr><td></td><td colspan="2">Actions</td></tr>
</table>

The Community Strategic Plan represents the highest level of strategic planning undertaken by a local council. All other plans developed by the council must reflect and support the implementation of the Community Strategic Plan (Office of Local Government website). The Plan identifies community priorities and aspirations which have been derived through a comprehensive community engagement process and provides broad strategies to achieve objectives under the four key headings: social, environmental, economic and civic leadership. Roads and infrastructure delivery are often rated highly by local communities. Environmental aspirations are typically expressed tenure blind and priorities within environmental management vary across communities.

The link needs to be made between relevant environmental objectives in the Community Strategic Plan and council's primary planning tool for managing roadside environments.

Example Strategic Level Framework

Kyogle Council Road Network Management System provides a strategic framework for road-related policies and plans, including for roadside reserves, to guide Council staff and the community in the operation of the road network. The management system identifies links to Council plans, procedures and legislation. Developed in 2005, the management system predates Council's IP&R system, however the structure of the system enables updates to Council's current plans and policies.

Kyogle Council Road Network Management System Overview

Once the strategic planning foundation is laid, the challenge becomes linking plans to action. Stakeholder consultation involving many councils with adopted RVMPs highlighted an ad hoc approach to translating plans to action, which has been a barrier to delivering improved roadside vegetation management. Council's delivery plan is a four year strategy detailing the principal

activities that will be undertaken during the term of each council to achieve the objectives of the Community Strategic Plan. The Delivery Program is where council takes ownership of Community Strategic Plan objectives and describes strategies and actions to ensure their delivery.

The Resourcing Strategy identifies assets, financial commitments and staffing requirements to deliver the Delivery Program. This enables the preparation of an annual budget that reflects the commitments made in each Operational Plan. Investment in improved environmental data on roadside assets will facilitate strategic planning of conservation works (embedded in the Delivery Plan) and in turn guide the Operational Plan.

Steps Towards Integrating Roadside Environmental Management into the IP&R System

Step 1: Identify links between roadside management objectives, the Community Strategic Plan and the Delivery Program. Objectives may be articulated in councils' Roadside Vegetation Management Plan (if prepared).

Step 2: Identify links to other council strategic plans.

Step 3: Identify staff with responsibility for delivering aspects of asset management related to roadside environmental management.

Step 4: Explore cost/benefits to council for greater collaboration and work alignment across functions that impact roadside values.

The mechanisms for linking the (RVMP) objectives and actions and the delivery plan will vary across councils. The following recommendations are drawn from stakeholder feedback and councils that have successfully implemented their RVMPs:

- Publicise or internally promote the RVMP with council managers and elected representatives.
- Encourage a multi-disciplinary team approach and/or use of specialist advice in developing the RVMP including representatives with a role in the development of the Delivery Plan and the roadside asset managers.
- Initiate support for the implementation of the actions including on-ground works, training, vegetation management, information databases and controls through IP&R meetings and actions in the Delivery Plans and annual Operational Plans.
- Nominate, in each authority involved in this Plan, a contact officer/position who will have a co-ordinating role in the implementation of the Plan within their organisation.

For the implementation of roadside environmental management actions, the critical step is to include those actions in the Operational Plan. **Appendix B** contains examples of environmental objectives in Community Strategic Plans and associated actions listed in Operational Plans.

6.3. Policy

An environmental policy is a statement that underpins how environmental management issues will be dealt with in the organisation. It communicates an organisation's values and the organisation's expectations of how environmental management will be undertaken across all parts of the organisation.

A policy consists of a statement of purpose and one or more broad guidelines or actions to be taken to achieve that purpose. The statement of purpose should be written in simple terms, free of jargon. The length of the policy may vary depending on the issue it addresses.

An environmental policy may also be required where there is a diversity of interests and preferences, which could result in vague and conflicting objectives among those who are directly involved.

Councils may nominate to develop a discreet Roadside Management Policy that incorporates environmental management principles, or it may review existing policies to identify where roadside reserves need to be elevated and incorporated within broader biodiversity or reserve management.

Different Approaches to Roadside Policy

- The Hunter & Central Coast Regional Environmental Strategy (HCCREMS) 2007 recommended adoption of a Roadside Environmental Management Policy to provide clear objectives for the protection, management and rehabilitation of roadside environments. The policy making procedure will need to consider and resolve conflicting corporate objectives. A policy will help guide staff in navigating inconsistencies between sections of council that are involved in managing multiple issues in the complex roadside environment (HCCREMS 2007).
- Maitland Council adopted a Roadside Environment Policy in 2014. This provides for a consistent approach to environmental assessment of routine activities and planning new road infrastructure and staff skills. It nominates the Executive Manager Appearance & Infrastructure, as the responsible officer for implementing the policy and ensuring consistent adherence by Council.
- Tatiara District Council in South Australia has embedded a Policy Statement within their RVMP. This states "The philosophy of the Tatiara District Council RVMP is in accordance with best practices, to identify the risks and opportunities for the effective management of roadside native vegetation from possible damaging activities without compromising other essential functions of roadsides through integrating appropriate planning procedures. Council acknowledges that removal of vegetation may require Native Vegetation Council approval and will identify offsets or make a payment into the significant environmental benefit fund to offset this clearance. Council will endeavour to offset any clearance with plantings."
- NSW RMS published an Environment Policy that states commitments and expectations for staff work approaches. Publishing this policy statement on their website also informs RMS external providers of organisational commitments.

6.4. Strategic Plans

Councils prepare strategic plans to support the achievement of the broad objectives identified in the Community Strategic Plan. Those broad objectives relating to biodiversity or natural systems may apply to roadside ecosystems including vegetation remnants and aquatic habitat.

Examples of council strategic plans which may cover the protection and management of roadside reserve environmental values are:

- A Local Environment Plan which maps environmentally sensitive land, such as areas with high biodiversity values, with clause(s) that protect these values,
- A conservation plan which identifies the environmental values, objectives, threats and management actions for the local government area such as a biodiversity strategy,
- A roadside vegetation management plan (RVMP) which is a form of a biodiversity strategy focussing on the specific environment features and management issues of roadside natural assets and other linear shaped reserves.

