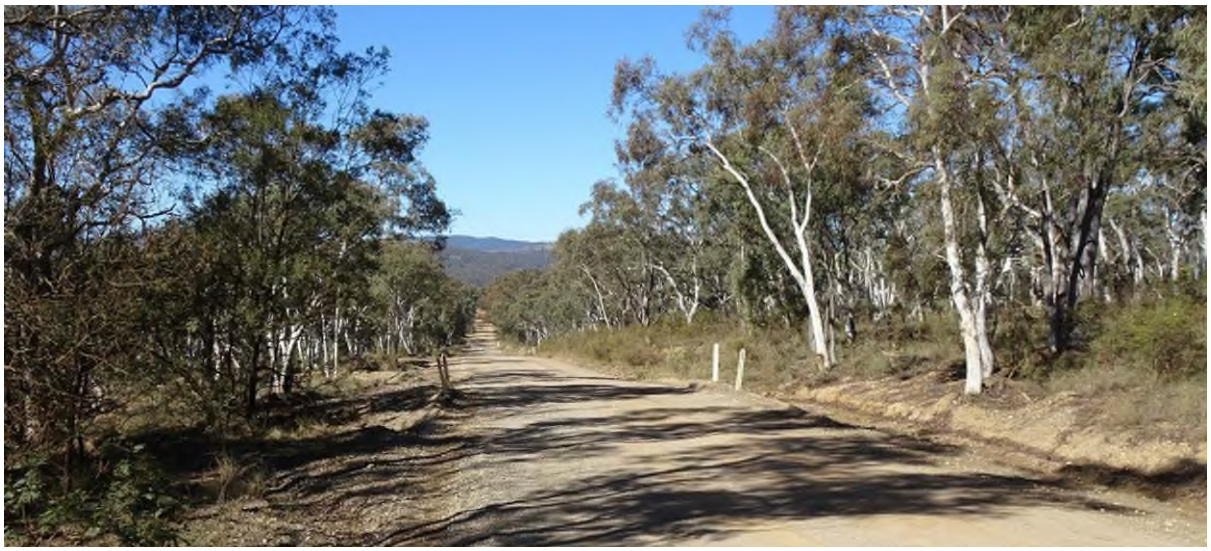
Roadside Vegetation Management Plan

for Queanbeyan-Palerang Regional Council



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Abbreviations

Abbreviations	Definitions
LLS	Local Land Services
TSR	Travelling Stock Route
HVC	High Value Conservation area
MVC	Medium Value Conservation area
LVC	Low Value Conservation area
SM	Special Management area
QPRC	Queanbeyan-Palerang Regional Council
OEH	(NSW) Office of Environment and Heritage
DPE (formerly DPIE)	(NSW) Department of Planning and Environment (formally Department of Planning, Industry and the Environment). Some documents will be referenced with DPIE as the documentation was prepared prior to the name change.
NPWS	National Parks and Wildlife Service
KTP	Key Threatening Processes
RMCC	Road Management Council Contracts
TfNSW	Transport for NSW
RVMP	Roadside Vegetation Management Plan (this document)
BHP	Biosecurity Hygiene Protocol
REF	Review of Environmental Factors
TSR	Travelling Stock Route
BC Act	*Biodiversity Conservation Act 2016*
EPBC ACT	*Environment Protection and Biodiversity Conservation Act 1999*
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2021*
LLS Act	*Local Land Services Act 2013*
NPW Act	*National Parks and Wildlife Act 1974*
SEPPT&I	*State Environmental Planning Policy (Transport and Infrastructure) 2021*
SEPPB&C	*State Environmental Planning Policy (Biodiversity and Conservation) 2021*

1 – Introduction

1.1 – Vision

The Roadside Vegetation Management Plan aligns with two of the Strategic Goals of the QPRC Community Strategic Plan:

- *Our transport network and infrastructure is safe, supports a zero emissions target and allows for ease of movement throughout Queanbeyan-Palerang and across the ACT border and region.*

- *Our land, vegetation and waterways are managed in an integrated and sustainable manner.*

The vision of the Roadside Vegetation Management Plan is for a roadside environment where safety and usability are paramount, and that also:

- maintains ecological communities and processes,
- provides environmental services in the immediate roadside environment and beyond,
- provides amenity for motorists and adjacent landholders, and
- provides a sense of local place and identity.

1.2 – Background

Road verges across QPRC are key parts of our natural ecosystem, and often contain the last examples of intact native habitats in heavily used agricultural or urban areas. Many road verges are key biodiversity and conservation hotspots, and often contain endangered or vulnerable species. Because they are very narrow and run adjacent to roads, they are threatened by human disturbance as we build, use, and maintain roads. They also often support other infrastructure including electricity, water, sewer, gas, telecommunications, and other utilities.

We must balance the competing needs of roads and road infrastructure with the ongoing conservation of roadside verges and reserves. This roadside vegetation is managed as part of the routine work expected of a local government, and the RVMP acts to guide future road related construction and maintenance. In doing so, it builds upon previous management plans, including in the *Tallaganda Shire Council Roadside Management Plan, 1997*

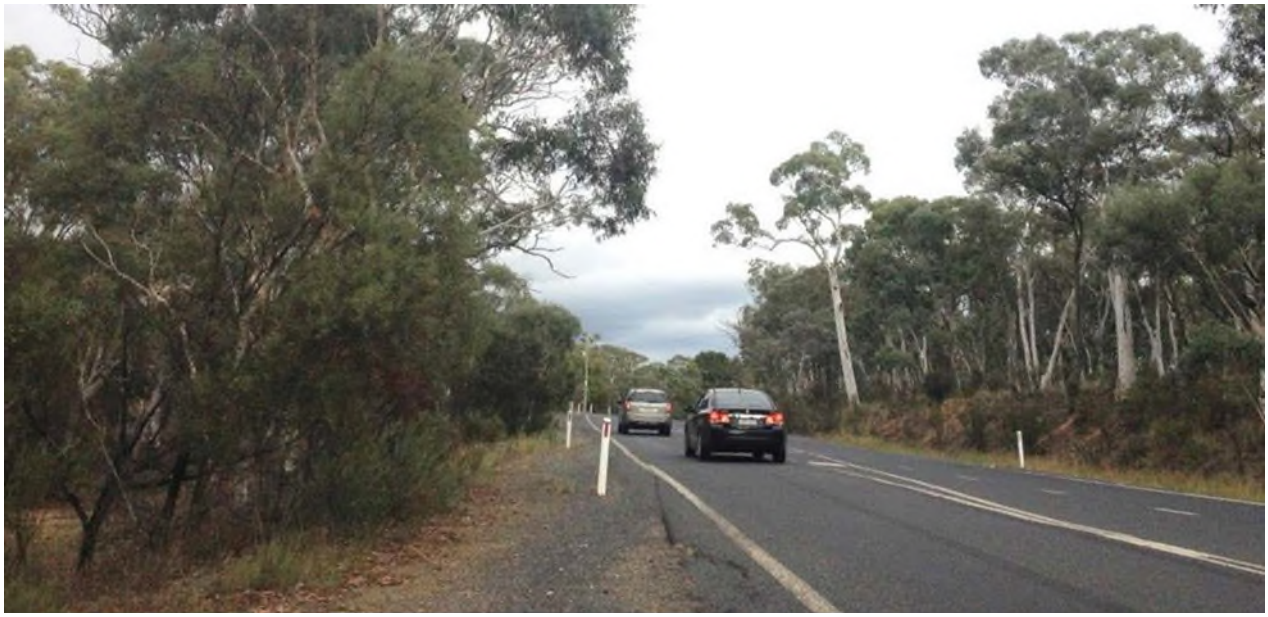
Some of QPRC's roadside vegetation was surveyed and assessed in 2017-2019 as part of the Council Roadside Reserves project, funded by the NSW Environmental Trust via Local

Government NSW (LGNSW). The threatened species of the roadsides in QPRC were mapped in 2020 and 2021 by DPIE. This mapping and reporting feeds into existing and ongoing in-house vegetation mapping and monitoring and informs this plan. Future mapping will be conducted to cover more of the LGA and adapt to changing environmental and road conditions. This should be treated as a living document, and the newest relevant maps should be relied on. This RVMP will feed into a more concise field guide, including Standard Operating Procedures for staff to use on the ground. Training will be provided to transport staff as required.

1.3 – Objectives

The RVMP aims to protect, maintain, improve, extend, or enhance roadside vegetation by:

- enhancing safe function of the road,
- protecting biodiversity values of ecological communities - particularly aiming to prevent biodiversity loss and protect vulnerable or endangered species,
- protecting cultural and heritage assets,
- creating and maintaining fauna corridors between remnant vegetation,
- improving the visual amenity of QPRC roadsides,
- protecting water quality and minimise the impact road systems have on water ways,
- minimising erosion caused by road use or road maintenance activities and the subsequent topsoil loss and sedimentation build-up,
- minimising the incidence of wildlife collisions,
- reducing the spread of weeds, pathogens, and other disease vectors,
- preventing or minimising run-off pollution from the road into surrounding habitats,
- minimising maintenance costs,
- limiting the risk and impact of fires, and
- preventing any other unnecessary impact to road verges or the surrounding ecosystems.



Captains Flat Road, Carwoola displaying roadside vegetation with high ecological value.

