

ENVIRONMENT POLICY**Objectives**

A healthy natural environment is fundamental to our social, physical and economic wellbeing. With the increasingly visible impacts of population growth and its resultant development pressures there has been a broad recognition across the community that development must be scaled to the environment's capacity to assimilate it, if we are to maintain an acceptable standard of living into the future.

The natural environment is the principal reason most people live in, or visit Denmark. In an increasingly populous and fast-moving world, the attractions of tall forests, clean air, pristine oceans, unspoiled landscapes, a closer relationship with nature, and a relaxed pace of life are in growing demand.

Council is responsible for making decisions which directly affect the local environment – and thus, indirectly, other environments. It therefore has an explicit duty to balance the needs of a growing population against their impacts upon the natural world.

Council supports the ethic of ecological sustainability. It will endeavour in all its activities to apply the principles associated with conserving natural resources, integrate environmental accounting procedures into its management decisions, and favour development which clearly demonstrates sympathy with the environment; to preserve Denmark's unique appeal and sense of place in the interests of present and future generations.

Implementation Mechanisms

The objectives of this policy are implemented through a range of mechanisms including but not limited to:

- participatory and advocacy communication;
- stakeholder consultation;
- community education;
- compliance with State and Federal legislation;
- planning
- allocation of resources;
- adaptive and integrated management and best practice processes.

Associated Documents**Organisational Wide**

- Strategic Planning for the Shire of Denmark (February 2006)
- Plan for the Future
- Capital Works Plan
- 10 Year Financial Plan
- Asset Management Plan
- Annual Municipal Budget
- Council Policy Manual
- Local Laws
- Inlet Sandbar Opening Protocols (Wilson, Irwin & Parry)

Planning & Sustainability Services

- Town Planning Scheme No. 3
- Local Planning Strategy (2011)
- Town Planning Scheme Policies
- Municipal Heritage Inventory 2011
- Shire of Denmark Coastal Reserves Management Strategy and Action Plan 2010-2020
- Mt Hallowell Reserve Management Plan
- Wilson Inlet Foreshore Management Plan (2008)
- Shire of Denmark Weeds Strategy and Action Plan 2005 – 2010
- Denmark Greening Plan
- Roadside Vegetation and Conservation Values in the Shire of Denmark (Roadside Conservation Committee, 2011)

Infrastructure Services

- Shire of Denmark Guidelines for Subdivision and Development of Land
- Paths & Trails Network Plan
- Handbook of Environmental Practice for Road Construction and Maintenance Works (Roadside Conservation Committee, Main Roads WA, WALGA)
- Code of Practice for Roadside Conservation and Road Maintenance (Shire of Denmark)
- Declared Flora Roads Management Plan (Shire of Denmark)
- Waste Management Strategy
- 'Do-Not-Spray-My Verge' Register

Community & Regulatory Services

- Bush Fire Prevention Plan
- Disability Services, Access & Inclusion Plan 2007 – 2011
- Local Emergency Management Plans

NB: this list of Associated Documents has been provided as a reference guide only and should not be considered to be exhaustive.

Responsibility for Implementation

All employees of the Shire are responsible for implementation of this Policy.

HANDBOOK OF ENVIRONMENTAL PRACTICE

FOR

ROAD CONSTRUCTION AND MAINTENANCE WORKS



Roadside
Conservation
Committee



WALGA

Attachment 8.1.1 b)

HANDBOOK OF ENVIRONMENTAL PRACTICE

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Photo MRWA



Roadside
Conservation
Committee



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DISCLAIMER

This publication is a handbook to enable good management practice and does not constitute a legal mechanism in support of legislation.

Preface

Western Australia has a unique and varied environment, valued by its people and by visitors from interstate and overseas. Increased protection of our environmental asset is necessary to meet the challenges presented by increasing population, industry and public expectation.

Transport is one of the many pressures on the environment, and the State-wide task of managing road infrastructure has its particular environmental challenges. Road construction and maintenance involves environmental considerations that range from the socially oriented aspects such as preserving heritage sites and maintaining amenity for residents living alongside roads, to biodiversity aspects such as protecting conservation areas and preserving valuable roadside vegetation.

In a joint initiative, representatives from the Roadside Conservation Committee, Main Roads Western Australia and the Western Australian Local Government Association have prepared these Environmental Guidelines which provides guidance on the key issues and actions necessary to protect the environment during road construction and maintenance activities.

We endorse these guidelines and recommend it be adopted and implemented by road managers for the benefit of the environment and the community.



Mr Menno Henneveld
Managing Director of
Main Roads



Ms Ricky Burges
Chief Executive Officer
Western Australian Local
Government Association



Dr Ken Atkins
Chairman
Roadside Conservation
Committee



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Introduction

Roads and the Environment

Roads are a key part of Western Australia's integrated transport system, ranging from freeways and interstate highways to local streets and remote unsealed roads. Provision of this road infrastructure and its upkeep have the potential to have an impact on the environment and must be managed accordingly. Whether infrastructure activity involves a new road through uncleared land or upgrading or maintenance of an existing road, great care is needed to avoid and minimise various environmental impacts.

In this handbook, "environment" is a broad term encompassing natural elements of vegetation, fauna, wetlands and rivers, as well as our human environment or amenity and our heritage. Successful protection of this varied environment requires commitment and action by road management organisations and those acting on their behalf.



*The roadside environment is synonymous with wildflowers.
Photos by D Lamont (top right) and P Hussey (above)*

Purpose of the Handbook

This handbook has been prepared with the intention that it be an important and integral part of a management system that will protect the environment during road construction and maintenance activities. Related parts of such a system include environmental policy and procedures. A series of practical guidelines on roadside management is available from the Roadside Conservation Committee.

The purpose of this handbook is to:

- Ensure that road construction and maintenance site activities are carried out in a manner that minimises environmental impact.
- Promote the awareness and use of best practice in environmental management of roads.

It is also recognized that road managers have a moral and legislative responsibility to work towards creating safe roads and roadsides as the essential element of a safe road network for the people of Western Australia. Where matters of road safety are a concern, road managers can seek further advice from AusRoads, Main Roads WA, Office of Road Safety and the WA Local Government Association, on strategies for improving the safety of roadsides.

Guiding Principles

This handbook is based on the following principles:

- Best practice environmental management should be incorporated into the planning and undertaking of road management activities.
- The maintenance of a safe road system should be balanced with good environmental outcomes.
- People involved in road management should be trained to protect the environment.
- Communication and consultation should be undertaken with stakeholders.
- Road management actions should comply with relevant laws that relate to the environment.

Applying the Handbook

This handbook has been prepared for use by road management organisations, who are encouraged to adopt it for application in roadworks and road reserve management undertaken directly by their staff or their contractors. This handbook may also be promoted as being appropriate for use by other organisations undertaking activities within road reserves. It should be applied to construction and maintenance activity.

Road Construction

Development of a proposal for either a new road or a major road-upgrade must include consideration of potential environmental impact. A preliminary screening of the proposal will indicate whether there is likely to be a low impact that can be managed by applying the standard practices contained in this handbook, or whether more detailed environmental impact assessment and management is required.

Most proposals requiring an environmental impact assessment also involve liaising with stakeholders, preparing a plan to manage impacts and obtaining approvals where required, and implementing the plan during construction.

Road Maintenance

Maintenance of roads involves activities that could cause environmental damage unless suitable precautionary actions are taken. This handbook indicates the key actions necessary to adequately protect the environment, and provides a basis for preparation of subsidiary documents such as detailed maintenance procedures.



*Maintenance of roads involves activities that could cause environmental damage.
(Photo by D Lamont)*

Structure of the Handbook

This handbook addresses key issues in the environmental management of roadwork activities. Issues listed in this handbook are presented in three parts:

- Issue: explains the issue and why it is important
- Aim: the intended outcome for each issue
- Practice: list of best practice actions necessary to achieve the aim

Additional documentation providing further information on environmental management of roadside vegetation can be accessed from the RCC website at <http://www.dec.wa.gov.au/content/view/5275/2199/>

Legal Obligations

There are numerous State and Commonwealth laws concerning environmental protection, and government agencies administering these laws often issue associated policies and guidelines. While this handbook does not endeavour to list these laws and associated documents, it is assumed that organisations involved with road construction and maintenance activities or other works within the road reserve will comply with them.

For each environmental topic contained in this handbook there is reference to some relevant agencies and other organisations that can provide advice on legal obligations, policies and guidelines.

Stakeholder Communication

The issue

Road management authorities have a public responsibility to inform and consult with all parties that might be affected by their proposals and actions. Adequate consideration of stakeholder views and expectations will result in a good reputation and stakeholder satisfaction. Stakeholders can include government agencies, environmental specialist groups, business and community groups, the general public, and road and roadside users.

The aim

Inform stakeholders about activities that may affect them, consult with appropriate parties and respond to complaints and requests for information.

The practice

- Identify organisations and communities that have a stake in a proposed road construction project or maintenance activities.
- Inform stakeholders about proposed activities and consult on issues affecting them.
- Establish a protocol for managing enquiries and complaints.

Organisations for advice:

Roadside Conservation
Committee

WA Local Government
Association

Department of Local
Government and
Regional Development

Main Roads WA



*Identify organisations and communities that have a stake in a proposed road construction project or maintenance activities.
(Photo by L Trinder)*

Training

The issue

People involved in road management need to be aware of relevant environmental considerations, and be trained in how to undertake works in an environmentally sensitive manner. Failure to provide adequate training can result in environmental damage and breach of the law.



Ensure that all people involved in road management have appropriate environmental training. (Photo MRWA)

The aim

Ensure that all people involved in road management have appropriate environmental training.

The practice

- Identify the training needs of people involved in the various stages of road planning, design, construction and maintenance.
- Undertake suitable environmental training.
- Undertake project specific environmental induction for site workers, identifying particular aspects of a construction site.
- Train maintenance people in techniques that protect the environment.
- Monitor ongoing training needs.

Organisations for advice:

Roadside Conservation Committee

WA Local Government Association

Main Roads WA

Conservation of Native Vegetation and Fauna

The issue

Roadside vegetation is often a significant part of the remaining native vegetation in a locality, and so provides valuable habitat and linkage between vegetation blocks. There are also numerous occurrences of rare plants within road reserves, and many roadsides throughout the State are known for their wildflower displays and play an important role in tourism. Good roadside management will preserve and enhance these values.