A biodiversity strategy or RVMP must include mechanisms that link back to and align with the higher level objectives and strategies of the Community Strategic Plan and relevant council policies. These are in turn integrated within the delivery program as part of council's Integrated Planning and Reporting Framework. This means actions and guidelines to protect and enhance roadside natural assets will be effectively implemented, councils can demonstrate compliance with relevant legislation and the plans will be regularly evaluated and updated in accordance with a monitoring and reporting program. Approximately two thirds of all NSW councils have developed RVMPs or similar plans (REC fact sheet 2 *Managing Roadsides – Planning*) many of which are clearly written, best practice documents, however, without the integration of these documents into council's delivery program they are likely to become future "dust gatherers". This project aims to promote better integration and offers a number of entry points or mechanisms to achieve this.

6.5. LEPs and DCPs

Councils are recommended to establish planning provisions for roads and roadside reserves within their Local Environmental Plan (LEP) or Development Control Plan (DCP) to set out rules covering their roadside assets, and to avoid having to deal with requests and proposals on an ad hoc basis (REC 2014).

Once a roadside environmental assessment has identified, ranked and mapped the environmental features on roadside reserves, areas with high biodiversity/environmental values can be identified on a sensitive land map in a council Local Environment Plan (LEP). A clause can be placed directly within the LEP or enabled through a clause in the accompanying Development Control Plan (DCP) and referred to in the LEP. Either way, it will specify the objective of the clause, matters that must be considered by the consent authority before granting consent for a development application on that land and matters that the consent authority is satisfied have been addressed before granting consent. Examples of each clause component are provided in **Table 9** below:

Table 9: LEP or DCP Clause Examples

Clause component	Example statements
Objectives	To protect native flora and fauna habitats To protect ecological processes To protect ecological connectivity

Clause component	Example statements
Matters that must be considered by the consent authority	The consent authority must consider any adverse impact of the development on: • Native ecological communities • Threatened biodiversity • Habitat elements providing connectivity
Matters that the consent authority is satisfied have been addressed before granting consent	The development is designed, sited and managed to avoid adverse environmental impact If that impact cannot be avoided—the development is designed, sited and will be managed to minimise that impact

6.6. Roadside Vegetation Management Plans

The development of a RVMP is completed as part of Integrated Roadside Planning. Applying the asset management approach, the RVMP will outline asset management objectives, strategies and actions to deliver effective road management. A RVMP can provide a good foundation for linking roadside environmental management with council planning and systems.

Integrated roadside vegetation management considers:

- the needs and safety of the community and road users
- knowledge of plant communities, ecosystem services and natural processes
- design, construction and maintenance
- regulation and policy requirements
- monitoring and evaluation procedures
- technological innovations
- cost benefit analysis (REC 2014, Berger 2005).

A RVMP is a mechanism to coordinate strategic management of roadside vegetation across the LGA. A robust RVMP will define the management principles that guide actions within the roadside areas and are consistent with corporate objectives and legislative requirements.

Legislation also triggers a risk management approach where processes are required to support strategic planning and on ground works, such as Preliminary Environmental Assessments, REF's, Part 5 (EP&A Act) assessments, checklists and points of reference. Risk management is already well established for occupational health and safety and financial responsibilities. Many councils are developing or have developed a risk management approach to climate change impacts which is relevant to the management of roadside environments and should be considered in the preparation of the RVMP.

Preparation of a RVMP provides an opportunity to engage with staff from different council departments and a range of internal and external stakeholders to promote effective roadside environmental management. A well-integrated plan communicates management requirements to internal council staff and to external roadside users including adjacent landholders. The consultative process recommended in developing an RVMP also becomes an engagement tool for staff from different sections to assist in delivering the plan. The management actions within the RVMP should identify the action priority, timing, responsibility and resourcing. This can be linked to council's Delivery Plan and Operational Plan.

Monitoring progress of the actions and progress towards council's goals for roadsides is an important facet of administering a RVMP. By linking the plan to councils IP&R process there will be accountability for annual reporting and end of term reviews.

A template RVMP is available with this project.

Toolkit: RVMP Template with IPR Links

7. Impact Assessment and Approvals

A wide range of State and Commonwealth legislation is relevant to roadside environmental management. Government agencies responsible for each piece of legislation are stakeholders in council roadside management through their oversight and accountability for this legislation.

Legislation provides a series of decision points that must be considered to allow the lawful delivery of roadside works and programs. All roadside activities including construction/widening and maintenance require some form of environmental impact assessment. Notwithstanding section 88 of the NSW *Roads Act 1993*, which in regard to tree felling states "A roads authority may, despite any other Act or law to the contrary, remove or lop any tree or other vegetation that is on or overhanging a public road if, in its opinion, it is necessary to do so for the purpose of carrying out road work or removing a traffic hazard", there are a range of due diligence obligations on council to consider environmental impact assessment on the receiving environment and heritage from the proposed works. Transport for NSW (TfNSW) recommend a preliminary review of the environmental impact of the works to determine the category of works and associated legal requirements.

While road works carried out by councils or other land management agencies such as TfNSW may require an environmental assessment called a Review of Environmental Factors in accordance with Part 5 of the *Environmental Planning and Assessment Act 1979*, other developments affecting roads must be assessed in accordance with Part 4 of the Act.

Environmental impact assessment documents commonly used in relation to roadside matters include:

- Consideration of environmental impacts under Part 5 of the EP&A Act for activities that are permissible without consent under the State Environmental Planning Policy (Infrastructure) 2007
- Review of Environmental Factors (REF) – under Part 5 of the EP&A Act
- Statement of Environmental Effects (SEE) – under Part 4 of the EP&A Act
- Environmental Impact Statement (EIS) where a development is defined as designated development under Part 4 (refer EP&A Regulations, Schedule 3) or likely to significantly impact the environment (refer EP&A Act S112)
- Referral or Controlled Action – Under the EPBC Act.

The context of the assessment will determine the types of issues that require assessment. Factors include the scope of proposed works, the location of proposed works and the receiving environment. SEPP (Infrastructure) 2007 will identify whether works are exempt development (i.e. not requiring environmental assessment) or require development consent under Part 4 of the EP&A Act or assessment by the organisation undertaking the works under Part 5 of the EP&A Act. Exempt development may only be carried out if the work is of "minimal environmental impact". Generally, any work that impacts vegetation is not likely to be of minimal environmental impact and some form of environmental impact assessment will be required.

Table 10 below provides a summary guide to the assessments that may be triggered by common roadside activities that may potentially impact on roadside vegetation and other environmental values.