2 – Values of Roadside Vegetation

Properly maintained Roadside vegetation has significant benefits to the environment, the community, and the economy. Road reserves constitute a significant amount of land – almost 6% of land across NSW is a road reserve. That means that the benefits of well-maintained road reserves are very important and have impacts far beyond the boundaries of the reserves. These benefits are briefly discussed below.

2.1 – Biodiversity and Cultural Conservation

Roadside reserves can act as key biodiversity hotspots and wildlife corridors when properly protected and maintained. QPRC's roadsides contain Endangered and Critically Endangered Ecological Communities, and several threatened flora and fauna species, and often act as key habitats. In rare cases, most or all individuals within a population occur along roadsides. Roadside reserves also act as key wildlife corridors that act to connect larger areas of natural bushland, making them key to increasing genetic diversity and population spread. Poorly maintained road reserves can prevent genetic movement and create genetic bottlenecks. Road reserves can also act as key seed supply sites for planting and revegetation projects.

Roadsides often contain items of historical indigenous or non-indigenous items. This can include cultural heritage items like middens, scarred trees and rock engravings, and European heritage items like historic road markers, historic roads, or historic bridges or culverts. These items should be conserved using proper road reserve management to minimise the impact of road use activities.

2.2 – Weed Management

As road reserves are disturbed environments with constant vehicular movement, they can spread of weeds. Weeds thrive in disturbed areas and can spread weeds quickly and easily. Maintaining road reserves in good conditions can reduce the spread and increase in density of weeds throughout the council area by limiting the area of exposed areas prone to infestation. This prevents the weeds from proliferating through the LGA.

2.3 – Waterway, Catchment and Soil Health

Properly maintained roadside vegetation acts to mitigate the impacts of road construction, use and management. It acts to filter runoff contaminated from road use activities, slows water flows and wind movement to prevent erosion and sedimentation problems, reduces soil salinity, and binds the soil to further prevent erosion and soil loss. This acts as a buffer to surrounding ecosystems, protecting

water catchments and wetlands from contamination or sedimentation.

2.4 – Economic and social benefits

Roadside Vegetation has several knock-on social and economic benefits. They provide a buffer zone for agricultural and environmental land, reducing the potential for weed or pollutant spread while also acting as a windbreak and shade for livestock. The provide an avenue for moving stock between paddocks or properties, while also offering areas for agistment in times of drought. They can also offer habitat for pollinator or pest control species, further aiding neighbouring agricultural properties. Roadside vegetation also provides aesthetic and amenity values to the communities using the road and provides shade and heat mitigation to pedestrians. This improves the usability of roadsides for recreational purposes like walking, horse riding, and cycling.

2.5 – Reduction in Maintenance Costs

Native roadside vegetation has practical maintenance and economic benefits. Due to the unique properties of most native plants, they require no supplementary watering or care, and native grasses require less frequent or no mowing. Native grasses also produce a relatively lower fuel low compared to exotic grasses and are less palatable to grazing animals than exotic counterparts which reduces the probability of a vehicle collision. Maintaining roadside vegetation in a healthy state also reduces the maintenance required on roads by preventing erosion and associated land slips and undermining which may interfere with the function of the road while also reducing damage associated with bushfire and tree fall.

3 – Roadside Vegetation and the Law

The **NSW *Roads Act 1993*** (subsequently referred to as "the Roads Act") sets out the legal framework for the classification and management of roads within NSW. The Roads Act also regulates the maintenance, usage and construction of public roads. The Roads Act categorises public roads as State, Regional or Local Roads and defines the responsibilities related to each road category.

Transport for NSW (TfNSW) is responsible for state roads, has power to delegate control of State Roads to councils, making council a road authority for relevant roads. Additionally, local councils have contractual responsibility for managing the footpaths and road reserves on State roads (excluding freeways). This is contracted through Road Management Council Contracts (RMCCs) and is administered through TfNSW. Councils are responsible for maintaining and managing Regional and Local roads (aided by funding contributions from TfNSW) and responsible for managing these roads to certain specifications. The specification most relevant to this report is *Transport for NSW (TfNSW) QA Specification G36: Environmental Protection.*

The Roads Act and relevant specifications should be referred to prior to any major works being conducted. Some parts of the Roads Act enable road authorities to undertake certain necessary works by bypassing other legislation – this includes some emergency works, some works relating to road construction, and the removal of trees that impede the safe use of a road. This legislation should be checked prior to conducting works.

Other legislation and policies relevant to Road Vegetation Management are outlined in Table 1 below. Please note that legislation and policy are subject to ongoing review and change and this table should be treated as a guide only. Legislation is listed in alphabetical order, and no precedence is given to any legislation unless indicated. Where legislation is quoted directly, this legislation may change over time and should be checked prior to relying on this table. If listed legislation has been repealed or replaced by newer legislation, disregard the repealed legislation, and adhere to the replacement legislation.

3.1 – Legislation and Policies

Table 1: Legislation and policies relevant to Road Vegetation Management

Legislation/Policy	Description	Application to Road Reserve Management
Biodiversity Conservation Act 2016 (BC Act)	Defines and lists endangered ecological communities, threatened species, and key threatening processes. The Act also identifies offences and legislates penalties for acts that negatively impact biodiversity.	This Act should be used in conjunction with the Environmental Planning and Assessment Act (EP&A Act)(discussed below). Activities outlined the EP&A Act must additionally be assessed for significant biodiversity impacts (clearing or prescribed impacts) on threatened species or ecological communities under the Biosecurity Act. This Act should also be referred to prior to any major works being conducted, and a Biodiversity Development Assessment Report or other relevant assessment or works specified in the Act.
Biosecurity Act 2015	If a weed poses a biosecurity risk in a particular area, but is not the subject of any specific legislation, the general biosecurity duty would apply to manage that weed or prevent its spread.	Roads are considered high risk pathways for the introduction of new or emerging weeds and pathogens.
Crown Lands Management Act 2016	Crown Roads (or 'paper roads') were established during colonisation of NSW and are typically part of the state's public road network.	The NSW Crown lands manages Crown roads under the NSW Roads Act 1993.
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	Commonwealth legislation that protects matters of national environmental significance, which includes EPBC listed threatened ecological communities and species. As Commonwealth Legislation, it supersedes any contradictory State Legislation.	Roadside construction and management should avoid or minimise impacts to federally listed species or ecological communities or other matters of significance. Where impacts are unavoidable, an environmental impact statement must be prepared by a qualified ecologist. If impacts are assessed as significant, the proposal is referred to the Commonwealth to determine whether it is a Controlled Action, which requires approval under Chapter 6 Part 9 of the Act.

Legislation/Policy	Description	Application to Road Reserve Management
Environmental Planning and Assessment Act 1979 (EP&A) Supplemented by *Environmental Planning and Assessment Regulation 2021(*EP&A Regulation)	Principal state planning legislation. The EP&A Act provides the statutory basis for environmental assessment of development, together with State Environmental Planning Policies (SEPPs) and Local Environment Plans (LEPs). Use in conjunction with the Biodiversity Conservation Act 2016	Act dictates when permission must be sort before undertaking works, considering a range of environmental impacts including impacting threatened species or their habitats, threatened ecosystems, or reduction of recreational, aesthetic, economic or scientific values etc. It also legislates when an Environmental Impact Assessment is required and how and when permission must be sort prior to works commencing.
Fisheries Management Act 1994	Protects marine and riparian vegetation, fish, and other aquatic life and vegetation.	Relevant for any work that requires dredging, reclamation of land, excavation of a bed or a bank, or obstructing fish passage (bridges or crossings). These activities required a permit or consultation. Most important reference point is Part 7 of the Act, Protection of Aquatic Habitats.
Heritage Act 1997	Specifies the processes for protecting items or places of State and Local Heritage Significance (historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic).	Approval is required when conducting any works on a heritage place listed on the State Heritage Register (or covered by an interim order), and for excavation which may disturb an archaeological relic.
Local Government Act 1993	Councils are considered Road Authorities under the Roads Act 1993, and the construction and maintenance of all roads other than freeways and state highways is a basic function of Council.	Council constructs and maintains all relevant roads in the QPRC local government area, and additionally may provide these services under contract to the Transport for NSW for state roads.
Local Land Services Act 2013 (LLS Act)	LLS is responsible for the management and delivery of local land services to ensure the proper	Responsible for stock (grazing and droving) permits along roadsides, which require consent from Council for Council roads.
	management of natural resources.	