Roadsides provide important habitats for fauna. Photos by L Trinder (top right) and P Hussey (above).

The aim

- Minimise clearing and degradation of native vegetation.
- Protect rare plants and plant communities, native fauna and their habitats.
- Maintain aesthetic values of roadsides.

The practice

- Mark the limit of any proposed clearing, and any trees within this area that are to be retained.
- Identify any special locations to be protected, eg rare flora, threatened communities.
- Consider environmental impact when selecting areas suitable for stockpiling materials, eg already cleared, degraded, away from drainage lines.
- Leave logs and dead trees for habitat, provided safety requirements are met.
- Remove and relocate fauna that have been identified for rescue before clearing, especially in urban bushland areas.
- Select sites for obtaining road building materials outside the road reserve, and on already cleared land where possible.
- Revegetate areas that are cleared as part of road construction and maintenance activity, including sites used for obtaining road building materials.
- Endeavour to revegetate bare or badly degraded areas of native vegetation along existing roads, and sites used for obtaining road building materials.
- Minimise other disturbance to the roadside to reduce vegetation loss.

Organisations for advice:

Roadside Conservation Committee

Department of Environment and Conservation, Regional Office

Main Roads WA

Special Environmental Areas

The issue

Roadsides contain environmental and heritage sites that are either protected by law or in their own right are worthy of special protection measures. These sites are termed Special Environmental Areas (SEA's) and mainly comprise locations of threatened flora, and Aboriginal or other heritage sites. SEA's are often delineated by markers to assist in their protection.

The aim

Preserve the values of Special Environmental Areas.

The practice

- Maintain a system for managing SEA's.
- Delineate SEA's by site markers, unless confidentiality is required.
- Ensure workers know the location of SEA's and the need to protect them.
- Do not undertake any activity within an SEA, unless under the direction and supervision of an environmental specialist.

Organisations for advice:

Roadside Conservation
Committee

Department of
Environment and
Conservation

Main Roads WA



Grevillea dryandroides a declared rare species found on roadsides. (Photo by L Trinder)

Dieback

The issue

Dieback is a disease that results in the slow death of vegetation and is caused by the introduced *Phytophthora* fungus. This fungus is spread by the movement of spores in water, and by human activity that moves infected soil. *Phytophthora* is restricted to the south-western part of the State where approximately a third of native flora is susceptible to attack. *Phytophthora* cannot be eradicated once an area is infested, therefore it is imperative that road management activities avoid introducing and spreading it.

The aim

Control the spread of *Phytophthora*.

The practice

For the south-western part of the State:

- Identify dieback-free and dieback-infested roadsides and sources of road building materials.



A sign-posted dieback site in roadside. (Photo DEC)

- Plan site activity for drier months where possible.
- Apply hygiene methods where there is a risk of spreading dieback.
- Use dieback-free road building materials where required.
- Train relevant people in dieback management.

Organisations for advice:

Roadside Conservation Committee

Department of Environment and Conservation, Regional Office

Main Roads WA

Dieback Working Group

Right: Mud on wheels of plant and equipment can spread dieback. (Photo DEC)

Below: Jarrah Forest destroyed by dieback. (Photo DEC)



Vegetation Control

Vegetation control is addressed in this handbook in three parts:

- Removal, pruning, slashing and mowing of vegetation
- Weeds
- Herbicides



Control needs to be undertaken in a way that avoids unnecessary damage to vegetation. (Photo by B Moyle)

Removal, pruning, slashing, and mowing of vegetation

The issue

Trees and other vegetation on roadsides can affect road safety by restricting vision of road users, and encroach on the road asset in such a way as to contribute to its degradation. Vegetation type and growth vary across the State, so control techniques and timing of their application vary accordingly. Control needs to be undertaken in a way that avoids unnecessary damage to vegetation.

The aim

Maintain vegetation clearances and sightlines in a way that preserves or enhances aesthetic and conservation values of roadsides.

The practice

- Ensure workers understand the aim of the particular type of vegetation control and operate only within the nominated areas.
- Prune and/or remove vegetation sufficient to meet safety requirements, avoiding damage to other vegetation.
- Avoid Special Environmental Areas.
- Identify any revegetation areas or individual plants that need to be avoided.
- Prune for a natural finish, eg prune entire branch, cut tree stumps close to the ground.
- Chip and mulch cleared material or replace whole where appropriate.
- Spread mulched material on bare areas for weed/erosion control, not on existing good quality native vegetation.
- Dispose of waste vegetative material to an appropriate site, and do not burn.

Organisations for advice:

Roadside Conservation Committee

Department of Environment and Conservation, Regional Office

Main Roads WA

Weeds

The issue

Weeds impede agricultural production, compete with and displace native vegetation, become a visual blight on the landscape and increase fire hazard. Weeds are classed as either “declared” or “pest plants” by regulations and require specific actions to be taken, or “environmental” that involve voluntary actions by individuals and organisations. Transport corridors such as roads are a means of spreading weeds, either by road construction and maintenance activity or by actions of road users.

The aim

Control the spread of weeds.

The practice

- Identify declared and environmental weeds at construction sites and along the road network, and initiate weed management programs.
- Train relevant people in identification of priority weeds for the particular area.
- Apply effective weed control methods, considering site characteristics, types of weeds, weed life cycle and climatic season.
- Minimise disturbance of vegetation and soil to limit the opportunity for weed invasion.
- Manage topsoil movement to avoid spread of weeds.
- Clean equipment and vehicles before moving on/off a work site.
- Dispose of weeds at an approved disposal site.

Organisations for advice:

Roadside Conservation Committee

Department of Environment and Conservation, Regional Office

Department of Agriculture and Food WA

Main Roads WA



Weeds can pose a serious threat to habitat. (Photo MRWA)

Herbicide use

The issue

Herbicides can be an effective means of controlling declared and environmental weeds. Application of herbicide can involve risk to non-target species of plants and sensitive fauna, crops and drinking water, so correct use is essential.

The aim

Minimise the use of herbicides and reduce associated risks through training and appropriate application techniques.

The practice

- Consider and implement alternatives to herbicides where appropriate.
- Use only approved products, and at the recommended application rates.
- Train herbicide operators, and apply safety and health precautions.
- Design and implement herbicide programs to be effective and minimise adverse effects.
- Maintain records of applications.
- Avoid herbicide runoff into watercourses, wetlands or drinking water catchment areas.
- Liaise with road neighbours on appropriate use of herbicides.

Organisations for advice:

Roadside Conservation
Committee

Main Roads WA

Department of Agriculture
and Food WA

Department of Health WA

Department of Environment
and Conservation



Correct application of herbicides is essential. (Photo MRWA)

Stockpiling of Road Building Materials

The issue

Road building materials are often stockpiled in the vicinity of the road where they will be used. Poor siting of stockpiles causes damage to native vegetation, and if not managed correctly can be eroded and cause siltation of watercourses, or be a source of weed infestation.



*Where possible locate stockpiles on already cleared land.
(Photo by L Trinder)*

The aim

Locate and manage stockpiles to minimise their impact on the environment.

The practice

- Locate stockpiles, where possible, on land that has already been cleared of vegetation or is degraded, and away from drainage lines.
- Mark the extent of the proposed stockpile, so as to avoid damage to native vegetation.
- Establish sediment controls around stockpiles where there is risk of erosion to watercourses or wetlands.
- Treat stockpiles that have weed infestation.
- Implement measures to minimise dust generation from stockpiles where necessary.

Organisations for advice:

Roadside Conservation Committee

Main Roads WA

Water Quality, Erosion and Sediment Control

The issue

Runoff from road construction and maintenance sites can contain pollutants and affect the quality of receiving waters such as wetlands, watercourses, ground water, and drinking water supply. Pollutants can include hydrocarbons such as oils, zinc and other metals especially in urban areas, and sediment. Large volumes of runoff from cleared areas can cause significant erosion and general land degradation.

The aim

Maintain water quality in wetlands, waterways and drinking water catchment areas that adjoin roads.

Control erosion from cleared areas to avoid erosion and siltation of watercourses.

The practice

- Limit disturbance and clearing of sites.
- Implement actions where necessary to control erosion and runoff from construction sites.
- Use and store any hazardous substances appropriately.
- Dispose of wastes appropriately.
- Control discharge flows and sedimentation caused by dewatering operations.
- Minimise surplus wastewater from activities such as brick and pavement cutting, and avoid runoff to environmentally sensitive areas.
- Locate wash down of vehicles and other equipment away from environmentally sensitive areas.
- Clean out sediment from detention basins as appropriate and dispose at approved disposal site.

Organisations for advice:

Department of Environment and Conservation
Main Roads WA



Control runoff from cleared areas to avoid erosion. (Photo by K Vaux)

Dust

The issue

Road construction and maintenance activities often generate some amount of dust, especially in very dry conditions. Dust is a nuisance in the environment and can decrease amenity values. It can also be a health hazard causing respiratory problems and can pose a risk to traffic safety by reducing visibility.



*Road construction and maintenance activities often generate some amount of dust.
(Photo MRWA)*

The aim

Control dust emissions for the benefit of nearby residents and to limit the effect on native vegetation.

The practice

- Clear vegetation only when necessary.
- Control dust by spraying soil with water as required.
- Treat areas due for soil stabilisation as soon as practical.
- Use dust suppressants as appropriate, that are suitable to the environment and in accordance with the manufacturer's recommendations.
- Inform the adjoining community about planned activities that might cause significant dust.

Organisations for advice:

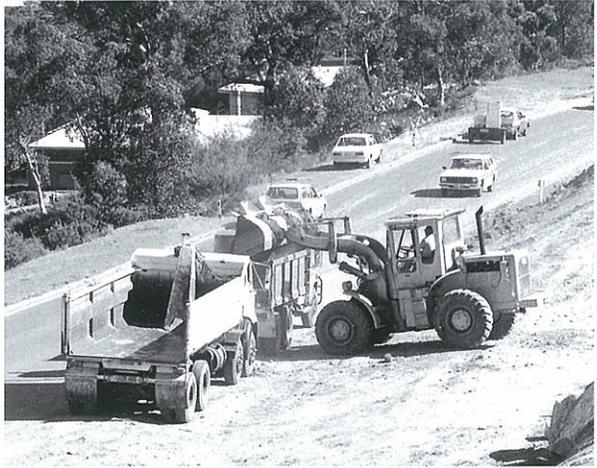
Department of Environment and Conservation

Main Roads WA

Noise and Vibration

The issue

Noise and vibration from road construction and maintenance activity can cause a nuisance to people nearby. The degree of nuisance can depend on the time of occurrence, duration and intensities. In some instances vibration can cause damage to buildings. The common source of noise and vibration is equipment, and on occasion, blasting.