The preparation of REF's is the key mechanism through which councils can generally fulfil their responsibilities under the Act. REF's provide a means through which councils can identify, understand and assess the likely impacts of their activities, and make decisions *about the types of strategies that need to be implemented to avoid or mitigate impacts on the environment. The impacts of routine maintenance activities tend to be determined via assessment checklists, while EIA's are prepared where the potential impacts on the environment are generally considered to be significant. The majority of councils, however, do not have access to a policy framework or management guidelines that inform them of the level of environmental assessment that is considered appropriate for different types of activities or environments. This can lead to confusion and inconsistency within and between councils in regard to the level of environmental assessment that is undertaken and the quality and extent of ameliorative actions that are implemented to reduce impacts on the environment*. (HCCREMS 2007).

Table 10: Part 5 Assessment Guide for Common Council Roadside Management Activities

Activity / Potential impact	Statutory trigger	Assessment required
Roads and traffic	Infrastructure SEPP	REF / EIS
Geotechnical and surveying investigations	Infrastructure SEPP	REF / EIS
Provision of road safety and traffic management facilities	Infrastructure SEPP Roads Act	REF / EIS
Rehabilitation and maintenance activities requiring the use of land	Infrastructure SEPP	REF / EIS
Quarries and gravel pits	POEO Act licences (above thresholds) Infrastructure SEPP permits ancillary winning of spoil	REF / EIS
Concrete batching plants	POEO Act licences (above thresholds)	REF / EIS
Crushing, grinding or separating works	Infrastructure SEPP permits ancillary uses	REF / EIS
Disturbing ground features (e.g. filling or excavation)	S87, S90 NPW Act POEO Act Licence (above set thresholds)	Aboriginal Cultural Heritage Due Diligence Assessment, Aboriginal Heritage Impact Permit (AHIP) if required) REF
Activity likely to affect a water body, watercourse, or natural drainage system	Controlled activity approval under WM Act	Vegetation Management Plan to accompany permit application. Approval only granted after development consent. Approval not required for public authority.
Activity likely to affect coastal zone land including wetland, littoral rainforest or coastal protection zone	Designated development Coastal Management Act 2016	EIS New provisions apply under ISEPP
Likely to change flood or tidal regimes, or be affected by flooding	Flooding (Local Government Act) Flood Plain Management Plan	REF
Generation or disposal of gaseous, liquid or solid wastes or emissions	POEO Act Contaminated Lands Act	REF
Affect threatened species	BC Act Fisheries Management Act EPBC Act	Assessment of Significance (i.e. 5-part test) as part of REF EPBC assessment

Potential significant impact on a threatened species, population or community	BC Act FM Act EPBC Act	Species Impact Statement, Environmental Impact Statement or Biodiversity Development Assessment Report (DPIE concurrence) EPBC assessment
Impact on a Matter of National Environmental Significance	EPBC Act Significance Impact Assessment Guidelines	Assessment of significance and Referral
Clearing	EP&A Act	REF
Weed control	BC Act LLS Act State Environmental Planning Policy (Vegetation Clearing in Non-Rural Areas) if impacting co-existing native vegetation Biosecurity Act	Identify if weed control will remove, threatened species habitat. Biosecurity duty

Template REFs, a decision support flowchart and example mitigation measures and environmental safeguards are available in the toolkit accompanying this document. Using a standard template for a Review of Environmental Factors (REF) for council-managed roadside activities will assist with identifying when specific requirements under different legislation are triggered.

Steps Towards Improved Environmental Impact Assessment and Risk Management of Councils' Due Diligence

Step 1: Review staff understanding of councils' legal requirements with respect to environmental impact assessment for roadside works with potential to impact the environment.

Step 2: Review the extent and adequacy of assessments and current practices.

Step 3: Conduct a risk assessment of routine, minor and major works breaching councils' due diligence to protect listed matters.

Step 4: Identify staff training requirements to address outcomes of the risk assessment.

The following resources have been developed as part of the CRR project to assist councils with meeting and understanding their environmental assessment requirements:

REF Templates:

- Major Works,
- Minor Works,
- Routine Works (General),
- Routine Works (Mowing and Slashing) and
- Routine Works (Shoulder Grading)

REF Environmental Safeguards and Mitigation Measures

REF Methodology Workbook

REF Approval Pathway

Guidelines to Prepare a REF

8. On-Ground Works

This chapter outlines how councils can improve their on-ground work practices in relation to roadside management.

8.1. Protocols, Procedures and Guidelines

Planning is required before any road construction or maintenance works are undertaken to ensure that the conservation of roadside vegetation is achieved and biosecurity risks are avoided. Road construction and maintenance works can have substantial impacts on roadside vegetation, depending on the scale of works. Works may include lopping or pruning of vegetation, but apart from direct removal of vegetation, road works can destroy vegetation through changes in soil levels, compaction of soil, and altered drainage. Inappropriate road maintenance practices can also have an adverse effect on the conservation and condition of roadside vegetation, through the inadvertent spread of weed propagules or plant pathogens (e.g. Phytophthora).

Roadside works should be carried out in accordance with the asset management policy and environmental standards defined in the RVMP. Some stakeholder council feedback indicated improved outcomes from well-structured projects with well-developed systems and standard operating procedures (SOPs), e.g. RMS Road Maintenance Council Contracts (RMCC) and larger scale construction projects. Some feedback cautioned about introducing too many systems. In councils with RMCC contracts some staff report confusion on where RMS protocols applied and where other council standards apply. This matter needs to be considered in consultation with Works/Depot coordinators and routinely communicated to ground staff.

There are existing RMS guidelines for a range of construction and maintenance activities that may be adapted to council's existing systems, particularly if they don't have an existing RVMP. These include:

- establishment of camp/facilities sites
- stockpiles
- erosion and sediment control
- plant parking, turning, refuelling and maintenance sites
- trimming of overhanging vegetation
- clearing
- mowing/slashing and weed management activities
- construction and maintenance of drains
- waste management.

Stockpile Management

Singleton Council's infrastructure delivery service unit undertakes maintenance and capital works on roads and in parks. The service unit currently reuses a variety of materials for the maintenance and construction of associated infrastructure. These materials are stockpiled on sites in road reserves throughout the local government area.

Singleton Council is developing a Material Handling and Stockpile Management Plan to implement a formal process for managing the use and storage of various materials. The plan is to guide Council in compliance with relevant legislation and the establishment, operation, maintenance and decommissioning of permanent and temporary stockpile sites throughout the local government area. The plan considers suitable permanent and temporary stockpile sites, licence requirements and potential environmental impacts from collection, storage and reuse of the material.