Legislation/Policy	Description	Application to Road Reserve Management
National Parks and Wildlife Act 1974 (NPW Act)	Establishes oversight councils and creates provisions for the protection of conservation or cultural features including biodiversity conservation, indigenous heritage conservation, and European heritage conservation.	Administers indigenous Australian heritage impact permits and interim protection orders.
Protection of the Environment Operations Act 1997	Protect and restore the environment particularly in relation to pollution mitigation	Licence required for construction of roads that require the extraction or processing of 50,000 tonnes of material or more, or the construction of roads of 4 lanes or more. Construction includes both the initial construction, plus the widening or rerouting of existing road. It does not refer to other maintenance or repair work. Any work with the potential to cause pollution, erosion or sedimentation must comply with requirements of this Act.
Rural Fires Act 1997	Bushfire prevention and management.	Local government has the responsibility to take all practical steps to minimise the occurrence of or spread of bushfires on all managed roads of all classification types. Require assessment as part of the development application process, or where council activities place temporary works depots (including fuel storage) in bushfire prone lands. Further operational requirements during periods of Total Fire Ban.
State Environmental Planning Policy (Transport and Infrastructure) 2021(SEPPT&I)	Provides planning framework for infrastructure in NSW, including what activities required consent, or are prohibited.	Refer to Division 17: Roads and Traffic

Legislation/Policy	Description	Application to Road Reserve Management
State Environmental Planning Policy (Biodiversity and Conservation) 2021(SEPPB&C)	Provides planning framework for infrastructure in NSW with a focus on biodiversity and conservation. A significant part of the policy applies to Koala habitat and is relevant to QPRC roadsides	Refer to Chapters 3 and 4 of the policy regarding Koala Habitat protection for relevant land areas. This will likely consolidate into one chapter in the future as policy changes are amalgamated for different areas. Also refer to Chapter 13 of the policy: Strategic Conservation Planning.
Water Management Act 2000 (WM Act) Supplemented by Water Management (General) Regulation 2018	Dictates the sustainable management of water sources in NSW.	Under Section 41 of the Water Management (General) Regulation 2018, public authorities are exempted the usual requirement to obtain a Controlled Activity Approval for works on the waterfront (defined as any area within 40 metres from the top of the bank of any river, lake or other water source. Activities that interfere with groundwater aquifers – specifically the extraction of sand or road base – must obtain approval.

3.2 – Exemptions or Approvals Required for Works

Table 2: Exemptions or Approvals

Activity	Requirements	
	Exemptions	Permits/Approvals
Road Construction or Widening	N/A	Preparation of a Review of Environmental Factors (REF) under the *EP&A Regulation 2021* prior to work being conducted.
		Consider opting into the Biodiversity Offsets Scheme under BC ACT 2016, especially for high conservation value roadsides where significant impacts are likely.
		Refer for approval any activity that may have Significant Impacts to Matters of National Environmental Significance under *EPBC Act 1999*
		Conduct assessment into likelihood of Koala Habitat on sites with area greater than 1ha under *(SEPPB&C) 2021*
Vegetation Maintenance Works	Permitted under s.88 of the Roads Act: *"A roads authority may, despite any other Act or law to the contrary, remove or lop any tree or other vegetation that is 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."*	Refer for approval any activity that may have Significant Impacts to Matters of National Environmental Significance under *EPBC Act 1999*
		Conduct assessment into likelihood of Koala Habitat on sites with area greater than 1ha under *(SEPPB&C) 2021*
Works within 40 metres of a riverbank or other water course	Under Section 41 of the Water Management (General) Regulation 2018, public authorities are exempted the usual requirement to obtain a Controlled Activity Approval for works on the waterfront (defined as any area within 40 metres from the top of the bank of any river, lake or other water source.	Activities that interfere with groundwater aquifers – specifically the extraction of sand or road base – must obtain approval.
		Refer for approval any activity that may have Significant Impacts to Matters of National Environmental Significance under *EPBC Act 1999*

Activity	Requirements	
	Exemptions	Permits/Approvals
Working within waterways	Vegetation maintenance works as dictated above.	Permit required for any dredging, reclamation of land, excavation of any riverbed or bank, or any works that may interfere with fish passage under the *Fisheries Management Act 1994*
	Weed control to meet General Biosecurity Duty under the Biosecurity Act (2015)	Refer for approval any activity that may have Significant Impacts to Matters of National Environmental Significance under *EPBC Act 1999*
		Refer for development consent any activity that an Environmental Planning Instrument specifies requiring consent under Part 4 of the *EP&A Act (1979)*
Weed management	Weed control to meet General Biosecurity Duty under the Biosecurity Act (2015)	Permit required to move or otherwise deal in Prohibited Matter
Fire management	Exemptions may be given for works by authorised officers or fire authorities, if it follows an approved bush fire management plan, if an there is an active bushfire hazard reduction certificate, or if there is a bush fire code applying to the area.	Permit required for any burning activities including hazard reduction burns under RFC Act (1997)
Installation of fence lines and signage.	Exempt development under Schedule 1 of *SEPPT&I (2021)*	Approval required if carried out in the critical habitat of an endangered species or community under the *EP&A Act (1979)*
Installing sediment and erosion control	Exemption for roads are maintained in accordance with the principles of erosion and sediment control documented in relevant guidelines (e.g. Landcom 2004 – 'Blue Book', OEH 2012 – Erosion and sediment control on unsealed roads).	N/A
Emergency works	Where works are specified as exempt development in the *SEPPT&I (2021)*	Approvals required for any works not specified as exempt under development in the *SEPPT&I (2021)*

4 – Roadside Vegetation Classifications

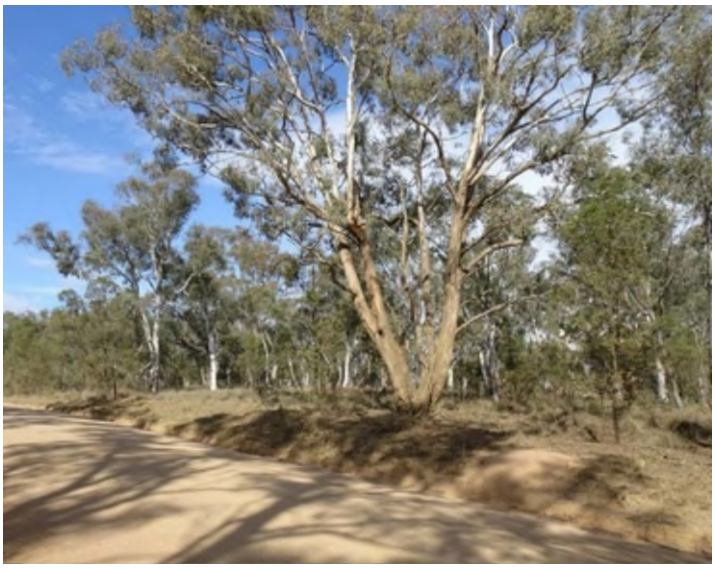
Roadside vegetation can be broken into four different classifications of conservation value, based on the existing ecosystem features, particularly remnant trees. There are three typical classifications that use a “traffic light” system. This includes High Value Conservation areas (in red), Medium Value Conservation areas (in orange) and Low Value Conservation areas (in green).

This colour coded system can be implemented in road maps to inform how works are carried out on any section of road. As may be expected, there are higher levels of care required for red roads, and which decreases as you move through the traffic light system.

The final category of roadside are Special Management areas. These sites typically contain threatened or endangered species of flora, the habitat for threatened or endangered species of fauna, significant cultural or heritage items, or an infestation of a weed or pathogen that needs specific management requirements. These sites are treated as High Value Conservation Areas, but also have additional rules or requirements that go beyond this rating. No work should be conducted on any of these sites without consultation with the Standard operating procedures.

4.1 – High Conservation Value (HCV)

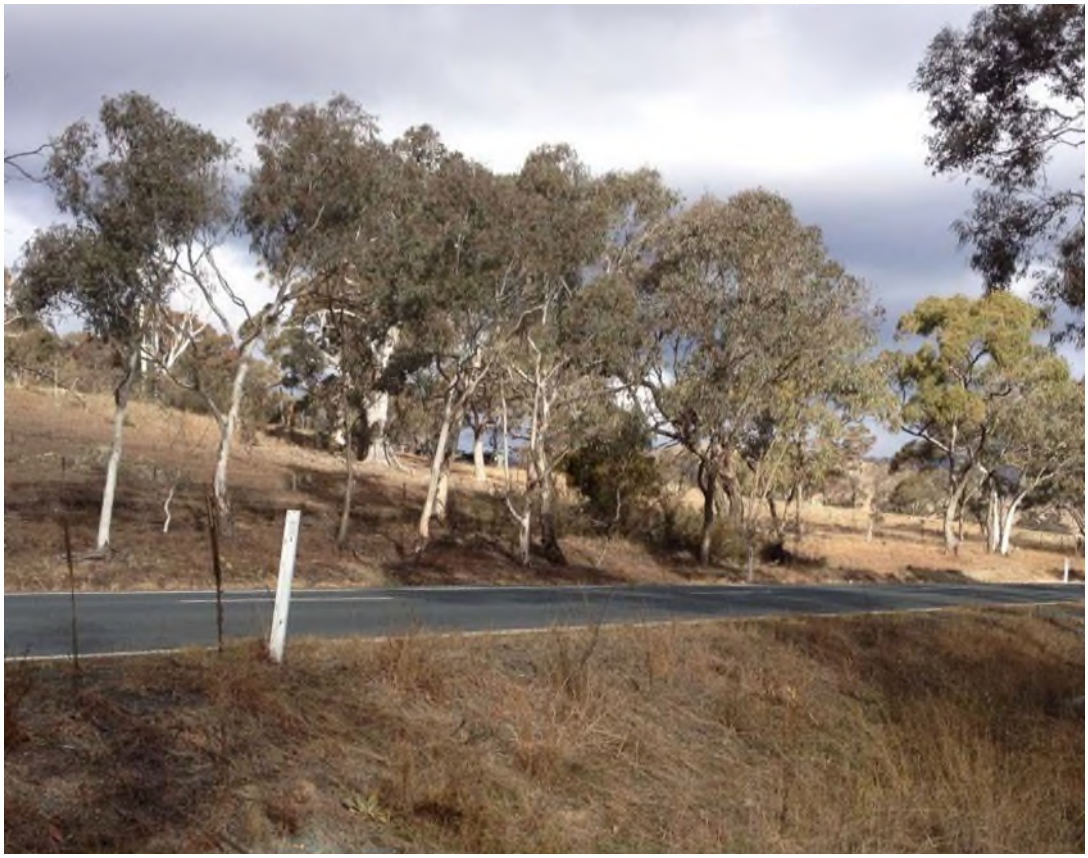
HCV roadsides often contain one or more of the threatened ecological communities (TEC) or records of threatened plants or animals. HCV roadsides can also include non-TEC plant community types where vegetation is relatively undisturbed, where vegetation structure and layers are intact, and where there is relatively little evidence of disturbance or weed invasion. A roadside that contains several large trees (typically with a trunk diameter of more than 1 metre for eucalyptus species), and lots of shrubs or native grasses underneath with very little sign of clearing or weed infestation is usually classified as HCV. QPRC also contains some of the most significant grassy ecosystems in the state. A roadside without trees but full of native grasses with minimal weed infestations may also be classified as HCV. If you are unsure, please contact environmental staff for advice.