Noise and vibration from road construction and maintenance activity can be a nuisance and cause damage to buildings. (Photo MRWA)

The aim

Minimise noise and vibration to prevent damage to buildings and maintain amenity in sensitive adjoining areas.

The practice

- Notify the public that proposed works will create noise and/or vibrations especially if these works will occur outside normal working hours.
- Obtain any necessary approval to undertake work outside normal working hours.
- Implement special noise control where necessary, eg temporary barriers or enclosures.
- Plan site activity to minimise noise impacts.
- Use equipment with low noise levels, and maintain noise control devices on equipment.
- Take precautionary measures to avoid vibration damage to buildings near work sites.

Organisations for advice:

Department of Environment and Conservation

Heritage Sites

The issue

Heritage sites include Aboriginal and other cultural sites as well as areas of natural significance, and can comprise artefacts, trees, geological formations, buildings and other structures, and locations of historical significance. Road construction and maintenance activities can pose a risk of damaging these sites so activities must be planned and managed for heritage protection.

The aim

Protect heritage sites.

The practice

- Identify any heritage sites prior to undertaking construction and/or maintenance activities.
- Ensure workers are aware of sites and the need to protect them.
- Mark sites for protection where appropriate.
- Modify construction and maintenance actions to ensure protection of sites.



Aboriginal heritage site. (Photo by D Lamont)

Organisations for advice:

Heritage Council of WA

National Trust of Australia (WA)

Department of Indigenous Affairs

Waste Management



Waste materials require proper disposal to avoid pollution, hazards, and visual blight. (Photo MRWA)

The issue

Construction and maintenance activities generally produce various types of waste, including waste from work camps. Waste materials require proper disposal to avoid pollution, hazards, and visual blight.

The aim

Minimise environmental degradation by properly disposing of waste.

The practice

- Identify waste products from road activities and plan correct disposal.
- Identify suitable areas for disposal of spoil from roadworks.
- Dispose of waste that could cause environmental degradation in areas determined as suitable.
- Ensure workers are aware of proper disposal.

Organisations for advice:

Department of Environment and Conservation
WA Local Government Association
Main Roads WA

Hazardous Materials

The issue

Materials that can pose an environmental risk are often used and stored on construction and maintenance sites. Materials include bitumen products, fuels and oils, pesticides, wetting agents and dust suppressants. At particular risk from these materials are water habitats and drinking water catchment areas. Proper management and use of hazardous materials is essential for protection of the environment and for the safety of workers and the public.

The aim

Ensure awareness of risks of hazardous materials, and the correct storage, transport, use and disposal to adequately protect the environment.

The practice

- Train workers to ensure that hazardous materials are stored, transported and used in a way that protects the environment.
- Store hazardous materials in an area that will adequately contain spills, and avoid runoff washing materials into watercourses.
- Prepare for emergencies involving hazardous materials.
- Report any spills that occur.
- Clean up spills and dispose of materials at approved disposal sites.
- Take special precautions to avoid spills when working over or next to watercourses or wetlands.
- On discovery of pre-existing ground contamination at a worksite, cease activity at that location and obtain specialist advice on a course of action.



Water habitats are at particular risk from materials such as fuel, oil and bitumen products. (Photo DAFWA)

Organisations for advice:

Department of Mines and Petroleum

Department of Environment and Conservation

Department of Health WA



Roadside
Conservation
Committee





Final

CODE OF PRACTICE FOR ROADSIDE CONSERVATION AND ROAD MAINTENANCE

prepared by

SHIRE OF DENMARK

with assistance from the

ROADSIDE CONSERVATION COMMITTEE

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CODE OF PRACTICE FOR ROADSIDE CONSERVATION AND ROAD MAINTENANCE

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CODE OF PRACTICE FOR ROADSIDE CONSERVATION AND ROAD MAINTENANCE

The Code of Practice for Roadside Conservation and Road Maintenance (RCoP) has been prepared for Shire managed roads only within the Shire of Denmark municipality.

Roadside Conservation Code of Practice (RCoP) Aim

The aim of the Shire of Denmark Code of Practice for Roadside Conservation and Road Maintenance (RCoP) is to balance road design, safety and construction with identified roadside conservation values.

Roadside Conservation Code of Practice (RCoP) Objectives

The broad objectives identified to assist in the preparation of the Denmark RCoP are to:

- ensure compliance with all legislative requirements in managing road reserves;
- ensure road safety through the safe function of the road;
- protect the road formation;
- prevent further land degradation on roadsides and improve water quality;
- minimise the risk and impact from fire;
- protect service assets located on roadsides;
- protect, maintain, and enhance native vegetation communities on roadsides;
- protect rare, threatened and significant species of flora and fauna on roadsides;
- maintain and enhance habitat and corridor requirements for native fauna on roadsides;
- prevent the further spread of weeds and soil borne fungal pathogens on roadsides;
- protect the cultural and heritage values of roadsides; and
- maintain and enhance the visual amenity and landscape quality of the road and roadside.

Roadside Code of Practice and Guidelines for Implementation

1. Roadside Maintenance - RCoP

- (1) That the Shire ensures that works being undertaken on roadsides on the following activities:
 - (a) road safety;
 - (b) fire prevention; and
 - (c) efficient and effective installation and maintenance of essential servicesare conducted giving due regard for reasonable protection and enhancement of native vegetation.
- (2) That local native vegetation beyond the road formation is not disturbed during road maintenance works except where necessary to carry out required works.
- (3) That the Shire ensures that all staff involved in road construction works and roadside management practices are instructed in the correct techniques for minimising disturbance to native roadside vegetation.
- (4) That conservation values be determined for all roadsides within the Shire in accordance with advice from the Roadside Conservation Committee.

1. Roadside Maintenance – Guidelines for Implementation

- (a) Any persons undertaking works within the road reserve will be advised that native vegetation beyond the road formation is not to be disturbed except where a permit has been issued or an exemption negates this requirement. Additional conditions may be imposed to prevent damage of native vegetation. *Refer to Environmental Protection (Clearing of Native Vegetation) Regulations 2004.*
- (b) Due consideration is to be given to the type of equipment and machinery used.
- (c) On roadsides with native vegetation, wherever possible, machinery is to operate from the road formation while carrying out works (NB: the road formation is defined as the area from the top of the batter on either side of the road - *see Appendix 1B*).
- (d) Table drains are to be maintained in a condition that will prevent water flooding the road. When carrying out maintenance of table drains, spoil is to be directed towards the road pavement for removal.
- (e) Materials used for road operations on roads with native vegetation are to be temporarily stock-piled on the road formation or on an existing cleared area, not on native vegetation.
- (f) Relevant stakeholders (Telstra, Western Power, local Bush Fire Brigades (BFB) and Main Roads WA) and other relevant agencies will be made aware of Denmark's RCoP and special environmental areas and significant areas for flora and fauna. *Refer to Special Environmental Areas in Transport Corridors.*
- (g) Road construction supervisors and relevant staff will be encouraged to attend seminars or courses related to roadside management conducted by TAFE, the RCC or other organisations as approved by the relevant Director. *Refer to RCCs Handbook of Environmental Practice for Road Construction and Maintenance Works.*
- (h) In determining conservation values of roadsides, the Shire will be guided by the RCC classification of roadsides as category 1 - high conservation value, category 2 – medium-high conservation, category 3 – medium-low conservation value and category 4 – low conservation value. *Refer to Assessing Roadsides.*

2. Clearing of Native Vegetation - RCoP

- (1) A permit is required (unless undertaking exempt activities) to be obtained where clearing of native vegetation is to be undertaken:
 - within the existing formation for vegetation older than 10 years
 - beyond the back slope (batter) in the roadside (upgrade)A clearing permit is not required in the existing road formation for maintenance works where native vegetation has been previously cleared within the last ten year period.

Refer to Schedule 2 of Environmental Protection (Clearing of Native Vegetation) Regulations 2004.
- (2) Where a permit has been granted to clear any native vegetation (through direct removal or other means) the Shire is to ensure that no native vegetation other than that specified is destroyed or disturbed and that clearing is undertaken in accordance with the permit conditions. *NB: Removal of dead trees and fallen timber from roadsides may require a permit from DEC.*
- 3) A permit to take may be required where road maintenance activities extend into Special Environmental Areas (SEA's), Environmentally Sensitive Area's (ESA's), and/or Declared Rare Flora (DRF)). A permit to take can be acquired via an application to take process through the Department of Environment and Conservation (Frankland District).

2. Clearing of Native Vegetation – Guidelines for Implementation

- (a) Shire staff to familiarise themselves with the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* and Clause 5.11 of the *Shire of Denmark Local Law Activities on Thoroughfares and Trading in Thoroughfares and Public Places 2001*, to ensure permits are obtained where necessary.
- (b) Any request to remove dead trees or fallen timber from a strategic biodiversity corridor or roadside with high conservation value will be inspected prior to granting a permit to assess the accessibility of the timber and the availability of other ground level features to provide habitat for small native animals. Permits for these activities may be required from DEC.
- (c) The Shire is to maintain a database (shape file) of ESA's, TEC's, and declared rare flora, to be referred to where road construction and upgrade activities are to occur on all road reserves within the Shire. This information, in an appropriate format, is to be provided to the Shire's Operational Staff for use.