This will deliver improved stockpile management, protection of the environment and compliance with legislation.

8.2. Staff Training

Implementing the CREMF will require training and tools for council staff that will develop their capacity to identify high conservation value roadside vegetation and to undertake the necessary actions to protect that vegetation. Stakeholder feedback highlighted several areas for consideration. Some councils are already undertaking some or all of these training recommendations.

- Training for environmental advisors in how to *maintain* high value vegetation areas.
- Sourcing suitable model SOPs (for adoption or adaptation) e.g. plant pathogen hygiene protocols.
- Ensure that works crews are properly trained in appropriate roadside management techniques.
- Training in the use of mapping tools for office and field use including data management procedures and reporting requirements.
- Ensure works supervisors are allocated time for training field staff *in situ.*
- Ensure (with penalty clauses in contracts) that contractors and staff from service authorities involved in the installation or maintenance of services (particularly on high conservation value roadsides) are carried out in accordance with councils' environmental standards.
- Supervise works and enforce penalties if necessary.

A compendium of resources has been compiled on best practice conservation management, operating procedures and safeguards for routine maintenance activities (see **Appendix E**).

Toolkit:
Pre-construction checklist example
REF Approval Pathway
Guidelines to prepare a REF

8.3. Roadside Markers

Roadside markers identify sensitive areas of roadside environments and are used to provide clear instructions for staff undertaking roadside management activities to prevent inadvertent damage to threatened vegetation and high conservation habitat. A simple marker scheme may involve colour-coded stickers placed on existing or new white marker posts that link to a field guide, which specifies appropriate management practices.

A roadside marker scheme can form an important part of a councils roadside vegetation management plan as it can allow council employees, contractors and the community to readily identify significant roadside vegetation sites and any specific management practices associated with the site.

Key steps and considerations in implementing a roadside marker scheme include:

- Establishing a site register or database. Depending on the scope of the database (e.g. inclusion of significant vegetation sites, cultural heritage sites), this database could be developed in-house or by a botanical consultant. Information collected in the roadside vegetation surveys, about the location and type of vegetation sites, can form the basis of

the dataset. Key information for each site record includes any control measures required to protect the site.

- Costs of establishing a scheme depend upon the scope of the scheme and will include:
  - Collation of existing records
  - Preliminary mapping
  - Site survey
  - Procurement and installation of marker posts/signage
  - Database development and maintenance
  - Periodic review and maintenance
- Potential funding sources exist across a range of sources and tenures
- Timing for installations is not season sensitive, however, site survey and species validations may be.
- Ongoing maintenance is low, however, databases will require periodic updating and signage will require maintenance.

REC factsheet 3 Managing Roadsides – Implementation provides more information on the different types of ecologically sensitive sites, and the Hunter and Central Coast Regional Environmental Management Strategy (HCCREMS) has developed a roadside marker scheme for their region, which provides consistency across the region and has been implemented by a number of councils. Under the scheme, ecologically significant sites are marked with orange metal posts which identify codes that relate to key management issues or roadside values. The codes link to management field guides that provide clear directions on best practice management approaches for activities such as weed control, stockpiling, grading etc. to be implemented by maintenance and construction staff. There are nine different codes which range from “threated ecological communities”, to “significant weed incursion” and “aquatic”.

Interpretive roadside signage can also be used to identify and educate the community about significant roadside areas, e.g. refer to the REC website (other sources) for information regarding a template for Significant Roadside Environment Area signage.

9. Monitoring and Reporting

Monitoring and review of environmental outcomes is an important part of the management cycle because it allows councils to learn from their experience and to demonstrate successful outcomes. This section considers environmental monitoring and review processes such as worksite inspections and checklists and links these with other statutory reporting requirements under IP&R.

Roadside environmental monitoring and review processes have been developed by RMS to demonstrate environmental compliance and best practice in mitigating environmental impacts associated with road construction and maintenance activities (see **Appendix E**). Many councils have developed their own approaches and documentation, however, the RMS documentation provides a standardised approach with high levels of rigour.

9.1. Performance Indicators

Performance indicators are measurable values that demonstrate how effectively an organisation is achieving their objectives. Example measures of roadside management success may include:

- proportion of roadside activities with REFs
- proportion of roadside areas with vegetation mapping
- areas of significant roadside vegetation which are marked
- overall condition of roadside environment as periodically assessed, which do not deteriorate
- number of community complaints regarding roadside environment.

9.2. Monitoring

The stakeholder survey of council staff involved in roadside management (undertaken by Eco Logical Australia as part of this project) did not specifically highlight concerns regarding monitoring and review however, many expressed concerns regarding the validity of older roadside mapping information for ongoing decision making purposes. Eco Logical Australia recommended that more regular roadside assessments could be incorporated into routine asset maintenance and management activities, potentially using the rapid assessment method referred to in **Section 5.3**. This would provide up to date information for decision-making and trend data to assess longer term environmental outcomes.

While monitoring compliance with endorsed operational procedures may provide demonstrable evidence of the minimisation of impacts of council works to the roadside environment, it is important to identify existing impacts associated with other activities (e.g. works by utilities or adjacent land-owners or other activities such as firewood collection) to the roadside natural environment and whether these impacts reduce or increase over time.

Roadside survey is not only important in identifying high priority sites for protection and restoration, it is also the key mechanism for monitoring long-term improvement or deterioration in roadside environment values. The rapid assessment method outlined in **Section 5.3** can be used to assess the conservation values of linear reserves. The broad objectives of the rapid assessment method are to assess the conservation values of land according to an agreed set of conservation value categories. It is envisaged that such a tool may have wide ranging applications for quantifying and monitoring changes within the roadside in order to set management priorities and actions.

By adopting a consistent approach, this information enables trends to be monitored over time.

Accordingly assessment criteria for roadside reserve management would be linked to the strategies and actions described in the Delivery Program and Operational Plan, but may continue to apply the Pressure – State – Response methodology (from State of the Environment Reporting) to describe environmental outcomes.

9.3. Reporting

A range of reporting formats and mechanisms are built into the IP&R framework. These provide an opportunity to critically review and assess the successes or non-successes associated with roadside environmental management. Key IP&R reporting commitments are:

9.3.1. Quarterly Performance Reporting

Quarterly exception reporting for progress against strategies within the Delivery Program. This provides a mechanism to identify potential program/project issues and to develop mitigation strategies.