This example of Box-Gum Woodland EEC on Gidleigh Lane has mature and regenerating trees, a diverse understorey, with tree hollows, fallen timber and leaf litter providing habitat for a range of native animals.

4.2 – Medium Conservation Value (MCV)

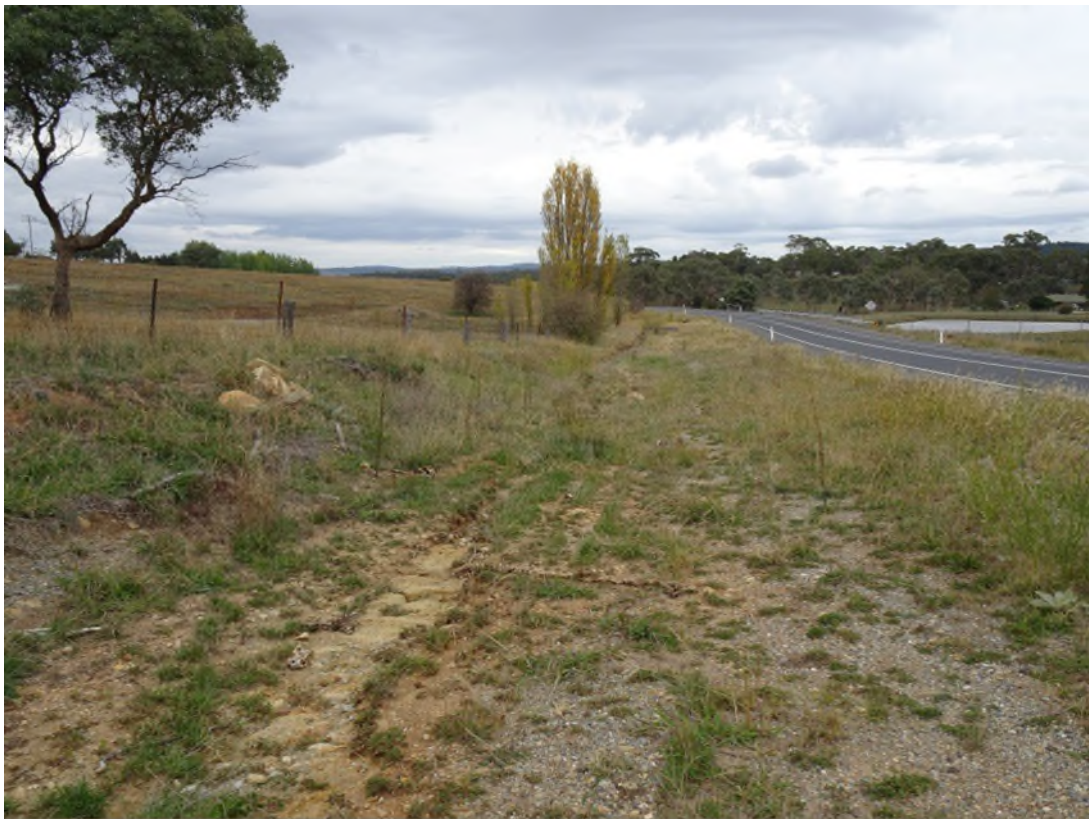
MCV roadsides are typically somewhat disturbed, with one or more layers of vegetation modified or absent. They provide less diverse habitat and may have a moderate level of weed invasion. These areas support fewer and less specialised native animal species, and are more likely to be populated by opportunistic and sometimes aggressive bird species, both native and exotic (e.g. noisy miners, currawongs, starlings, Indian mynahs), and other pest animals. A roadside that contains large, hollow bearing trees but with very limited native shrubs and understorey is a good example of this category. Another example would be native shrubs and grasses, lacking large trees and containing a moderate level of weed infestation.



This example of a MCV roadside: Tableland Dry Sclerophyll Forest remnant located on Cooma Road has a fairly intact overstorey, but few shrubs, and largely native understorey with weed incursions.

4.3 – Low Conservation Value (LCV)

LCV roadsides are highly disturbed with little to no intact native vegetation. It may contain individual or isolated clumps of native trees or shrubs with a weedy understorey. While this provides some minimal resources for native animals, it is of little conservation or habitat value. They are often areas managed through routine slashing or spraying, often heavily grazed or cleared, often erosion due to vegetation loss, and the area often contains significant roadkill drawn by the green pick offered by weedy grasses.

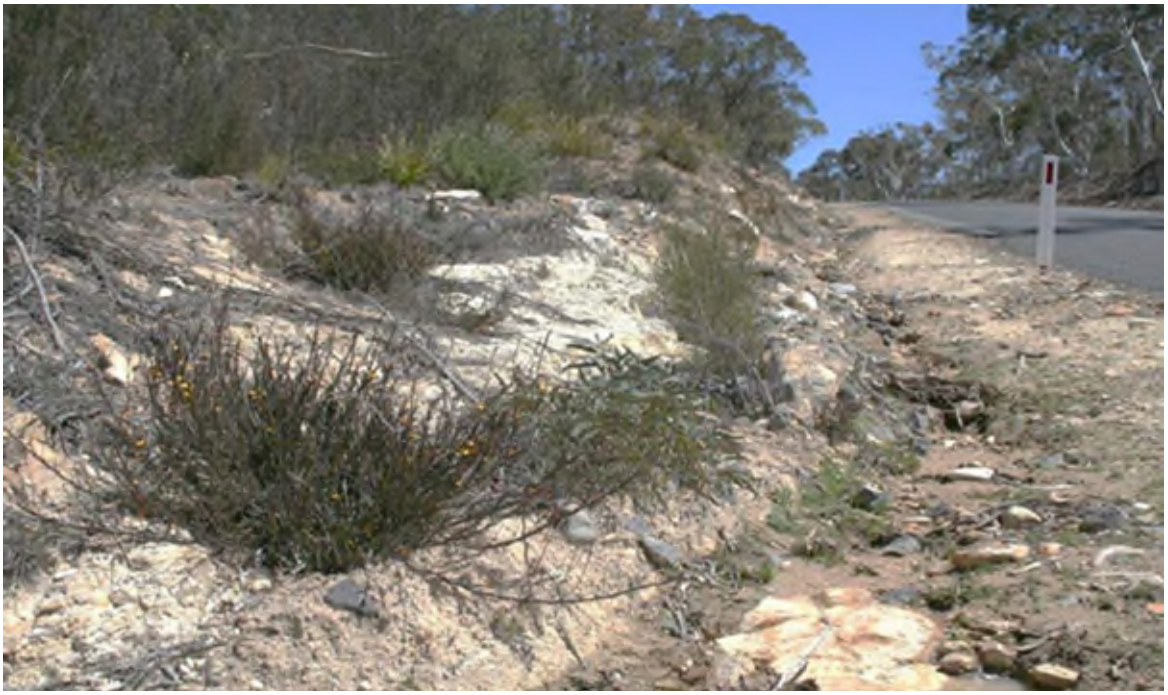


The photo shows a classic example of a LCV roadside, this one taken on Captains Flat Road. Note the absence of mature native trees or shrubs, sparse weedy grass cover, and exposed dirt.

4.4 – Special Management Area (SM)

Some roadside verges in QPRC contain vegetation or features that require special management plans or practises. This is typically because the roadside verge contains endangered or critically endangered species, because the roadside contains new and potentially damaging weed or pathogen species, or because the site contains cultural or heritage items that must be protected. No work is to be conducted on these sites without prior approval, and works should always follow the required guidelines for each site. In general, these sites will follow the same rules as HCV sites. However, these sites will have extra guidelines specific to what is present on the site. Check Appendix 1 for details.

Sites will be marked on both sides of the road, and at either end of the SM area. This is to be fully implemented within 12 months of this RVMP being implemented. Supervisors should be aware of the location of these sites and discuss guidelines with staff prior to sending them into these locations. If roads staff or contractors find a marker during the course of works, works should immediately cease and the site should be reported to their supervisor. Maps of these sites are available online through Intramaps and these sites are included as Appendix 1 of this report. If staff find these signs on a road reserve, they should stop work and refer back to their team leader or supervisor.