3. Fire Management - RCoP

- (1) That the Shire encourage its staff, the Bush Fire Advisory Committee, relevant fire management authorities (Fire and Emergency Services Authority) and private property owners to consider:
- (a) maintenance of clear sight distances;
 - (b) significance of a fire hazard;
 - (c) vegetation type;
 - (d) conservation value of the roadside;
 - (e) the *Shire of Denmark Local Law Activities on Thoroughfares and Trading in Thoroughfares and Public Places 2001 Part 5 – Roadside Conservation Division 6 and 7– Fire Management and Firebreaks*
 - (f) the *Biodiversity Conservation and Fire in Road and Rail Reserves: Management Guidelines (2011)*
- when providing recommendations and implementing actions regarding fire prevention and fire management works.

3. Fire Management– Guidelines for Implementation

- (a) i)The Shire, in conjunction with the RCC and DEC will provide a plan showing all strategic biodiversity corridors and make it available for staff, the Bush Fire Advisory Committee, relevant advisory bodies (Fire Emergency Services Authority) and community.
- ii) Where strategic biodiversity corridors have been identified every endeavour shall be made to avoid and protect these areas during fire prevention works.
- (b) The local fire services will be advised of recommended management actions where there is the presence of rare, vulnerable and/or significant flora and fauna habitats located along strategic firebreaks, to ensure biodiversity values are not adversely impacted upon.
- (c) The local fire services will be encouraged to utilise other alternatives where possible for strategic fire breaks, to avoid populations of significant flora and fauna habitats and/or strategic biodiversity corridors.
- (d) Where a roadside has significant vegetation on one side only, fire prevention works will be carried out on the side without important vegetation where this is appropriate.
- (e) The location and extent of all fire prevention works will be reviewed annually and take into account rare, significant and vulnerable flora and fauna areas.
- (f) The use of prescribed burning, fire breaks and manual fuel removal techniques may be used as appropriate methods of fire prevention works on thoroughfares with consent of the Shire.
- (g) All personnel involved in fire prevention and fire management activities to become familiar with and adhere to the *Shire of Denmark Local Law Activities on Thoroughfares and Trading in Thoroughfares and Public Places 2001 Part 5 – Roadside Conservation Division 6 and 7– Fire Management and RCCs Firebreaks* and the *Biodiversity Conservation and Fire in Road and Rail Reserves: Management Guidelines (2011)*.

4. Special Environmental Areas - RCoP

- (1) All rare or priority and significant flora and fauna areas, Environmentally Sensitive Areas (ESA's), threatened ecological communities (TEC's), and declared Flora Roads on roadsides be recorded and clearly identified. Such sites are to be protected prior to any works being carried out. Refer to *Shire of Denmark Local Law Activities on Thoroughfares and Trading in Thoroughfares and Public Places 2001 – Part 5 Division 2 and 3* and *Flora Road Management Plan 2012*.
- (2) That the Shire consult with the Roadside Conservation Committee (RCC) and/or the Department of Environment and Conservation (DEC) regarding the appropriate management of roadside areas where a rare, priority or significant flora species have been identified. Refer to *RCCs Special Environmental Areas in Transport Corridors*.
- (3) That special environmental areas within roadsides be identified and marked in accordance with Clause 5.8 of *Shire of Denmark Local Law Activities on Thoroughfares and Trading in Thoroughfares and Public Places 2001*, and consistent with the procedure outlined by DEC for selection, signing and management where appropriate.

4. Special Environmental Areas – Guidelines for Implementation

- (a) A register to be maintained and held in Shire's GIS database showing:
 - threatened flora
 - fauna sightings and associated habitat
 - Environmentally Sensitive Areas (ESA's)
 - Threatened Ecological Communities (TEC's)
 - Declared Flora Roadsand this register will be referred to prior to approval being given to any works on roadsides. This information, in an appropriate format, is to be provided to the Shire's Operational Staff for use.
- (b) Ensure the Environmental Impact Assessment Checklist is completed prior to commencement of road maintenance and/or construction activities to ensure compliance with existing legislative requirements and continued protection of special environmental areas.

5. Biodiversity Corridors - RCoP

- (1) Strategic biodiversity corridors should be identified and protected where possible, for faunal and floral movement and habitat.
- (2) The Shire will support enhancement of roadsides for retention of biodiversity corridors whilst giving consideration to road safety where revegetation is within the road reserve.

5. Biodiversity Corridors – Guidelines for Implementation

- (a) Strategic biodiversity corridors along roadsides can be identified through use of data obtained from aerial photographs, RCC roadside survey mapping data, and Greening Plan spatial data. This information, in an appropriate format, is to be provided to the Shire's Operational Staff for use.
- (b) The DEC Frankland District Nature Conservation Co-ordinator can be consulted prior to any roadside works commencing along strategic biodiversity corridors.
- (c) Revegetation and rehabilitation can be undertaken utilising resources of the Shire revegetation nursery, using local native plant species (local provenance where possible).

6. Invasive Species - RCoP

- (1) Road maintenance and construction is to be conducted in a sensitive manner ensuring there is no further spread of invasive weed species and pathogens from operational road works activities. *For pathogens refer to: Town Planning Scheme Policy No. 1 for Dieback Disease Management.*
- (2) A weed eradication and control program is to be implemented to control invasive weeds on roadsides in accordance with the *Operational Roadside Reserve Plan* as outlined within the *Shire of Denmark Weed Strategy and Action Plan 2005-2010*, with due consideration given to the 'Do-Not-Spray-My Verge' Register.
- (3) The Shire to develop and implement a program to control environmental weeds (with an emphasis on those weed species listed in the *Shire of Denmark Local Law Relating to Pest Plants 1997*. The weed eradication program to focus on roadsides which act as a biodiversity corridor, and on roadsides with a high conservation value, as informed by the RCC roadside vegetation survey mapping, Greening Plan and verification through other source materials as required.
- (4) Following weed eradication and control works on road reserves, the area is to be revegetated with local native plant species to ensure the roadside is stabilised and will discourage re-infestation of weed species.
- (5) Where pest animals are harbouring in roadsides, the Department of Agriculture and Food WA (DAFWA) or DEC should be contacted to give appropriate advice on control measures.

6. Invasive Species – Guidelines for Implementation

- (a) Best practice management shall be employed in all road maintenance and construction activities. For high conservation areas those practices include but are not limited to:
 - hygiene management protocols adhered to (machinery and plant equipment clean on entry and exit to works site)
 - minimal disturbance of vegetation and soil to limit the opportunity for weed invasion and spread of pathogens (e.g. dieback)
 - all material utilised for road-works activities to be treated (dieback-free)
 - appropriate disposal of infected material (weed species debris)
 - training of relevant staff in dieback and weed identification and management*Refer to Town Planning Scheme Policy No. 1 for Dieback Disease Management and RCC Environmental Code of Practice for Road Construction and Maintenance Works.*
- (b) A GIS database of weed species occurrence on roadsides to be developed and maintained to assist with development and implementation of weed eradication and control program on roadsides. This information, in an appropriate format, is to be provided to the Shire's Operational Staff for use.
- (c) Where pest plants and animals are required to be eradicated from roadsides (includes those of high conservation value and biodiversity corridors) weed eradication and control work is to be carried out in a manner, which will cause minimal damage to native vegetation.
- (d) Control of pest plants and animals on roadsides should have regard to the pest plant and pest animal strategies developed by DAFWA and DEC.

7. Rehabilitation and Revegetation - RCoP

- (1) The Shire to support enhancement of roadside vegetation through rehabilitation and revegetation activities whilst giving consideration to road safety where revegetation is within the road reserve.
- (2) That prior to any approval being given for revegetation or natural regeneration projects on roadsides, consultation is to occur across directorates so that the Shire can ensure that:
 - (a) the project is compatible with various roadside codes of practice and guidelines;
 - (b) revegetation will not interfere with any current or future service provision;
 - (c) all services can be clearly marked and identified on the ground;
 - (d) the type of weed control is appropriate to the site;
 - (e) native vegetation is being used;
 - (f) the group initiating the planting or regeneration is able to maintain the plants until they are large enough to look after themselves;
 - (g) long term maintenance of the site has been adequately considered.
- (3) That the Shire consults with all relevant agencies (including but not limited to Bush Fire Brigade Advisory Committee, Western Power, Telstra and DEC) prior to approving revegetation and/or rehabilitation projects on roadsides in accordance with Clause 5.9 of *Shire of Denmark Local Law Activities on Thoroughfares and Trading in Thoroughfares and Public Places 2001*, where it states that a permit is required to plant species within a thoroughfare.
- (4) Any naturally regenerating native vegetation should be protected where practicable and managed in such a way to prevent interference with the structure of the road or other important roadside activities.
- (5) That the use of native fire retardant vegetation be encouraged in any revegetation projects adjacent to strategic fire breaks access tracks.

7. Rehabilitation and Revegetation – Guidelines for Implementation

- (a) Revegetation and rehabilitation can be undertaken utilising resources of the Shire revegetation nursery, using local native plant species (local provenance where possible).
- (b) Revegetation projects should, where practicable, be referred to all relevant agencies and stakeholders. If no response has been received within thirty days, it will be assumed that the agency has no objection to the project.
- (c) Native vegetation will not be permitted to regenerate if it is likely to grow into the maintenance zone or if it may obstruct visibility for traffic.
- (d) The list of native fire retardant vegetation be provided to those groups wishing to undertake approved revegetation projects along, or adjacent to, strategic fire break access tracks.

8. Community Education - RCoP

- (1) That the Shire raises awareness and highlights the importance of protecting and enhancing roadside vegetation consistent with the objectives of:
 - (i) road safety;
 - (ii) fire prevention;
 - (iii) efficient and effective maintenance of essential services;
 - (iv) wildlife habitat requirements;
 - (v) landcare objectives;
 - (vi) local tourism;
 - (vii) biodiversity values.
- (2) That the Shire encourage individual and community rehabilitation and revegetation projects with special emphasis on enhancing biodiversity corridors.

8. Community Education – Guidelines for Implementation

- (a) Actively promote roadside conservation environmental education activities and incorporate conservation goals into future planning and community information initiatives.
- (b) Revegetation projects involving seed collection from thoroughfares to be undertaken in accordance with Clause 5.20 of the *Shire of Denmark Local Law Activities on Thoroughfares and Trading in Thoroughfares and Public Places 2001*.

REVIEW OF DOCUMENT

Document is to be reviewed annually, or as required, jointly by the Planning & Sustainability Directorate and Infrastructure Services Directorate.