Such reporting provides an opportunity to flag issues or impediments associated with the management of the roadside environment and, with council's support, to implement strategies to redress these issues. An example would be delayed project progress or budget overruns.

9.3.2. Annual Report

The Annual Report is the main mechanism for monitoring and reviewing IP&R and provides an assessment of council's progress in the implementation of the Delivery Program and Operational Plan. Annual reports tend to assess the successful achievement (or otherwise) of IP&R strategies and actions and accordingly tend to focus on management outcomes rather than biophysical affects. Example questions for consideration are:

- Were actions carried out as planned?
- Were they effective?
- Did they help to achieve the strategy?

This provides a formal mechanism to identify successful environmental roadside management, but also an opportunity to flag management issues associated with roadside environmental management and to make revisions to the operational plan going forward.

9.3.3. Asset Reporting

Councils must prepare asset reports in accordance with the requirements of the:

- Local Government Act and Regulation
- NSW Local Government Code of Accounting Practice and Financial Reporting
- Australian Accounting Standards.

Asset reporting requirements are aligned to the asset management plan and involve asset condition assessments. Generally speaking assets tend to deteriorate over time, however, preventative maintenance can extend their service life and provide improved value for money. Condition assessments assess the rate of change of asset condition, based on key service parameters, to forecast remaining service life and to allow for the funding of depreciation costs to allow for replacement.

While it is anticipated that appropriately protected and maintained environmental assets will not deteriorate, but improve over their service life, asset condition assessment provides an appropriate mechanism for measuring success in roadside environmental management and in demonstrating best value principles for environmental asset management.

The rapid environmental assessment tool developed as part of the Council Roadside Reserves project provides an opportunity to capture robust environmental condition assessment data through time. This tool may be used to measure changes in condition through time and in response to management activities.

As identified in **Section 2.5**, roadside environmental assets should be incorporated into council's road asset management system. Best practice would incorporate environmental asset management costs associated with the roadside reserve. Such an approach provides improved valuation and funding opportunities for roadside environmental management resources and activities.

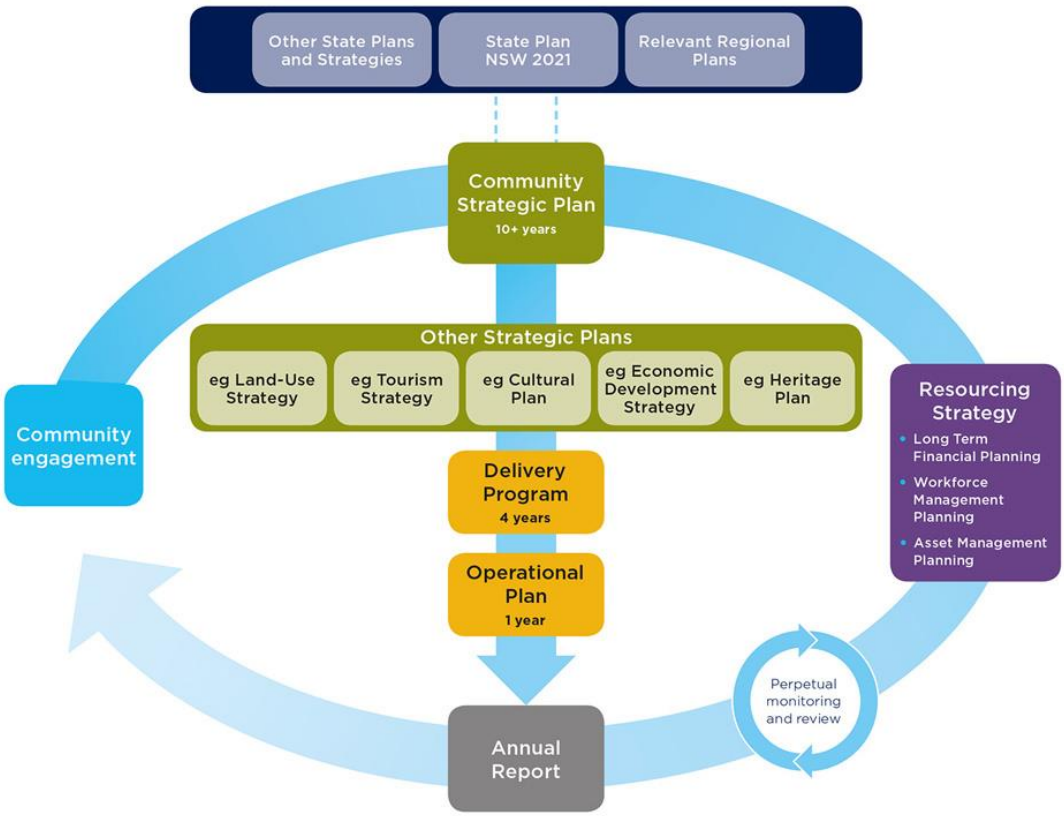
Appendix A Integrated Planning and Reporting Framework

Integrated Planning & Reporting was developed by the Local Government Reform Program to improve long term planning, financial and asset management and council accountability. The IP&R system is well established in NSW and is common across all councils. The IP&R framework is a requirement under Section 406, chapter 13 of the *NSW Local Government Act 1993*.

It is designed to facilitate thorough planning, demonstrate rationale for council expenditure and measure council's performance against its stated goals. The Integrated Planning and Reporting framework emphasises community values, wants and needs as the central tenant underpinning development of the local community Strategic Plan (10 years), which in turn influences council's Resourcing Strategy, Delivery Program (4 years), Operational Plan (1 year), Community Engagement Strategy, Annual Report and State of the Environment Report.

IP&R enables councils to show how objectives, strategies, actions and timelines in the Community Strategic Plan, Resourcing Strategy and Delivery Program/Operational Plan fit together in a more integrated way. The then NSW Department of Premier and Cabinet Local Government Division established a comprehensive development manual for Integrated Planning and Reporting that is available.

The IP&R framework is underpinned by the principles of ongoing community consultation and engagement and perpetual monitoring and review. The components and influencing factors that drive IP&R are illustrated below.



Appendix B Example Community Strategic Plans & Operational Plans

The relationship between council Community Strategic Plans and Operational Plans crosses from broad, high level visions to more concrete actions. **Tables 11** and **12** are examples of where Operational Plans support community objectives in the case of roadside environmental management. These examples are provided as real world, current situations rather than idealised planning links.