The Bombay Bossiaea is a vulnerable species that occurs only in the QPRC area. The population is confined to a stretch of the Shoalhaven River that includes the Bombay Road crossing. This is considered a SM site.

5 – Managing Key Threatening processes

Key Threatening Processes (KTPs) are processes or activities that may have adverse impacts on threatened species or ecosystems, or that may make non-threatened species or ecosystems become threatened. They are defined and listed under legislation under both state and commonwealth legislation in the BC and EPBC Acts respectively. Any KTPs related to road construction, use or management must be considered and mitigated.

The NSW BC Act (2016) defines KTPs in Division 5 of the Act as:

> *(1) A threatening process is eligible to be listed as a **key threatening process** if, in the opinion of the Scientific Committee—*
>
> *(a) it adversely affects threatened species or ecological communities, or*
>
> *(b) it could cause species or ecological communities that are not threatened to become threatened.*

The Commonwealth EPBC Act (1999) defines KTPs in Part 13 of the Act as:

> *(3) A process is a **threatening process** if it threatens, or may threaten, the survival, abundance or evolutionary development of a native species or ecological community.*
>
> *(4) A threatening process is eligible to be treated as a key threatening process if:*
>
> *(a) it could cause a native species or an ecological community to become eligible for listing in any category, other than conservation dependent; or*
>
> *(b) it could cause a listed threatened species or a listed threatened ecological community to become eligible to be listed in another category representing a higher degree of endangerment; or*
>
> *(c) it adversely affects 2 or more listed threatened species (other than conservation dependent species) or 2 or more listed threatened ecological communities.*

Both State and Commonwealth legislation list the KTPs legislated within each piece of legislation. As the definitions are similar between legislation, and the legislations share many almost identical KTPs, we will discuss the implications to road management in one joint section. Those KTPs relevant to road management are listed in the table below, and will be discussed in more detail later in the section. The KTPs will be listed verbatim in the table below, and grouped into a section with other relevant KTPs. Refer to listed KTPs in their official format for more details.

Please note that KTPs under the BC Act are at the NSW level, and KTPs under the EPBC Act are at the Commonwealth level.

Table 6 – List of KTPs

KTP	Act	Notes	Combined Title
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	BC Act	This refers to reducing or increasing flows, changing the characteristics of major flow events, changing surface or subsurface water levels, etc.	Impacts to Watercourses, Floodplains, and Wetlands
Aggressive exclusion of birds from potential woodland and forest habitat by over-abundant noisy	EPBC Act	Noisy Miners are native birds which thrive in fragmented woodland habitats, and thrive on woodland edges (like	Habitat Invasion by Noisy Miners

miners (*Manorina melanocephala*)		roads). They are known for aggressively excluding native birds from this habitat.	
Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners *Manorina melanocephala.*	BC Act		
Bushrock removal	BC Act	This refers to the removal of natural surface deposits of rocks from native areas. This removes habitat and other ecosystem requirements from threatened native species in QPRC	Habitat Destruction
Removal of dead wood and dead trees	BC Act	This refers to the removal of forest and woodland waste for road beautification, firewood collection, mulching, removal of dead trees etc. This removes habitat and also disrupts many ecosystem processes.	
Loss of Hollow-bearing Trees	BC Act	Tree hollows are cavities formed in the trunk or branches of living or dead trees. They are most common in older trees, and are integral habitat for many threatened species.	
Clearing of Native Vegetation	BC Act	The removal of native trees and vegetation, particularly established ecosystems	Clearing of Native Vegetation
Land Clearance	EPBC Act		
Dieback caused by the root-rot fungus (Phytophthora cinnamomi)	EPBC Act	*Phytophthora cinnamomi* is a plant pathogen that can cause disease, death and species extinction in susceptible plants. It is impossible to eradicate once present, and road management exercises can spread it.	Plant and Animal Diseases
Infection of native plants by Phytophthora cinnamomi	BC Act		
Infection of amphibians with chytrid fungus resulting in chytridiomycosis	EPBC Act	Disease that is potentially fatal to all native amphibians, can be exacerbated by poor environmental conditions and spread by road work activities.	
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	BC Act		
Infection by Psittacine circoviral (beak and feather) disease affecting endangered psittacine species and populations	BC Act	Beak and feather disease impacts all species of parrot. Birds are at high risk in fragmented habitat that increases the likelihood of sequential use of nest sites. Impacts birds in QPRC including swift parrots.	
Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species	EPBC Act		

Invasion and establishment of exotic vines and scramblers	BC Act	Includes many vine and scrambler weeds already found in or with potential to spread in QPRC.	Weed Infestation
Invasion and establishment of Scotch Broom (Cytisus scoparius)	BC Act	Scotch Broom is already present in QPRC, including on roadsides.	
Invasion of native plant communities by exotic perennial grasses	BC Act	QPRC contains some of the most important grassland habitats in the state, and roadsides are prone to exotic grass invasion.	
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	EPBC Act BC Act	Identical wording for both KTP titles. Any non-native plants that may invade roadsides.	
Loss and/or degradation of sites used for hill-topping by butterflies	BC Act	Damage to hilltop habitat used by certain species of butterfly for mating etc	Loss and/or degradation of sites used for hill-topping by butterflies

5.1 – Impact to Watercourses, Floodplains, and Wetlands

Several road construction and maintenance issues can have significant impacts on water systems that alter the natural flow regimes in some way. This leads to a reduction in viable riparian or wetland habitats, can contribute to species becoming endangered or extinct, proliferation of weeds and pest animals, and reduces the ability of humans to utilise water resources. There are many road processes that can have this impact:

- The construction of crossing points can often permanently slow and periodically stop the natural flow of water.
- Crossing points and structures like causeways, pipes, or culverts, can prevent fish passage, isolating populations and preventing genetic flow.
- Larger crossing points can also cause damming of flood debris, further blocking waterways.
- Roads prevent groundwater absorption, and act to increase the volume and speed of water runoff. This causes erosion and sedimentation further downstream, particularly if drainage water from roads ends up in rivers or wetlands. This can compound with pollution from road use and construction.
- Construction of drainage points on roads can alter water regimes to create wetlands where none exists, or alter existing wetlands from intermittent to permanent inundation.

Many of these issues are commonplace in road design and will exist on historic roads throughout the LGA. There will exist budget and practicality issues that will prevent these issues being fully mitigated. Future road construction and management activities should mitigate this KTP, and problematic areas should have mitigating works undertaken as allowed by budget.

Guidelines to Minimise Impact to Watercourses, Floodplains, and Wetlands:

- do not establish stockpile or dump sites,
- minimise disturbance and only conduct works that are necessary to the function of the road or health of the roadside verge,
- install erosion buffers and netting during work process to avoid topsoil loss,
- install proper drainage on roadsides to prevent erosion and to minimise soil pollution,
- divert drains away from wetland or low-lying areas,
- capture silt by silt traps, sediment fencing, barriers, sedimentation ponds or retarding basins and maintain these structures regularly,
- never remove vegetation or use herbicides to maintain drains: this produces bare soil, increases erosion,
- use energy dissipating structures at drain outlets and disperse flows onto adjacent areas with good vegetation to increase filtration and prevent ponding, and

- when constructing or upgrading water crossings, always install bridges where possible. Where bridges are not possible, use culverts with multiple large pipes or box-shaped cells to allow normal water flow and prevent hinderance to fish movements. Where culverts are not possible, use a ford with adequate depth to allow regular water flow. If a causeway must be used, construct a fish passage to allow circumvention of the causeway.

5.2 – Habitat Invasion by Noisy Miners

Noisy Miners (*Manorina melanocephala*) are a native species of honeyeater that prefers fragmented and open forest landscapes. While it is a native, it has benefited from land clearance activities associated with human use, including agriculture, urbanisation and road construction. Where they have fragmented habitat, they form groups of several hundred birds, and aggressively physically attack and drive away other bird species. This can result in Noisy Miners being the only bird species in an ecosystem. Where woodlands are large and established, Noisy Miners typically do not penetrate more that 300 metres beyond the fragmented border. This means that roads act as a prime location for Noisy Miners to spread and occupy surrounding woodlands. In areas where roads intersect large areas of healthy forest or bushland, maintaining healthy road verges can prevent the establishment or reduce the impact of Noisy Miners.

Please Note: Noisy Miners are a native species, and direct action or harm against the species is illegal in most cases and is not endorsed by this document.

Guidelines to Minimise Habitat Invasion by Noisy Miners:

- apply these guidelines to any roadside that borders large, healthy forest or woodland ecosystems and list these roadsides as HCV,
- maintain existing roadside vegetation in situ, only removing what is necessary for safe function of the road,
- avoid earthmoving works close to larger trees or protected shrubs to prevent damage to roots or other plant structures,
- protect understory vegetation,
- prevent animals from grazing these roadsides,
- treat exotic grasses and revegetate with native grass seeds,
- conduct revegetation exercises where possible, preferably to link scattered areas of HCV,
- construct guard rails or barriers to protect key vegetation, and
- replace disturbed or destroyed vegetation with similar vegetation.

5.3 – Habitat Destruction

Roadside maintenance and construction often result in the destruction of key habitat features integral to the functioning of the ecosystem. This can include the removal of bush rocks or dead wood, or the removal of larger hollow-bearing trees.