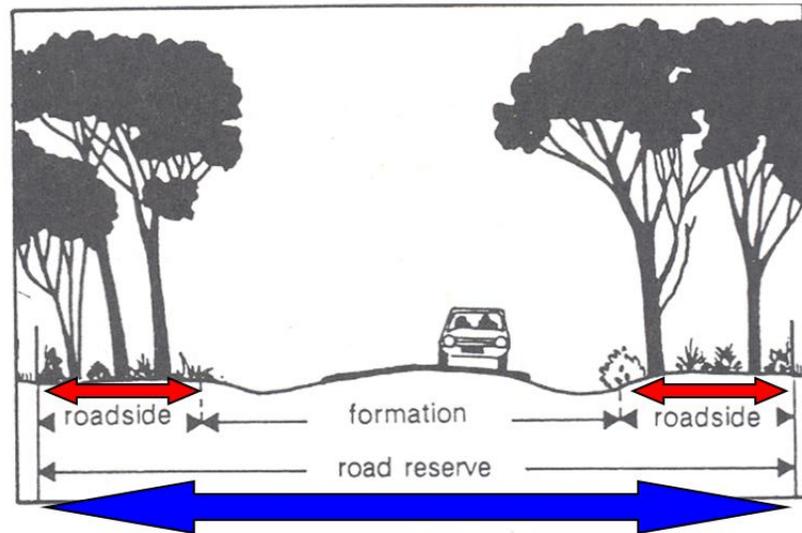
USEFUL REFERENCES

- Environmental Protection (Clearing of Native Vegetation) Regulations 2004
- Shire of Denmark Local Law Activities on Thoroughfares and Trading in Thoroughfares and Public Places 2001
- Shire of Denmark Local Law Relating to Pest Plants 1997
- Town Planning Scheme Policy No. 1 for Dieback Disease Management
- Operational Roadside Reserve Plan - Shire of Denmark Weed Strategy and Action Plan 2005-2010
- Declared Flora Roads Management Plan (Shire of Denmark)
- Shire of Denmark Environmental Impact Assessment Checklist
- Biodiversity Conservation and Fire in Road and Rail Reserves: Management Guidelines (Roadside Conservation Committee, 2011)
- Assessing Roadsides: A Guide For Rating Conservation Value (Roadside Conservation Committee, 2002)
- Special Environmental Areas in Transport Corridors (Roadside Conservation Committee, 2000)
- Denmark Greening Plan

Where is the Roadside?

The road reserve: ■

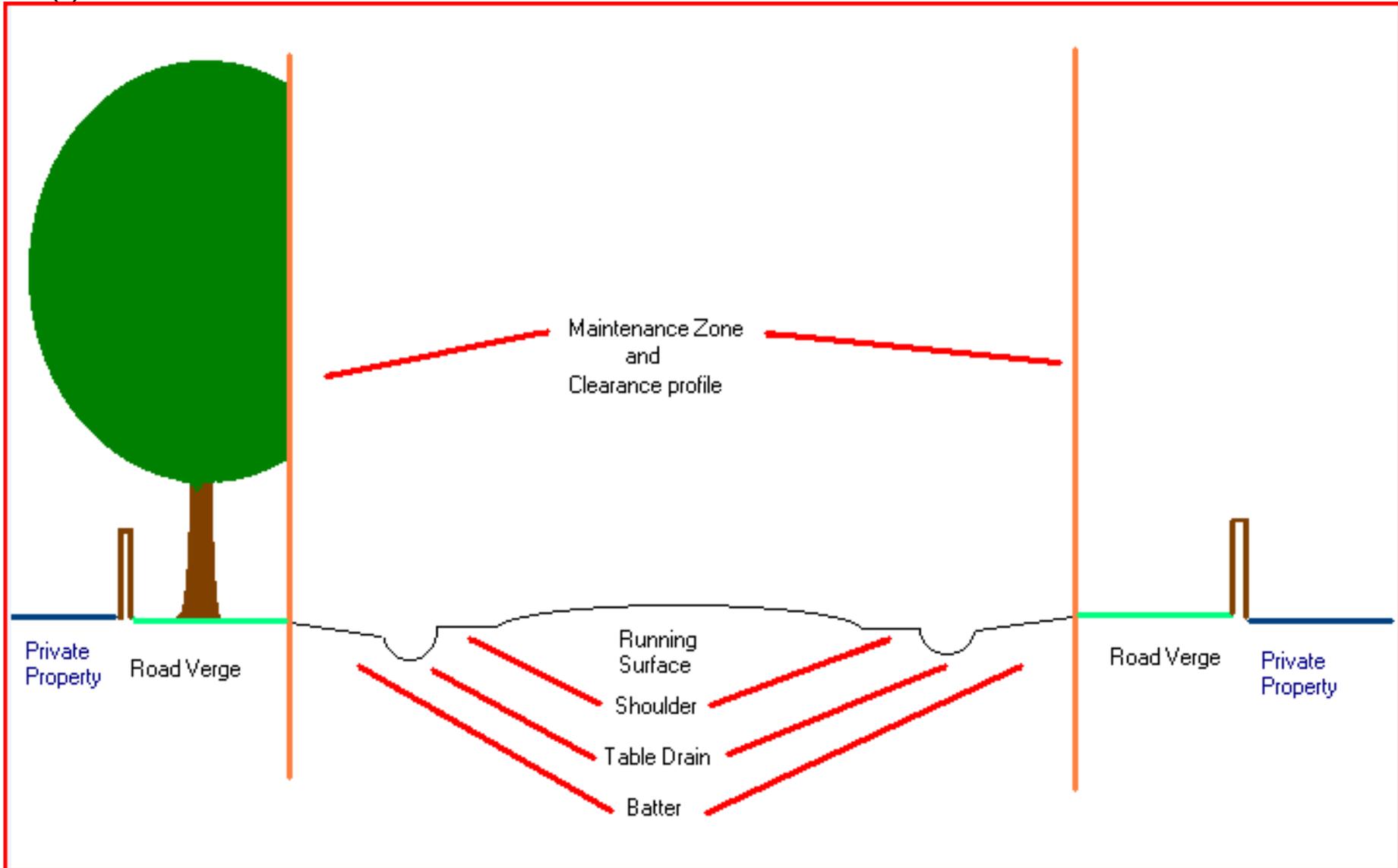
- road surface;
- shoulder;
- drain; and
- batter/back slope.

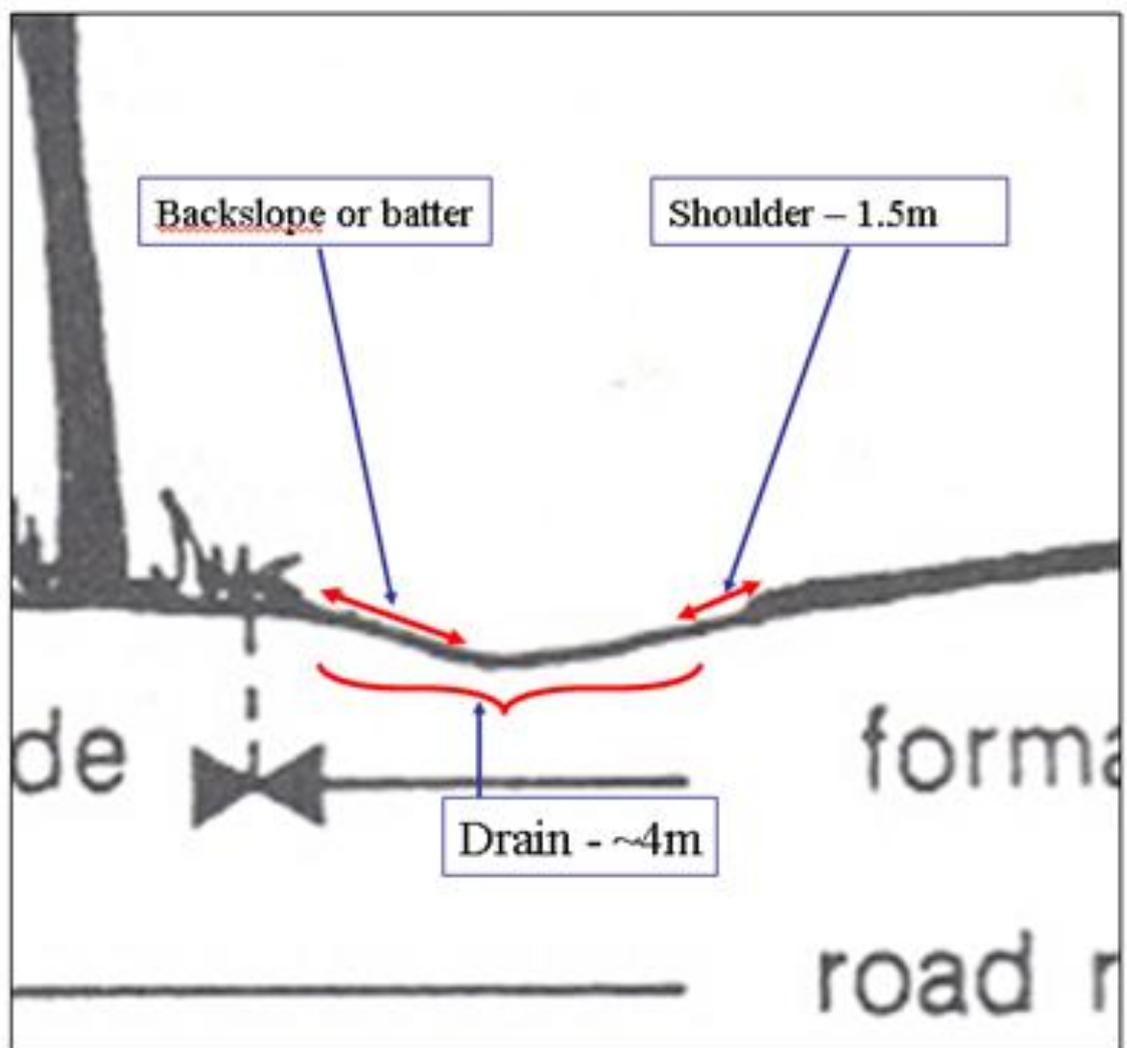
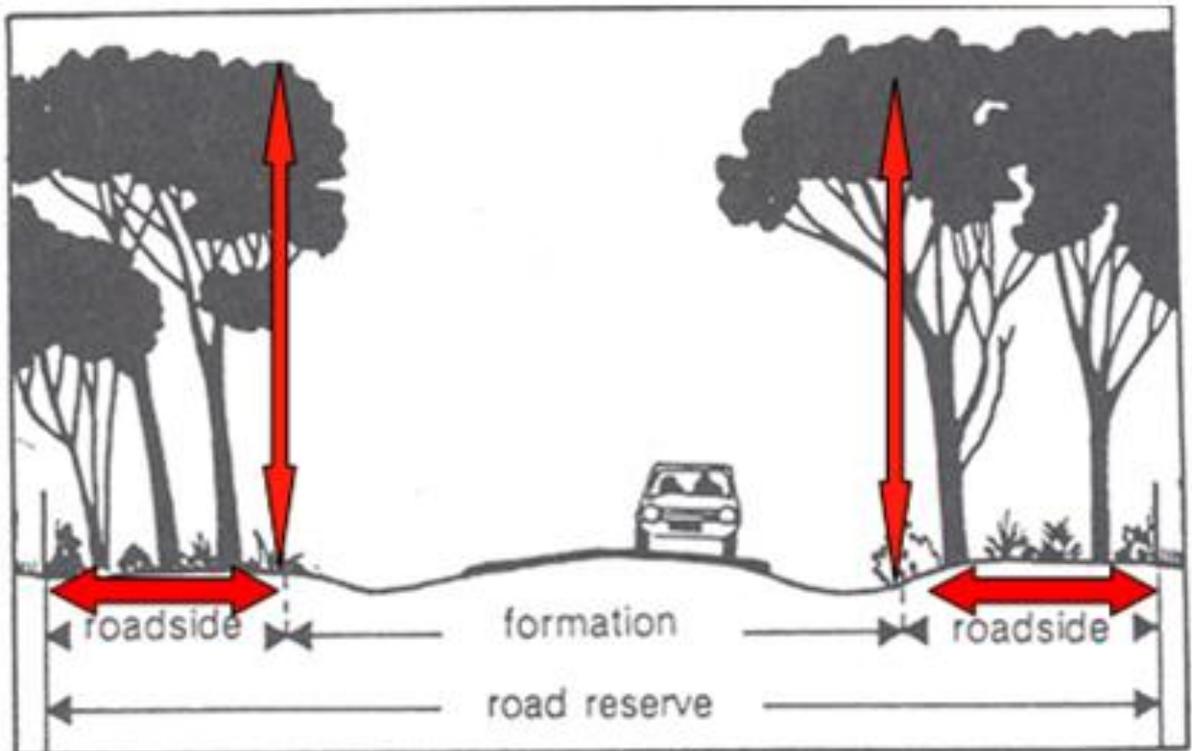