Table 11 below lists examples of objectives for biodiversity protection from Community Strategic Plans.

Table 11: Sample of Environmental Objectives from Community Strategic Plans

Council	Theme	Aspiration	Indicator	Data Source/Trend/Timeframe
Bellingen Shire Council	Living Environment	We work together to protect and enhance our environment	Number of volunteer hours spent on invasive weed control (public and private land)	State of Environment Report (Regional)/ Number of volunteer hours/ Steady or increasing Annually
Glen Innes Severn Council	Environmental Stewardship	Improve people's lives by protecting natural environments and building a strong sense of community (Environmental Stewardship). Council will have a greater focus on environmental issues as part of the Community Strategic Plan. Engage our Community in integrated planning incorporating land use, economic development infrastructure and social policy that reflect and retain the character of our natural and built environment. Prevent the spread of noxious and environmental weeds.		10 year plan. Council will have a greater focus on environmental issues as part of the CSP. Glen Innes Natural Resources Advisory Committee
MidCoast Council	Our Environment	1. Protect and Maintain our natural environment so it is healthy and diverse 1.4 Reduce the impact of noxious weeds and invasive species on our environment through strategic management and education 2. Ensure that development is sensitive to our natural environment	Asset quality Number of property inspections undertaken Hectares of weeds managed EMS implemented	Source: Great Lakes 2013-2030 Community Strategic Plan Great Lakes Delivery Program 2013-2017 and Operational Plan 2015-2016
			Regenerated bushland	

Council	Theme	Aspiration	Indicator	Data Source/Trend/Timeframe
Wingecarribee Shire Council	Protect and Enhance	Ensure no net loss of the natural resources of the Shire by replacement and/or offset of the unavoidable loss of trees, vegetation and other resources using an effective and transparent offset formula	Number of Threatened Species both endangered and vulnerable	Source: Wingecarribee Shire Council's Management Plan
Snowy River Shire Council	Sustaining our environment for life	Retain vegetation and trees on private property	Volunteer with Landcare and other groups	The diversity of species is maintained and no new species are becoming threatened or endangered through environmental degradation and loss of habitat
Mid-Western Regional Council	Protect and Enhance	Raise community awareness of environmental and biodiversity issues	Take ownership of our natural environment and protect it through responsible practices	Reduced damage to our natural environment from regional economic drivers e.g. mining.
			Control invasive plant and animal species on private property	
			Support and participate in Council's environmental programs and initiatives	

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Revisiting these same councils, **Table 12** below shows a sample of current, relevant Operational Plan actions to illustrate links from plans to actions.

Table 12: Sample of Related Actions from Operational Plans

Council	Operational Plan Actions
Bellingen Shire Council	Establish and implement a road and bridge maintenance management system "Reflect".
	Weed control and bush regeneration surrounding endangered ecological communities (EECs) and implement coastline monitoring program (subject to grant funding success)
Glen Innes Severn Council	Undertake road asset maintenance renewal and construction works for roads, bridges, road drainage and ancillary assets in accordance with the four year delivery program
	Roadside vegetation management by partnering with Local Land Services and Glenrac to implement roadside vegetation project
	Increase funding for maintenance of unsealed rural roads by 50%
	Spend all revenue increases under the “Operating Performance Ratio” heading on road infrastructure including bridges (including maintenance), with particular emphasis on water and sewer dividends
	Improve the Road Infrastructure AMPs to an advanced level in line with the Infrastructure Audit Recommendations.
Mid Coast Council	Continue implementation of the NSW Weeds Action program focussing on aquatic weed infestation
	Introduce a terrestrial biodiversity layer and corresponding provisions into LEP 2014
Wingecarribee Shire Council	Roadside reserve weed projects
	CBD weed Spraying
	Noxious Weed Control on WSC land
	Increased roadside mowing
	Local road rehabilitation
Mid-Western Regional Council	Weed Control on roadsides and MWRC land
	Implement a roadside vegetation management plan
	Upgrade, renewal and extension of local roads in accordance with Capital Works Program 2016/17
	Ongoing maintenance and upgrades of regional roads network

Council	Operational Plan Actions
	Upgrade and renewal of bridges across the region in accordance with the Capital Works Program 2016/17
	Sealing of and upgrades to Wollar Road in accordance with Restart NSW funding agreement
	Undertake upgrades of Ulan Road in accordance with the Ulan Road Strategy
	Identify and undertake culvert replacement and causeway improvement program
	Contribute to and support load limit variations and B-Double restrictions on various local roads as necessary
	Maintenance of MWRC local road network in accordance with established levels of service

Appendix C Rapid Assessment Proforma and Conservation Value Assessment Matrix

Linear and Discreet Reserves **Major Vegetation Type** (Grasslands, Shrublands/Heath, Treed)

Assessor name | Date

Reserve Name | Crown Reserve Number

Roadside Name | Road Number

Side of Road Both or N NE E SE S SW W NW

Vegetation Formation **FREE TEXT** Vegetation Class **FREE TEXT** Plant Community/No. if known **FREE TEXT**

Assessment Zone Identification | GPS Coordinates

Start of Zone | End of Zone

Part A Conservation Status

Vegetation		**Wetlands**			
TEC/Over cleared veg community	2	Ramsar/DIWA/CM Act	2	Present	2
Not Present	0	Wetlands (>2ha)	1	Absent	0
Name if known		None (or <2ha)	0		

Site Managed Species

TOTAL SCORE =

Threatened = 2+, Depleted = 1, Common = 0

Part B Landscape Context (*Note any site with non-native vegetation scores 0*)

Mitchell Landscape		**Zone Vegetation Width** *(width within assessment zone)*		**Total Native Vegetation width** *(within and adjoining assessment zone)*	
>70% cleared	10	> 100m	10	>100m	10
30-70% cleared	5	21-100m	6	20-100m	6
<30% cleared	0	5-20m	2	<20m	0
		<5m	0		

Native Vegetation within 100m

>5 ha within 100m	10
1-5 ha	5
<1 ha	0

TOTAL SCORE =

Large and or connected = 22+, Moderate = 10-21, Small or disconnected = 0-9

Part C Condition

Vegetation Structure		**Large Trees**		**Non- indigenous woody weeds**	
Intact/natural	6	Common	3	Absent	3
Mostly intact	4	Sparse	1	Sparse	2
Partially intact	2	absent	0	Common/abundant	1
Sparse or absent	0				