Bush rock is the natural surface deposits of rock in the natural landscape and serves many purposes – it provides habitat for plants and animals, while also providing shelter for small animals from the elements and predators, providing a safe place to find food. They enable animals to hide from bushfires. They provide basking sites and egg-laying sites for reptiles. Bush rocks also inhibit soil erosion, retain soil stability, reducing the intensity of fires, and preserves soil moisture. Dead wood provides very similar benefits – the hollow or decay wood provides very good habitat, while maintaining soil health. Decaying wood also provides habitat for key decomposers and returns nutrients to the soil.

Removal of bushrock and dead wood can result in the localised extinction of animal and plant species. It can also prevent animal species from travelling along the road reserves to increase genetic spread. This also has macro and micro impacts on soil health, which can have much larger impacts on the wider ecosystem.

Tree hollows are cavities formed in the trunk or branches of living or dead trees. They are usually formed as a result of wind breakage, lightning strike or fire, or as a result of termite, insect or fungal attack. They usually only occur in very large, old trees (over 100 years old). Hollows vary in size, and provide key habitat and nesting sites for a very large number of birds, mammals, reptiles and insects. They also provide key foraging and shelter benefits. Many native animals depend on these tree hollows for the survival of individuals and the proliferation of the species. The loss of hollow-bearing habitat trees are a key limiting factor in the conservation of many threatened species.

Guidelines to Minimise Habitat Destruction:

- identify and mark hollow-bearing trees and key ecosystem features, avoid damaging or removing these features during works process,
- avoid earthmoving works close to old growth trees to prevent root damage,
- use the three-cut pruning method on older trees to avoid bark damage/entry of pests and pathogens
- clearly mark extent of works and do not impact native vegetation or ecosystem features beyond this,
- do not park vehicles or plant on established ecosystem features,
- retain habitat features wherever possible (this includes hollow-bearing trees, rocks, fallen timber, leaf and bark litter. Do not “tidy up” by removing site features, and
- manage removed vegetation by mulching or chipping small branches and spreading thinly over exposed soil. Larger branches and trees can be left in situ on site wherever possible.

5.4 – Clearing of Native Vegetation

Clearing native vegetation is one of the most immediate and impactful impacts that road use activities has on biological diversity. Even clearing very small areas (less than two hectares) can have significant impacts on biological diversity. This not only impacts the flora that is cleared, but also the animals and other life that require the support of these plants to survive. This can result in:

- localised or species-level extinctions, additionally a loss of local genotypes,
- fragmentation of woodland and forest habitat which reduces the ability of plants and animals to interact over larger distances. This can limit the interactions within and between species necessary for survival and repopulation – including breeding, pollination, seed dispersal, genetic dispersal, etc, and can lead to significant inbreeding problems,
- expansion of dryland salinity and rising of groundwater (which adds to the impact roadsides have on water systems),
- increased habitat for invasive or unwanted species, and
- loss of leaf litter and dead wood drops, which subsequently impacts soil biota and moisture.

The clearing of native vegetation must be minimised during road construction, maintenance and use activities. Roadside vegetation acts as important habitat, but also acts to reduce the fragmentation of larger pockets of habitat.

Guidelines to Reduce the Clearance of Native Vegetation:

- maintain existing roadside vegetation in situ, only removing what is necessary for safe function of the road,
- clearly mark any vegetation that must be removed on site maps and directly on site,
- do not dump spoil or stockpiles on native vegetation. Remove spoil and stockpiles already in HCVs. Spoil should be immediately removed from site,
- clearly mark extent of works and do not impact native vegetation beyond this,
- conduct native revegetation on edges of HCV areas to act as a buffer, and conduct revegetation to bridge scattered areas of HCV where possible,
- conduct revegetation after completion of works,
- no side arm or flat deck slashing of native vegetation beyond the table drain. Minimise or eliminate mowing wherever possible,
- no scalping or groundcover removal without remedial native revegetation to follow,
- avoid grading beyond existing road shoulder except where required for drainage or water management purposes, and
- do not park plant or equipment on native vegetation.

5.5 – Plant and Animal Diseases

Road use activities can spread or exacerbate animal and plant diseases. In many cases, the movement of road plant and material can spread disease vectors from one area to another. Furthermore, certain practises associated with road maintenance or construction can make plants or animals more susceptible to disease. Three diseases have KTPs that are relevant to road construction activities, however the proper prevention protocols discussed below should be applied to all sites and all diseases, irrespective of assessed threat level.

Phytophthora cinnamomi is potentially one of the worst and most well known plant diseases present in Australia. It is a soil-borne pathogen that spreads in plant roots in warm and moist conditions. It is most widespread in coastal forests, but also occurs at much higher elevations with confirmed sites in the ACT. It can cause dieback or be fatal to susceptible species. Some susceptible plants will have no symptoms at all, which can make it difficult to identify sites infected with this pathogen. This pathogen can spread through surface water and sub-surface water and thrives in wet conditions. This can make roadsides prime locations for the pathogen to spread – particularly if runoff is poorly managed – due to the water collecting and pooling on the sides of roads. It can be easily spread through vehicles and equipment contaminated with soil.

Chytridiomycosis is a fatal disease of amphibians caused by a fungus called *Batrachochytrium dendrobatidis.* It produces waterborne zoospores viable for over 24 hours. It is almost always fatal to amphibians once infected. While it typically spreads through closer individual contact in water, it can also spread through transportation of infected materials or individuals. Poor hygiene on road plant working in wet areas can result in the spread of zoospores in water or other medium (or even live or dead frogs) between sites.

Psittacine circoviral diseases (PCD) is a disease of parrots and related species. Also known as beak and feather disease, it causes distinctive feather loss and beak deformities and is often fatal. This disease can spread between birds, or from prolonged contact with infected nesting material. Removal of wood and nest materials from site can spread this disease to other locations by introducing a disease vector, while a reduction in available nest sites can make this disease more likely to spread within the local population as more birds are forced to use the same nesting sites.

Guidelines to Mitigate Plant and Animal Diseases:

- all workers to follow the Saving Our Species Hygiene Guidelines found at https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Wildlife-management/saving-our-species-hygiene-guidelines-200164.pdf
- all workers to follow QPRC's Biosecurity Hygiene Protocol (BHP) once implemented
- do not translocate wood, nesting materials, water or soil between sites,
- arrive clean, leave clean – wash all tools, plant, vehicles, equipment, and clothes before and after working on a site,
- report any signs of plant or animal disease to the Development and Environment team and discontinue work until further instructions are given,
- follow above guidelines in sections 5.1, 5.3, and 5.4 to prevent pooling of water on road verges and to prevent damage to native vegetation and habitats (preventing stress to organisms and overcrowding),
- and obtain soil, gravel and mulch from clean sites.

5.6 – Weed Infestation

Weeds thrive on soil and environmental disturbance and are readily spread through soil and vehicle movements. This makes road verges High Risk Pathways. Council has a *general biosecurity duty* to prevent the establishment of priority weeds, and to eradicate or control infestations of priority weeds. QPRC has several weeds that are covered by KTPs on a state level, and any exotic plant spread is covered by KTPs on a state and federal level. Additionally, QPRC has many priority weeds to manage on roadsides and council lands. Weeds covered by KTPs are briefly discussed below, while a list of Priority Weeds and Weeds to Watch can be found in Appendix 3.

Invasive and spread of exotic garden plants is a significant environmental problem across Australia, with roadsides being particularly susceptible to encroachment from garden plants. As a vast majority of urban and semi-urban gardens have direct road frontage, exotic plants can spread naturally with intervention. Furthermore, the general public can knowingly and unknowingly spread exotic plants through vehicle or clothing contamination, transport of plants or plant materials between properties, and through illegal dumping. This makes roads a significant vector for the spread of exotic plants. Road reserves can act as a significant buffer for other native vegetation if managed correctly.

Guidelines for Minimising the Impact and Spread of Weed Infestations:

- all workers to follow the Saving Our Species Hygiene Guidelines found at https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Wildlife-management/saving-our-species-hygiene-guidelines-200164.pdf
- all workers to follow QPRC's BHP once implemented,
- do not translocate water or soil between sites,
- arrive clean, leave clean – wash all tools, plant, vehicles, equipment and clothes before and after working on a site,
- rotate herbicide usage where possible to prevent build-up of resistance,
- plant a buffer zone of sacrificial vegetation to protect natural roadside vegetation from weed spread and herbicide use,
- minimise soil disturbance and vegetation removal to limit weed invasion potential after works are conducted,
- minimise exposed earth by revegetating as required,
- schedule works to avoid seeding times of priority weeds – consult Weed Biosecurity staff for details as needed,
- start working in areas with lower levels of weed infestation, and work towards the most heavily infested areas,
- obtain soil, gravel and mulch from weed free sites,
- dispose of any weed matter likely to seed or re-shoot – this includes flowering plants, woody material from some species, etc – consult Weed Biosecurity staff,

- conduct periodic roadside weed inspections to identify any new or developing incursions, and
- increase frequency of weed inspections on roadsides after disturbance, roadworks or fire.

Notes on Weed Management and Clearance Techniques

It is always preferable to control weeds when they are young, prior to flowering and seeding. Manual removal methods are typically better that chemical treatments, however on larger-scale infestations (or for larger weed plants), chemical treatment is more cost effective and practical. There are some scenarios where weed treatment in not advised. This is typically where the weed treatment will cause more harm than good (such as low-priority weeds in an area of high erosion), or LCV roadsides with low priority weeds – weed treatment without proper revegetation on such sites may cause larger issues like erosion and top soil loss.