The remaining space is the roadside. ■



APPENDIX 1(B)





Declared Rare Flora and Road Maintenance

What is Declared Rare Flora?

Declared Rare Flora species are wild plant species that have been adequately searched for but are rare, in danger of extinction or need special protection.

Many Declared Rare Flora species are only known from a few hundred, or less, mature plants in the wild and some only from one or two sites. Road verges often provide important habitats for rare flora, especially in shires where extensive clearing has occurred for agriculture, housing, roads and amenities.

Declared Rare Flora and the law

Declared Rare Flora species are protected under the *Wildlife Conservation Act 1950*, which states that any designated Declared Rare Flora shall not be taken. For this purpose, the words 'to take' means 'to gather, pluck, cut, pull up, destroy, dig up, remove or injure the flora or to cause or permit the same to be done by any means'.

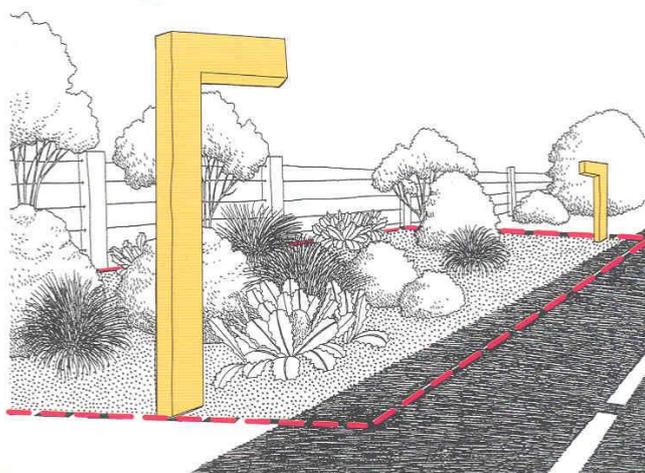
The only way Declared Rare Flora may be taken lawfully is to apply for a permit, which must be approved by the the Minister for the Environment. Applications for permits are free and can be arranged by contacting your local Department of Conservation and Land Management office or CALM Wildlife Branch on (08) 9334 0455. Applications are assessed on their effect on the conservation of the species as a whole and require at least six to eight weeks to be processed. A penalty of up to \$10,000 applies to Declared Rare Flora that is taken without a permit.

How do I know where Declared Rare Flora grows on roadsides?

Declared Rare Flora sites on roadsides are generally marked with two yellow markers which are bent to face towards each other as shown in the illustration. These markers are commonly known as 'Hockey sticks' or DRF markers.

DRF markers indicate that Declared Rare Flora occurs somewhere along the roadside between the markers. If work is proposed around these markers and your manager has not identified the presence of Declared Rare Flora or given you instructions on carrying out works, contact your manager before proceeding.

Continuing road works without obtaining a permit may break the law and jeopardise a critically endangered plant population.



Each time a new population of Declared Rare Flora is found, formal notifications are delivered to the appropriate landowners and managers. So, even if no DRF markers are present on the roadside, your Works Manager will be able to inform you of any Declared Rare Flora sites in the shire.

Declared Rare Flora is given special protection under State and Federal legislation to prevent extinction and to maintain biodiversity. Everyone is responsible for protecting Declared Rare Flora for the future.



Shire of Denmark

FINAL

Declared Flora Roads Management Plan



Version No.	Revision	Date
1	Draft for Internal Review	February 2012
2	Final for Councillor's Information & Distribution	April 2012



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DECLARED FLORA ROADS MANAGEMENT PLAN

A Declared Flora Road is defined as "...those roads which have conservation value owing to the vegetation growing within the road reserve. A Declared Flora Road contains vegetation of special conservation, cultural or scenic value and also provides an attractive tourist drive route within a Shire or region." (Roadside Conservation Committee).

A Flora Road is an area of high conservation flora and is considered a tourist asset to local communities.

As at March 2012 the Shire managed declared Flora Roads are:

- Ficifolia Road
- Tindale Road
- Scotsdale Road; and
- Mount Lindesay Road.

This Declared Flora Roads Management Plan (DFRMP) has had due regard to the Shire of Denmark's Code of Practice for Roadside Conservation and Road Maintenance (CoP), however due to their high conservation value there are additional management implications to ensure protection, enhancement, and promotion of the values within these road reserves.

Aim:

The aim of the DFRMP is to minimise any disturbance to the roadside flora, consistent with the provision of a safe and efficient roadway.

Objectives:

The objective of the DFRMP is to encourage best management practice, enhance the biodiversity values of the road(s) and to promote and raise the profile of the road(s) as having high conservation value.

Identified objectives are:

- Ensure the safe function of the road.
- Minimise disturbance to the roadside vegetation while providing a safe and efficient roadway.
- Prevent the introduction, or spread of weeds and soil borne pathogens within the roadside.
- Where rehabilitation is contemplated, local native species should always be used.
- Minimise the risk and impact from fire (fire management should be undertaken in such a way so as to take into account the ecological needs of the flora).
- Discourage the installation of utilities, such as telecommunications, water, power and gas, from being located within the road reserve of Flora Roads.
- Protect the cultural and heritage values of the roadside.
- Maintain and enhance the visual amenity and landscape quality of the road and roadside.
- Educate the community in regards to Flora Roads and their value.
- Ensure compliance with all legislative requirements.



Conservation Values:

The principle conservation values of Flora Roads include:

- The roadside must contain a significant population of native vegetation.
- Introduced trees and grasses are not important for conservation.
- The native vegetation must be in as near to its natural condition as possible. In undisturbed vegetation, several layers of plants occur – trees, shrubs and herbs are present in woodlands, for example. If one or more of the expected layers are missing, the conservation value is reduced.
- The roadside may be the only remaining example of original vegetation within a cleared area. It thus:
 - assists in vegetation mapping and distribution studies;
 - may provide a benchmark for study of soil change during agricultural development;
 - provides a source of local seed for revegetation projects;
 - acts as a wildlife habitat for the protection of fauna;
 - may harbour rare or endangered plants in the roadside;
 - may provide nest sites and refuges for native animals; and
 - may act as a biological corridor.
- The Flora Road should be a decent length (e.g. more than 2km), and may link up with main roads, tourist routes or other significant features within an area.



Best Practice Management and Guidelines for Implementation

1.0 Roadside Maintenance – Best Practice Management

- 1.1 That the Shire ensures that works being undertaken on the road allow for optimum protection and enhancement of the indigenous vegetation, having due regard for:
- (a) Road safety;
 - (b) fire prevention;
 - (c) minimising disturbance; and
 - (d) the introduction, or spread of, weeds and soil borne pathogens
- ensuring a commitment to best management practice of road management and maintenance of declared Flora Roads.
- 1.2 That local native vegetation beyond the road formation not be disturbed during road maintenance works.
- 1.3 That the Shire ensures all staff involved in road construction, maintenance and management are aware of the values of the Flora Roads and provided with the correct information/techniques/equipment for minimising disturbance to indigenous roadside vegetation.

1.0 Roadside Maintenance – Guidelines for Implementation

- (a) Road construction supervisors and relevant staff will be encouraged to attend seminars or courses related to roadside management and conservation conducted by TAFE, the RCC or other organisations as approved by the Director/Supervisor.
- (b) Persons undertaking works will be advised that native vegetation beyond the road formation are not to be disturbed, except where a permit has been issued or other Acts and/or exceptions override this requirement.
- (c) Telstra, Western power, local fire brigades and other relevant agencies will be made aware of the DFRMP, the location of the road itself and shall act in accordance with the Shire's CoP.
- (d) The boundary of works should be clearly identified prior to commencement. The managing authority will be expected to take into consideration the high conservation values present, and take special care when working within the Flora Road reserve and the surrounding area.
- (e) Plant, equipment and stockpiles are not to be parked amongst indigenous vegetation on the roadside.