Ground Cover

Weediness		**Nativeness**	
sparse	4	diverse throughout	4
common in parts	3	diverse in patches	3
common throughout	2	few species common throughout	2
abundant	0	patches only	1
		absent/sparse	0

TOTAL SCORE =

Naturally treed vegetation:
HIGH QUALITY: 17+ = Residual or Modified A; 14-16 = Modified B;
MODERATE QUALITY: 9-13 = Transformed A; 6-8 = Transformed B;
LOW QUALITY:0-5 = Replaced

Shrublands / Heathlands:
HIGH QUALITY: 14+ = Residual or Modified A; 11-13 = Modified B;
MODERATE QUALITY: 8-10 = Transformed A; 6-7 = Transformed B;
LOW QUALITY: 0-5 = Replaced

Grasslands:
HIGH QUALITY: 7+ = Residual or Modified A; 5-6 = Modified B;
MODERATE QUALITY: 4 = Transformed A; 3 = Transformed B;
LOW QUALITY: 0-2 = Replaced

Other Information recorded:

Main weed species present
1-5 species

Main tree species
1-5 species

Main shrub species
1-5 species (if known)

Main understorey species
1-5 species (if known)

Other indicators – tick if present

Habitat features	Sparse	Common	Abundant
Tree regeneration			
Shrub cover			
Shrub regeneration			
Logs & fallen timber			
Wetlands/springs/gilgais			
Rocky outcrops			
River/creek banks			
Mistletoe			
Cryptogams			
Rare plants			

Threats /disturbances

	Impact	
Threats / Disturbances	**Minor**	**Significant**
Grazing		
Firebreaks		
Track(s)		
Drainage		
Cropping		
Feral animals		
Timber removal		
Active erosion		
Invasive weed		
Flood/fire damage		
Other (list)		

Cultural Heritage sites

- Note any significant cultural heritage sites located within the reserve.

Current Management Regime

- This can include comments on grazing, fire and other management practices. Note the current and any past management regime, if known.

Conservation Value Assessment Matrix

Conservation status	Landscape context	Condition and habitat		
		High Quality	Moderate Quality	Low Quality
Threatened	Large and / or connected	High HCV	High HCV	Medium MCV*
	Moderate	High HCV	Medium MCV	Medium MCV*
	Small and disconnected	High HCV	Medium MCV	Medium MCV*
Depleted	Large and / or connected	High HCV	Medium MCV	Low LCV
	Moderate	High HCV	Medium MCV	Low LCV
	Small and disconnected	High HCV	Medium MCV	Low LCV
Common	Large and / or connected	High HCV	Medium MCV	Low LCV
	Moderate	Medium MCV	Low LCV	Low LCV
	Small and disconnected	Medium MCV	Low LCV	Low LCV

* Reserves that fall into these three categories will form part of the RAM matrix audit and may be revised in subsequent versions of the guide.

Appendix D Council Self Assessment Prompts

Questions for councils to ask themselves which may guide and direct them on which components they may wish to develop further to assist them in integrating roadside management into IP&R.

Do you have an existing council policy that includes roadside vegetation management?	Yes	Has it been adopted by council? Widely circulated and understood? Has its application/ effectiveness been reviewed?
	No	Would it help clarify competing management requirements?
Do you have an RVMP or equivalent?	Yes	Does it need updating to link to IPR strategic documents? Is the underlying data current/adequate? Has it been reviewed?
	No	Would it help provide a strategic framework for roadside activities?
Is roadside vegetation management considered in council's natural asset management plan?	Yes	Does council define service level agreements for linear reserve management?
	No	How can roadside environmental values contribute towards council's strategic conservation goals?
Is roadside vegetation management responsibility clearly understood across various council departments?	Yes	Where would additional resources support implementation?
	No	If council's responsibilities in this matter are not widely understood, what tools are needed to ensure that it is? Consider tools such as a one-pager for each department articulating the department roles and responsibility.
Is current mapping available?	Yes	Is it standalone or integrated into councils systems? Accessible by all staff? Is it complete?
	No	Can council apply the standard methods outlined in the rapid assessment proformas?
Have high/medium/low priority areas been identified?	Yes	Is it clear what is/isn't permissible in high conservation areas? Is this information transferrable – available in field
	No	Is mapping or analysis required? Do management objectives need to be developed for each zone? Are roadside markers warranted?
Do you have SOPs for works in council roadside reserves?	Yes	Are appropriate officers aware of them and use them? Do they work? Are they subject to periodic review?
	No	Do you have an environmental checklist for works in council roadside reserves?
Does council work in partnership with key stakeholders on roadside environment management?	Yes	Do staff have access to suitable training in managing the risk of impacting environmental values or in conserving areas of high conservation value? Does council undertake community engagement on the value of linear reserves? Is information available on councils' website articulating councils' policy position and landholder requirements?
	No	Which stakeholders/adjoining landowners should be engaged on this issue?

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Appendix E Resource Compendium

Topic (A-Z)	Reference/Link	Relevance
Acid Sulfate Soils	Acid Sulfate Soils Manual. 1998. Acid Sulfate Soils Management Advisory Committee	Management guidelines and definitions.
Asset Management	Blue Mountains City Council Resourcing Strategy	Blue Mountains City Council have included natural assets in their listed asset stock in the Resourcing Strategy
	Blacktown City Council Environmental Sustainability Framework	
	LGNSW Natural Assets Research Report	
Biodiversity guidelines	Biodiversity Guidelines Protecting and managing biodiversity on RTA projects	NSW RMS Guidelines for managing biodiversity in road projects
Conservation Management	Roadside Management Guidelines Mid-Western Regional Council	Managing High, Medium and Low Conservation Roads
Data Management	Register of significant sites The Roadside Significant Sites Database contains a spatial representation of sites of natural and cultural significance located along roads. Sites are designated as significant by the Principal Environmental Officer of Transport Services Division based on information contained in heritage registers, vegetation surveys, Aboriginal heritage surveys etc. Individual sites may have specific protection requirements due to their unique features. The data is maintained as required.	Example database to collate environmental data along roadsides and rank significance. May be similar to RMS internal “road environmental database”.