Best practice control methods should always be used. Refer Biosecurity team.

5.7 – Loss and/or degradation of sites used for hill-topping by butterflies

Hill-topping is a complex behaviour in butterflies that is integral to mating. Many butterfly species are obligate hill-toppers (they must do this to successfully mate) and tend to congregate on hilltops or ridges higher than the surrounding environment. Disturbance of plants or the topography of hill-top or slopes can have a negative impact on butterfly populations.

Guidelines to Prevent Loss/Degradation to Hill-topping Sites:

- Adhere to above guidelines in section 5.3 and 5.4.
- Revegetate hilltop roadsides that have been significantly degraded.
- Monitor butterfly population levels in key sites before, during and after works are conducted.

6 – Other Threatening Processes

6.1 – Firewood Collection

Firewood collection by the public poses a threat to roadside ecosystem health – it removes key habitat and removes soil nutrients and soil biota. It is prohibited to remove firewood from roadsides across QPRC, however the scale of QPRCs roadsides make enforcement unfeasible. There are several methods we can utilise to minimise firewood removal damage:

- community education through social and traditional medias aimed at behaviour change delivered through autumn and winter for maximum impact,
- community education through letterbox drops in key locations through autumn and winter,
- educational signage on roadsides installed permanently, and
- installation of cameras for enforcement in key areas including SC areas that have been impacted by firewood removal.

6.2 – Littering and Illegal Dumping

Littering and illegal dumping is a significant problem across all roadsides. Similar to firewood collection, this act is illegal but difficult to enforce. This can destroy natural habitat, kill native vegetation, and is a hazard to native fauna who may eat or get injured/trapped in the waste. The methods to control this are similar to firewood collection, however with more controls. These include:

- community education through social and traditional medias aimed at behaviour change delivered,
- community education through letterbox drops in key locations,
- engage with Utilities – Waste Operations team to investigate and prosecute illegal dumping,
- continue to work with report a litterer program,
- make waste disposal centres accessible and ensure bins are present at problem areas,
- educational signage on roadsides installed permanently, and
- installation of cameras for enforcement in key areas including Special Conservation areas that have been subject to illegal dumping.

6.3 – Erosion and Top-Soil Loss

Erosion and topsoil loss is a common problem on roadsides. Road use activities and the physical changes required for road drainage can create significant erosion issues. This can cause a number of significant issues including loss of nutrients and soil from the site, pollution into surrounding areas including waterways, salinity dumping into surrounding ecosystems, loss of soil forming chasms and potential undermining of road structures and spread of weed seeds in soil medium. This can be easily controlled in several ways:

- minimise disturbance or destruction of groundcover vegetation during works process,
- minimise scope of works process and only impact the minimum area,
- revegetation with native grass seeds or suitable alternative following works,
- install erosion buffers and barriers during works and revegetation period,
- maintain vegetation in drainage lines,
- maintain ecosystem features like rocks, fallen logs and leaf litter,
- minimise blanket spraying, revegetate after significant spray works, and
- minimise storing stockpiles or spoil on roadsides.

7 – Community Interests

The Queanbeyan-Palerang Community Strategic Plan 2042 highlights that a significant number of residents (14.8%) cite the region's natural environment as a key motivating factor for living in the region, while also citing that improvements could be made to our green spaces and our infrastructure. Environmental sustainability is a key concern of QPRC residents, and 13.8% identified this as our major ongoing challenge. The community is strongly invested in the green spaces of QPRC, and our road reserves are a key feature of the region's natural areas. Our road reserves provide several services that benefit the wider community, and these ecosystem services must be protected in any RVMP. These values are discussed briefly in the table below.

Table 7 – List of Community Interests

Type of Value	Value	Community Benefit
Environmental	Seed source	Allows local providence of seeds for community parks and gardens plantings.
	Wildlife habitat	Protects fauna valued by local community, recreational benefits including birdwatching and bushwalking.
	Weed Suppression	Prevents weeds from spreading throughout region, buffers farms and private property from infestation.
	Water filtration/ erosion control	Protects soil quality on farms and private property, protects water inputs into catchments and farm water sources.
Heritage	Indigenous heritage items	Protection of items or sites that are significant to persons or cultures.
	European heritage items	Protection of items or sites that are significant to persons or cultures.
Recreation	Scenic amenity	Provides visually appealing view to community during driving or recreational activities
	Shade and privacy	Provides privacy barrier from road to properties, shades road and road verges for recreation and driving.
	Recreational pursuits	Enables or enhances pursuits like cycling, horse riding, walking, photography, and bird watching.
Commercial	Agricultural benefits	Supports farms by suppressing weeds, preventing erosion and filtering water (above). Provides access for TSRs, roadside grazing, movement between paddocks, and beekeeping.
	Tourism	Enhances QPRC region as an area worth visiting due to visual amenities, prompts people to stop and enjoy area.

8 – Road Reserve Tree Management and Removal

Managing and potential removal of native trees in road reserves is a complex environmental and legislative decision where competing needs must be considered. Environmentally, native trees would typically not be removed unless they are hindering environmental health – this can happen when large trees are too close together or are blocking out endangered or critically endangered species. From the consideration of safe use and maintenance of the road, or the practical management of road reserves, vegetation may have to be removed. This section briefly covers tree removal from a legislative and environmental perspective to provide clarity.

8.1 – Tree removal from roadsides

As a Roads Authority for most of the non-freeway roads in the LGA, QPRC has specific authority regarding roadside tree removal under the *Roads Act* of 1993 (The Act). Under section 88 of the Act:

"*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.*"

This gives QPRC broad ability to remove or lop any tree or other vegetation that is necessary for road work or removing a traffic hazard. In determining if a tree removal is necessary, several factors can be considered:

- the tree is likely to obstruct or cause impact a typical vehicle (including trucks) in normal use of the road,
- the tree is dead or damaged and is likely to fall or drop branches on the road,
- the tree provides a dangerous visual obstruction and prevents clear view along the road especially at intersections,
- the tree is likely to force pedestrians or cyclists into an active traffic lane, and
- the tree is directly obstructing necessary road construction, widening or maintenance or maintenance works and there is no practical way to conduct the works without tree felling.

9 – Management Action Plan

9.1 – Actions Relating to Legislative Requirements for Road Construction and Widening:

Action	Priority	Timing	Responsibility
Where proposed work occurs in HCV or MCV areas, consider opting into the Biodiversity Offsets Scheme under the *BC Act 2016.* This requires an accredited assessor to prepare a Biodiversity Development Assessment outlining measures to avoid, minimise or offset biodiversity impacts.	High	As required – especially for major works	Infrastructure Services Transport
Develop set of Standard operating procedures (SOPs) outlining measures to be taken to avoid or minimise biodiversity or other environmental impacts.	High	Within 12 months of RVMP being adopted	Infrastructure Services Transport
Undertake survey of roads not currently assessed for conservation values using the Local Government NSW Rapid Assessment Methodology. (https://lgnsw.org.au/Public/Public/Policy/REM-pages/RAM.aspx)	High	Completed within 4 years of RVMP being adopted	Infrastructure Services Transport and related assessors
Conduct internal training on identifying when a road related activity requires assessment or permission, particularly the REF, and how to conduct an REF using the template.	High	Rolled out to current staff within 12 months of RVMP being adopted. Continued annually or as required	Infrastructure Services Transport.
Prepare REF specific to Road Construction and Widening Works	High	Within 12 months of RVMP being adopted.	Infrastructure Services Transport

9.2 – Actions Relating to other Legislative Requirements such as Weed Management, Bushfire Management, etc.

Action	Priority	Timing	Responsibility
Conduct internal training on works that may require approval under legislation, so staff are able to identify and obtain approval as required	High	Ongoing	Infrastructure Services Transport.
Infrastructure Services Transport section staff from manger, coordinator and team leaders to undertake training in Council Roadside Reserves Training modules provided online by Local Government NSW. (https://lgnsw.org.au/Public/Public/Policy/REM-pages/CRR_training.aspx)		Rolled out to current and future staff within 12 months of RVMP being adopted.	Infrastructure Services Transport.
Identify and mapping of priority biosecurity control sites (weeds, pathogens), communication of target sites to appropriate staff for site management.	High	Ongoing	Biosecurity team
Surveillance and control of priority biosecurity weeds adequate to meet General Biosecurity Duty	High	Ongoing	Biosecurity team
Surveillance and reporting of any new weed infestations.	High	Ongoing	Biosecurity team
Prepare a BHP to be used by council staff and contractors working on roadsides. BHP should be based on the Hygiene Guidelines produced for the Saving Our Species program by Department of Planning and the Environment. Staff to receive adequate resources and training to work under these guidelines.	High	Ongoing	Infrastructure Services Transport and Biosecurity team
Prepare a roadside Fire Management Plan. Conduct regular bush fire management practises including hazard reduction activities.	High	Ongoing	Infrastructure Services Transport
Identify sections of road suitable and safe for roadside grazing and TSRs	Medium	As required	Infrastructure Services Transport and Biosecurity team