2.0 Fire Management – Best Practice Management

- 2.1 Fire management should be undertaken in such a way so as to take into account the ecological needs of the flora.
- 2.2 That the Shire encourages its staff, the Bush Fire Advisory Committee, relevant fire management authorities (Fire and Emergency Services Authority) and private property owners to consider:
 - (a) Significance of a fire hazard;
 - (b) vegetation type;
 - (c) conservation value of the roadside; and
 - (d) maintenance of clear sight distances.

2.0 Fire Management– Guidelines for Implementation

- (a) The local fire authority and stakeholders will be advised of the location of the Flora road.
- (b) The local fire authority and stakeholders will be encouraged to utilise other alternatives for strategic fire breaks to avoid disturbing the Flora road.

3.0 Special Environment Areas – Best Practice Management

- 3.1 That any rare, priority and significant flora and fauna within the road reserve be recorded and clearly identified and protected prior to any works being carried out.
- 3.2 That the Shire consult with the Roadside Conservation Committee and or the Department of Environment and Conservation (DEC) about the appropriate management of roadside areas where a rare, priority or significant flora species has been located.
- 3.3 That the procedure outlined by the Roadside Conservation Committee for management of special environment areas be adopted where appropriate.

3.0 Special Environmental Areas – Guidelines for Implementation

- (a) A register will be prepared and held in the Shire's GIS system showing the location of all declared Flora Roads and associated values. The register will contain information on the name of the road, the location, length/distance of the road, width of the road, a list of the dominant plant species, threats such as weeds disturbances and significant values. This information, in an appropriate format is to be provided to the Shire's operational staff for use.



4.0 Rehabilitation and Revegetation – Best Practice Management

- 4.1 That regenerating native vegetation be protected where practicable and managed in such a way to prevent interference with the structure of the road or other important activities. See Guideline 4(b).
- 4.2 That prior to any approval being given for revegetation or natural regeneration projects, plans must be submitted to the Shire to ensure that:
- (a) The project is compatible with various roadside Codes of Practice and Guidelines;
 - (b) They will not interfere with any current service provision;
 - (c) The type of weed control is appropriate to the site;
 - (d) Local native vegetation is being used;
 - (e) The group initiating the planting or regeneration is able to maintain the plants until they are large enough to look after themselves; and
 - (f) Long term maintenance of the site has been adequately considered.
- 4.3 That the Shire consults with all relevant agencies including the Roadside Conservation Committee and the Department of Environment and Conservation prior to approving revegetation or regeneration projects.

4.0 Rehabilitation and Revegetation– Guidelines for Implementation

- (a) Plans of revegetation projects will be referred to the relevant agencies and community groups to determine compliance with relevant Codes of Practices.
- (b) Indigenous vegetation will not be permitted to regenerate if it is likely to grow in the clearance space required by maintenance activities (i.e. drains), or obstruct the visibility of traffic.



5.0 Removal of Vegetation – Best Practice Management

5.1 That where permission has been granted to remove, destroy or prune any indigenous vegetation, council ensures that no native vegetation other than that specified is destroyed or disturbed. *NB: Removal of fallen timber from any roadside requires permission from Council and a permit from the DEC.*

5.0 Removal of Vegetation– Guidelines for Implementation

- (a) Flora Roads should be subjected to specific planning and management considerations to ensure their conservation.
- (b) Prune offending branches rather than removing the whole tree. Cut branches off close to the limb or tree trunks.
- (c) Any request to remove fallen timber from a Flora road will be inspected prior to granting permission to assess the accessibility of the timber and the presence of other ground level features to provide habitat for small native animals.

6.0 Pest Plants and Animals – Best Practice Management

- 6.1 That the Shire conducts a maintenance program to control environmental weeds within the Flora Road.
- 6.2 That where pest animals are present, the Department of Agriculture and Food Western Australia (DAFWA) and or DEC be contacted to give appropriate advice on control measures.
- 6.3 That control of pest plants and animals on a Flora Road has regard to the pest and pest animal strategies developed by the DAFWA and the DEC.
- 6.4 Threats such as fire wood collection, gravel extraction and weed invasion should be managed carefully so as not to impact negatively upon the roadside vegetation.

6.0 Pest Plants and Animals– Guidelines for Implementation

- (a) Where pest plants and animals are to be eradicated from a Flora Road, work will be carried out in a manner which will cause minimal damage to the native vegetation. The area will be reinstated in such a manner that it will discourage reinfestation.
- (b) The weeds GIS spatial layer(s) is to be utilised as a guide to prevent the spread of targeted weeds.



7.0 Community Education – Best Practice Management

- 7.1 That Council highlights the importance of protecting Flora Roads consistent with the objectives of:
- (a) Road safety;
 - (b) Fire prevention;
 - (c) Wildlife habitat requirements;
 - (d) Landcare objectives;
 - (e) Local tourism; and
 - (f) Biodiversity sustainability,

as part of its community information initiatives.

- 7.2 That the Shire educates and involves adjoining landholders in the protection of the Flora Road.
- 7.3 That the Shire should encourage individual and community restoration and revegetation projects with special emphasis on enhancing wildlife corridors.

7.0 Community Education – Guidelines for Implementation

- (a) The community will be made aware of the Flora road, particularly adjoining landholders. Community engagement sessions can be conducted with the assistance of RCC to ensure conservation and safety needs of Flora Roads are catered for.
- (b) Raising the profile of the roadside vegetation as a Flora Rd to both community and road management authorities elevates awareness of those travelling through and working within a road reserve where high conservation values are present.
- (c) A recommendation for more appropriate management could include undertaking maintenance work outside of the spring flowering period – as tourists visiting these roads will be encouraged to see them when they are looking their best in spring - and pruning and clearing of these areas at this time can be unappealing to tourists.
- (d) Promote the Flora Road as a tourist icon. Flora Roads may also form part of a tourist drive or scenic wildflower route. Declared Flora Roads will, by their very nature, be attractive to tourists, and would often be suitable as part of a tourist drive network.

Consideration should be given to:

- promoting the road by means of a small brochure or booklet;
 - eventually showing all Flora Roads on a map of the region or State;
 - using specially designed signs to delineate the Flora Road section; and
 - constructing roadside flora rest areas where people can get out and enjoy the flora.
- (e) Walk trails could be designed and information brochures produced to assist in raising awareness of Flora Roads in the wider community. Walk trails could be made from these, and information brochures produced. The RCC has established links with Tourism WA for inclusion on wildflower tourist publications.



REVIEW OF DOCUMENT

Document is to be reviewed annually, or as required, jointly by the Planning & Sustainability Directorate and Infrastructure Services Directorate.

USEFUL REFERENCES

- Environmental Protection (Clearing of Native Vegetation) Regulations 2004
- Shire of Denmark Local Law Activities on Thoroughfares and Trading in Thoroughfares and Public Places 2001
- Shire of Denmark Local Law Relating to Pest Plants 1997
- Town Planning Scheme Policy No. 1 for Dieback Disease Management
- Operational Roadside Reserve Plan - Shire of Denmark Weed Strategy and Action Plan 2005-2010
- Code of Practice for Roadside Conservation and Road Maintenance (Shire of Denmark)
- Shire of Denmark Environmental Impact Assessment Checklist
- Biodiversity Conservation and Fire in Road and Rail Reserves: Management Guidelines (Roadside Conservation Committee, 2011)
- Denmark Greening Plan
- Assessing Roadsides: A Guide For Rating Conservation Value (Roadside Conservation Committee, 2002)
- Special Environmental Areas in Transport Corridors (Roadside Conservation Committee, 2000)



Appendix 1: Ficifolia Road

1.0 Road Formation

Ficifolia Road is a 40 metre road reserve which is 6.5Km long. Much of the road is unsealed, formed gravel. The drainage channel sufficient to pull water away from the form.

2.0 Environmental Values

Ficifolia Rd roadside vegetation is described as predominantly weed free with intact structure. The vegetation within Ficifolia Road Reserve has been mapped by the RCC as having a high conservation value for the majority of the declared Flora Road. The vegetation within the reserve is Agonis, Ficifolia and Sheoak woodland and shrubland. Species include endemic *Corymbia ficifolia*, as well as *Agonis juniperina*, *Acacia myrtifolia*, *Allocasuarina sp.*, *Melaleuca sp.*, *Banksia sp.*, *Kunzea sp.*, *Homalospermum sp.*, *Callistemon sp.*, *Anigozanthos sp.*, and heath and sedge species. *Corymbia ficifolia* is endemic to this area - distribution occurs from Peaceful Bay to Walpole however the main population occurs along Ficifolia Road and Conspicuous Cliffs Road.

Weed infestation is generally low (0-30%) and most of the vegetation shows little sign of vegetation decline. All sections of the Flora road have a complete compliment of structural levels (Groundcover, Shrubs, Trees) and the length of vegetation acts as a corridor to other remnants of native vegetation in the local area.

Ficifolia Rd is surrounded by the Walpole-Nornalup National Park, is near the Bibbulmun Track, Environmentally Sensitive Area's (ESA's), Threatened Ecological Communities (TEC's), threatened flora and threatened fauna populations are within proximity, Aboriginal heritage registered sites, and north of the South Coast highway is the iconic Valley of the Giants tourist road.

3.0 Specific Management Requirements

1. In line with the declaration of this road as a Flora Road the Shire has installed 2 Flora Road signs received from the Roadside Conservation Committee which it will maintain at the following locations (or near abouts) along Ficifolia Road Reserve:
 - a. Left hand road shoulder (if travelling east) at intersection of Conspicuous Beach Road and Ficifolia Road. Design plate facing west.
 - b. Right Hand road shoulder (if travelling east) at 6.4km from point a. with design plate facing east.
2. Surveys of this Flora Road indicated that utility services are present within the road reserve, namely Western Power and Telstra utilities. Management of these utilities within the road reserve should be sensitive to the significant conservation values of this vegetation. The Shire should advise utilities of the declaration of this road as a Flora Road and provide a copy of the Shire's Management Plan for this Flora Road to ensure utility providers undertake works appropriately in this reserve.
3. Surveys of this Flora Road identified 5 weeds invading the native vegetation within the road reserve namely, various Annual Grasses, Capeweed, Sowthistle, Dock and another unidentified Thistle. In order to preserve the conservation values of this road reserve the Shire will focus weed management efforts along Ficifolia Road Reserve for these species where possible.