Topic (A-Z)	Reference/Link	Relevance
	Council example of ranking road reserves for predicted conservation values Hawkesbury City Council 2007	Ranked roads for predicted conservation significance to target field surveys for verification
	Council example of reserve ranking for biodiversity values Blacktown City Council Reserve, ELA 2014	Ranked reserves on conservation value, landscape, condition; threats and perceived value to the community
	Wingecarribee roadside prioritisation information	
Fauna Sensitive Design	Vic Roads - Fauna Sensitive Road Design Guidelines	Aspects of "fauna sensitive road design" are considered in project planning through to maintenance
	Qld Department of Transport and Main Roads - Fauna Sensitive Road Design: volume 1 Qld Department of Transport and Main Roads - Fauna Sensitive Road Design: volume 2	Information to assist practitioners to design, construct and maintain roads that better accommodate the needs of fauna
IPR	Local Government Act 1993 - Integrated planning and reporting guidelines	Requirement under Section 406, chapter 13 of the NSW Local Government Act 1993
	Integrated Planning and Reporting Manual for local government in NSW	IPR development manual
Legislation	How do Key Threatening Processes Apply?	Key threatening processes do not regulate or prevent actions undertaken by property managers, however, they are designed to raise awareness of how threats to biodiversity are operating in NSW and/or nationally and to guide land managers in protecting threatened species and improving opportunities for biodiversity.
	EPBC Act Local Government Guidelines	
	Bathurst Regional Council	Control of firewood harvesting from roadside reserves

Topic (A-Z)	Reference/Link	Relevance
Managing Firewood collection	Albury City Council	Control of firewood harvesting from roadside reserves
	Junee Shire Council	Control of firewood harvesting from roadside reserves
Multiple Community Education & Agricultural considerations	Campaspe Community Roadside Management Handbook	Handbook designed to educate and raise community awareness regarding roadside values and behaviours. Covers: • Protection of waterways and wetlands • Cultural heritage • Fire prevention • Grazing & stock management • Stock crossings • Cultivation and ploughing • Slashing • Cropping and hay making • Weed management • Firewood collection • Machinery movement • Revegetation of roadsides • Seed collection • Environmental values
Phytophthora Management/ Equipment hygiene	Vehicle and machinery checklists clean-down procedures 2014. Biosecurity Qld, Department Agriculture, Fisheries and Forestry	Clean down procedures (Qld)

Topic (A-Z)	Reference/Link	Relevance
	Bushland Hygiene Protocols for Phytophthora, Hornsby Council 2014	Management measures to prevent the spread of phytophthora
	Managing Phytophthora Dieback in Bushland Phytophthora Dieback Working Group Inc	WA Local Government Guidelines for managing *Phytophthora cinnamomic* Website with a range of resources regarding Phytophthora
	NSW Statement of Intent: Infection of native plants by *Phytophthora cinnamomi*	Biology, distribution, impacts on biodiversity, national responses, NSW responses, challenges, initiative, and partnerships. Contains multiple references Centre for *Phytophthora* Science and Management (2006) Management of *Phytophthora cinnamomi* for Biodiversity Conservation in Australia: Part 4 – Risk Assessment Models for Ecosystems, Species and Communities and areas. A report funded by the Commonwealth Government Department of Environment and Heritage and the Centre for *Phytophthora* Science and Management, Murdoch University, Western Australia.
Policy	Kyogle Council Road Network Management System Overview	Road Network Management System. Plans & policies guiding the operation of the road network in Kyogle
	Roadside Environment Policy	Maitland City Council's consistent approach to environmental assessment of routine activities and planning new road infrastructure and staff skills. Follows HCCREMS 2007
	Tatiara District Council Roadside Vegetation Management Plan	Tatiara Council identify the risks and opportunities for the effective management of roadside native vegetation from possible damaging activities without compromising other essential functions of roadsides through integrating appropriate planning procedures.
	RMS Environment Policy	NSW RMS state commitments and expectations for staff work approaches to roadside policy

Topic (A-Z)	Reference/Link	Relevance
	Northern Beaches Bushland Policy	
Roadside Environment Committee	Roadside Environment Committee Managing Roadsides - Planning Managing Roadsides - Implementation Managing Roadsides - Monitoring & Evaluation	General Introduction Links to Fact Sheets
Roadside Vegetation Management Plans	Hawkesbury City Council RVMP Cowra Council RVMP	Example roadside vegetation management plans
Sodic Soil Management	Sodic soil management	Management guidelines and definitions. Sodicity is a term given to the amount of sodium held in a soil. Salinity is a measure of the concentration of the soluble salts contained in the soil.
Soil Erosion Control	Landcom's "Blue Book (4th Edition) on erosion and sediment control	Key reference guide for prevention and managing soil erosion for roadside works.

Topic (A-Z)	Reference/Link	Relevance
Standard Operating Procedures		Weed control Noise monitoring and reporting Environmental management of storage areas Threatened plants Management of spill basins Monitoring of road kill Monitoring fauna structures Water quality monitoring Managing acid sulfate soils Maintenance at waterways Environmental risk assessment Groundwater monitoring
State contracts/ state guides	RMS Local Government Portal RMS Biodiversity Guidelines RMS Environmental Assessment Procedure and the Standard safeguards list (EIA-PO5-G01-T02)	Large number of fact sheets, guides, design notes, manuals
Stock/ grazing management in roadsides	Junee Shire Council - Roadside Grazing Travelling Stock Reserves	General overview of LG managing grazing stock in reserves Up to date information on permits from Local Land Services

Topic (A-Z)	Reference/Link	Relevance
Threatened Species Management	Cumberland Plain Recovery Plan And all other species recovery plans under Saving Our Species Program	Will influence roadside management actions on the Cumberland Plain Species specific information, Endangered Ecological Community management, grant funding, partnerships
Weed management	NSW Weeds Database Strategic Weed Management Plans Weed Management on Roads	New Biosecurity Act arrangements Sub pages on weed species identification, management, control & training courses

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NSW Roadside Environment Committee fact sheet "Managing Roadsides: Planning"

NSW Roadside Environment Committee factsheet "Managing Roadsides: Implementation"

NSW Roadside Environment Committee fact sheet "Managing Roadsides: Monitoring & Evaluation"

Office of Local Government: Community Strategic Plan

RMS 2015 Environmental assessment procedure for routine and minor works EIA-PO5-1

Wingecarribee Shire Council 2015. Roadside Vegetation Model Flowchart and PowerPoint

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