9.3 – Actions Required to Minimise Impacts of Threatening Processes

Action	Priority	Timing	Responsibility
Develop guidelines to manage KTPs identified in road use and management. These guidelines to be implemented during all road construction or maintenance planning and operations.	High	Within 12 months of RVMP being adopted	Infrastructure Services Transport
Incorporate known environmental information into Council's mapping and QPRC's asset system. Load field tables with information and mapping for use in field.	High	Ongoing	Biosecurity team
Implement a community education program that informs the public of the values of roadside vegetation and discourages damaging activities like firewood collection, littering, verge clearance, etc.	High	To begin within 12 months of RVMP being adopted.	Infrastructure Services Transport
Create effective reporting mechanism for public to identify new threats, safety issues or other road management issues	High	To begin within 12 months of RVMP being adopted.	Infrastructure Services Transport

9.4 – Actions Required to Better Manage SM, HCV and MCV sites

Action	Priority	Timing	Responsibility
Install road markers to identify sections of road evaluated as SM or HCV.	High	Within 2 years of this RVMP being adopted.	Infrastructure Services Transport
Install road markers to identify sections of road evaluated as MCV	Medium	Within 5 years of RVMP being adopted.	Infrastructure Services Transport
Conduct surveys in HCV or near known threatened species to determine if threatened species are present in these areas. Update mapping and conservation values as required	High	Ongoing – Intramaps as of 2019, linking to asset system as of 2020.	Infrastructure Services Transport, Biosecurity team and related assessors
Refer to guidelines listed in Chapter 4 when conducting road or roadside vegetation works on any roadside that isn't SM.	High	Ongoing	Infrastructure Services Transport
Refer to guidelines listed in Appendix One when conducting works on signposted SM areas.	High	Ongoing	Infrastructure Services Transport
Conduct weed mapping of roadsides to better inform roadside vegetation management and identify developing weed issues.	High	Annual	Biosecurity team
Conduct a Roadside Assessment Form prior to undertaking major works on an unclassified roadside.	High	As required	Infrastructure Services Transport, related assessors

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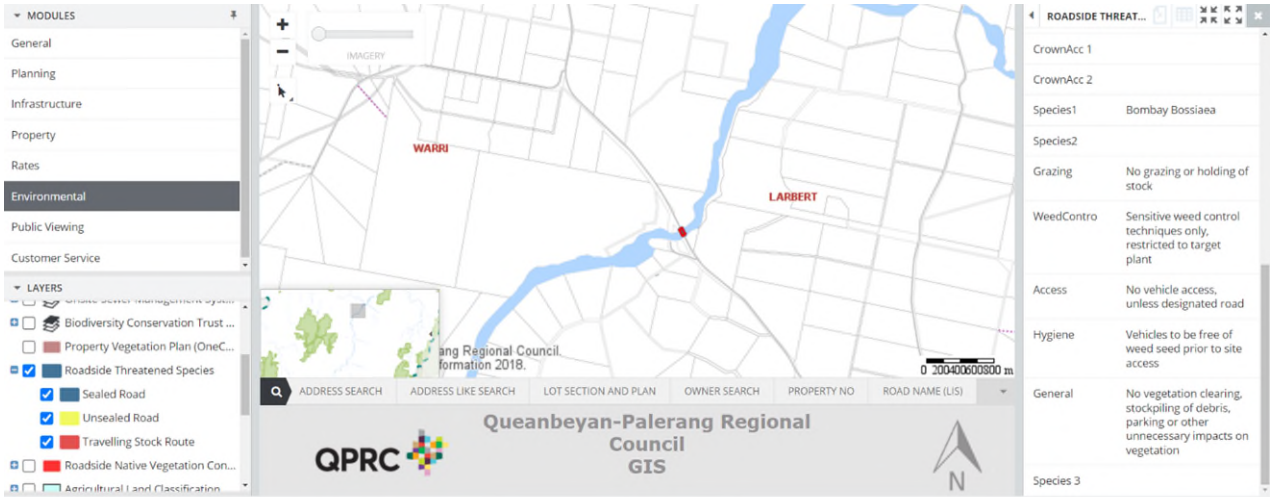
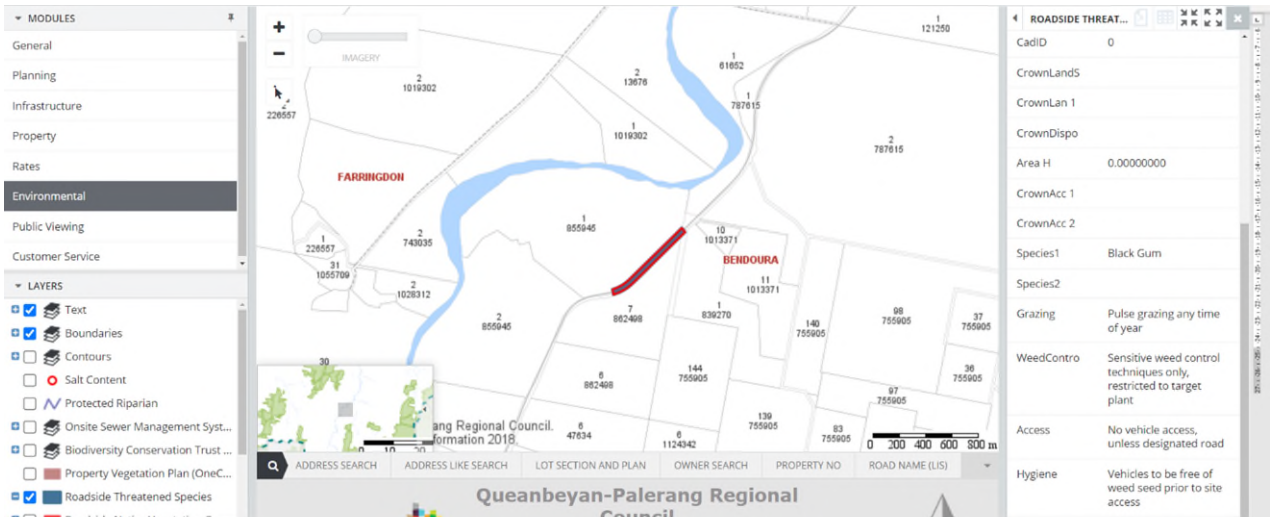
Appendix One – List of Special Management Areas

This appendix relates to the SM areas discussed in 4.4. These guidelines should be accessed prior to any work being conducted on the site. These sites are mapped on QPRC's IntraMaps overlay – in the Environmental Module under the Roadside Threatened Species layer. These sites are subject to change and may grow or shrink over time. Up-to-date mapping information and on-the-ground observations should be observed prior to works. Further sites may be mapped in the future.



The IntraMaps figure above shows the roadside mapping of the Bombay Bossiaea. The figure below shows one section of the roadside Black Gum population.



Appendix Two – Threatened and Endangered Flora, Fauna and Ecosystems of QPRC

Appendix Two lists the threatened and endangered flora, fauna and ecosystems found in QPRC. This list is not exhaustive and may become out-of-date as classifications change. Please refer to up-to-date resources as needed.

Threatened Ecological Communities in QPRC

Ecological Community	Commonwealth Listing	NSW Listing
Araluen Scarp Grassy Forest in the South East Corner Bioregion	N/A	Endangered
Dry Rainforest of the South East Forests in the South East Corner Bioregion	N/A	Endangered
Lowland Grassy Woodland in the South East Corner Bioregion	Critically Endangered	Endangered
Montane Peatlands & Swamps of the New England Tableland, North Coast, Sydney Basin, SE Corner, SE Highlands and Alps bioregions	Endangered	Endangered
Natural Temperate Grassland of the South Eastern Highlands Bioregion	Critically Endangered	N/A
Tableland basalt forest in the Sydney and South Eastern Highlands bioregions (equivalent to EPBC Upland Basalt Eucalypt Forests)	Critically Endangered	Endangered
Werriwa Tableland Cool Temperate Grassy Woodland in the South Eastern Highlands and South East Corner Bioregions'	Critically Endangered	Endangered
Monaro Tableland Cool Temperate Grassy Woodland in the South Eastern Highlands Bioregion	Critically Endangered	Endangered
White Box - Yellow Box – Blakely's Red Gum Grassy Woodland and derived natural temperate grassland	Critically Endangered	Endangered

Threatened Fauna of QPRC

For a list of threatened fauna and flora visit the NSW Bionet Atlas website and undertake a search (https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/nsw-bionet/about-bionet-atlas).

Data limitations: Data in the BioNet Atlas is extensive, but nevertheless patchy. Please review the data limitation information on NSW Bionet atlas website.

Data covers all areas of NSW but will not provide information on the full distribution of a species. The BioNet Atlas is not a comprehensive inventory of all species, nor of all locations of species in NSW. Except in areas where detailed survey information has been incorporated into the database, the search results for a particular area are based on a mix of reported sightings. For example, sightings often follow patterns of human movement, such as along roads.

Appendix Three – Priority Weeds in QPRC

The Southeast Regional Strategic Weed Management Plan focuses on managing weeds to improve the region's biosecurity. This plan details priorities of weed management to protect the Southeast region's environment, economy, and community from the negative impacts of weeds, strengthening the sustainability of the region's natural environment, primary industries, and local communities.

The South East Regional Strategic Weed Management Plan 2023-2027 can found at https://www.lls.nsw.gov.au/__data/assets/pdf_file/0006/722706/South-East-Regional-Strategic-Weed-Management-Plan-2023-2027.pdf