Appendix 2: Tindale Road

1.0 Road Formation

Tindale Road is a 20 metre road reserve that runs the length of 11.6km. Much of the road is unsealed. The drainage channel is largely unformed either due to soil type or slope of the landscape where the road is situated. Some road works to construct drains may be required in the future and should not be hindered by the declaration of this road as a Flora Road.

2.0 Environmental Values

Tindale Rd roadside vegetation is described as comprised of sections that are weed free with intact structure to sections that are weed infested with little to no supported native vegetation. The vegetation within Tindale Road Reserve has been mapped by the RCC as having a high to medium-high conservation value for the entirety of the declared Flora Road. The vegetation within the reserve has small pockets of Agonis shrubland however is predominately Jarrah/Marri/Karri forest. Species include Marri, Jarrah, Karri, *Eucalyptus patens*, *Melaleuca sp.*, *Allocasuarina fraseriana*, *Kunzea sp.*, *Agonis parviceps*, and locally endemic *Eucalyptus staeri*.

Weed infestation has generally low (0-30%) to medium (30-70%) levels of infestation and none of the vegetation within the reserve showed signs of vegetation decline. All sections of the Flora Road have a complete complement of structural levels (Groundcover, Shrubs, Trees) and the length of vegetation acts as a corridor to other remnants of native vegetation in the local area.

Tindale Rd provides access to Mt Roe National Park, and the northern section of the road is in a designated ESA. Threatened flora (*Dryandra serra* (P4), *Billardiera sp.* (P3), *Leucopogon polystachyus* (P2), *Spyridium riparium* (P2) (as identified in 2002 road reserve survey) and threatened fauna populations within proximity. Kent River catchment – the road parallels the Kent River.

3.0 Specific Management Requirements

1. In line with the declaration of this road as a Flora Road the Shire has installed 2 Flora Road signs received from the Roadside Conservation Committee which it will maintain at the following locations (or near-about) along Tindale Road Reserve:
 - a. Left hand road shoulder (if travelling north) at intersection of South Coast Highway and Tindale Road. Design plate facing south.
 - b. Right Hand road shoulder (if travelling north) at intersection of Tindale Rd and Northumberland Rd with design plate facing south.
2. Surveys of this Flora Road indicated that utility services are present within the road reserve, namely Telstra utilities. Management of these utilities within the road reserve should be sensitive to the significant conservation values of this vegetation. The Shire should advise utilities of the declaration of this road as a Flora Road and provide a copy of the Shire's Management Plan for this Flora Road to ensure utility providers undertake works appropriately in this reserve.
3. Surveys of this Flora Road ten weeds invading the native vegetation within the road reserve namely, *Oxalis carnata*, flatweed, fleabane, pelargonium, artichoke thistle, lotus, apple tree, blackberry nightshade and mint. In order to preserve the conservation values of this road reserve the Shire will focus weed management efforts along Tindale Road Reserve for these species where possible.



Appendix 3: Scotsdale Road

1.0 Road Formation

Scotsdale Road is generally a 20 metre road reserve with some localised widened areas up to 40 metres. The road from the Denmark Township to McLeod Rd runs the length of approximately 20km. The road surface is sealed bitumen with formed drainage channels and a standard crossfall. The drainage channels generally have mature vegetation established beside them and in places vegetation (some mature) has established on the road shoulder.

This road is a significant tourist route within the Shire of Denmark.

2.0 Environmental Values

Scotsdale Rd roadside vegetation is described as comprised of sections that are predominantly weed free with intact structure to sections that are showing native vegetation decline with some understorey structure loss and weeds. The vegetation within Scotsdale Road Reserve has been mapped by the RCC as having a high to medium-high conservation value for the majority of the declared Flora Road, some areas fall to medium low conservation value where the road formation is close to fence lines adjoining predominantly cleared land. The vegetation within the reserve has been identified as some Acacia mixed shrubland with dominant Jarrah/Marri/Karri forest. Species include Marri, Jarrah, Karri, *Agonis flexuosa*, *Agonis juniperina*, *Agonis parviceps*, *Allocasuarina decussata*, *Eucalyptus patens*, Bullich, and *Hakea varia*.

Scotsdale Rd has significant roadside riparian vegetation as it runs parallel to Scotsdale Brook in some sections. There is also a significant population of *Banksia seminuda* near Harewood Rd. This species distribution is from Dwellingup to Denmark, however it is usually yellow in flower and to 3m in coastal environs, whereas the more rare red-flowering variety is restricted to this area and grows to 20m. There is also significant diversity of vegetation communities along the 20km section of road from karri forest to wetland communities. The adjacent Harewood forest an example of 100 year natural regeneration after clear-felling logging.

Weed infestation ranges from 0-100% generally trending with the land use adjoining the road reserve. Some of the vegetation is showing signs of vegetation decline however surveys were inconclusive of the cause. The length of vegetation acts as a corridor to other remnants of native vegetation in the local area.

Scotsdale Rd is a major tourist drive accessing many wineries and galleries from the Denmark townsite in a loop to McLeod Rd and then back to South Coast Highway. The 2km Harewood walk trail and picnic site is accessed from Scotsdale Rd. The proposed Munda Biddi trail, and Bibbulmun Track are within proximity, ESA's, TEC's, threatened flora and threatened fauna populations are within proximity, Aboriginal heritage registered sites.



3.0 Specific Management Requirements

1. In line with the declaration of this road as a Flora Road the Shire has installed 2 Flora Road signs received from the Roadside Conservation Committee which it will maintain at the following locations (or near abouts) along Scotsdale Road Reserve:
 - a. Left hand road shoulder (if travelling west) at intersection of Barry Road and Scotsdale Road. Design plate facing east.
 - b. Right hand road shoulder (if travelling west) at intersection of McLeod Rd and Scotsdale Rd with design plate facing west.
2. Surveys of this Flora Road indicated that utility services are present within the road reserve, namely Western Power and Telstra utilities. Management of these utilities within the road reserve should be sensitive to the significant conservation values of this vegetation. The Shire should advise utilities of the declaration of this road as a Flora Road and provide a copy of the Shire's Management Plan for this Flora Road to ensure utility providers undertake works appropriately in this reserve.
3. Surveys of this Flora Road identified four weeds invading the native vegetation within the road reserve namely, various Annual Grasses, Watsonia, Victorian Tea Tree and Kikuyu. In order to preserve the conservation values of this road reserve the Shire will need to focus weed management efforts along Scotsdale Road Reserve for these species where possible.



Appendix 4: Mt Lindesay Road

1.0 Road Formation

Mt Lindesay Road is a one chain or 20 metre road reserve, with some localised widening where revegetation works have occurred. The road runs the length of 11.5km. Much of the road is unsealed. The drainage channel is largely unformed which may require future clearing in areas where heavy rainfall can compromise the road formation.

2.0 Environmental Values

Mt Lindesay Rd roadside vegetation is described as comprised of sections that are weed free with intact structure to sections that are weed infested with little to no supported native vegetation. The vegetation within Ficifolia Road Reserve has been mapped by the RCC as having a high to medium-high conservation value for the majority of the declared Flora Road. The vegetation within the reserve is identified as Agonis woodland and Jarrah Marri forest with some areas of Karri forest. Species include Marri, Jarrah, Karri, *Agonis sp.*, *Eucalyptus patens*, *Pimelea sp.* and sedges.

Weed infestation is generally low (0-30%) however some areas were surveyed with weed extents between 70-100% weed coverage. These areas of high weed infestation are associated with old gravel pits and are currently under revegetation. All sections of the Flora road have a complete compliment of structural levels (Groundcover, Shrubs, Trees) and much of the vegetation acts as a corridor to other remnants of native vegetation in the local area.

Mt Lindesay Rd is accessed off Scotsdale Rd which is a major tourist drive circuit to many wineries and galleries in the area. Mt Lindesay Rd provides access to Mt Lindesay National Park, adjacent State Forest, Scotsdale tourist drive, ESA's, TEC's, threatened flora (*Chorizema reticulatum* (P3)) and threatened fauna populations within proximity, Aboriginal heritage registered sites, Denmark River catchment – the road parallels the Denmark River.

3.0 Specific Management Requirements

1. In line with the declaration of this road as a Flora Road the Shire has installed 2 Flora Road signs received from the Roadside Conservation Committee which it will maintain at the following locations (or near-about) along Mt Lindesay Road Reserve:
 - a. Left hand road shoulder (if travelling north) at intersection of Scotsdale Road and Mt Lindesay Road. Design plate facing south.
 - b. Right Hand road shoulder (if travelling north) at 11.4km from point a. with design plate facing north.
2. Surveys of this Flora Road indicated that utility services are present within the road reserve, namely Western Power and Telstra utilities. Management of these utilities within the road reserve should be sensitive to the significant conservation values of this vegetation. The Shire should advise utilities of the declaration of this road as a Flora Road and provide a copy of the Shire's Management Plan for this Flora Road to ensure utility providers undertake works appropriately in this road reserve.
3. Surveys of this Flora Road identified 13 weeds invading the native vegetation within this road reserve namely, various Annual Grasses, Capeweed, Nighshade, Bridal Creeper, Eastern States Wattles, Wild Oats, Freesias, Wild Pine, Kikuyu, Agapanthus, geraniums, large periwinkles and another unidentified Thistle. In order to preserve the conservation values of this road reserve the Shire will need to focus weed management efforts along Mt Lindesay Road Reserve for these species where possible.



4. The Shire should continue to monitor the health of revegetation works along Mt Lindesay Rd and conduct a survey of the needs for weed management in this area.
5. At the northern end of the declared Flora Road the road formation narrows substantially.



ENVIRONMENTAL IMPACT ASSESSMENT CHECKLIST

AIM: To determine which Shire projects (new and/or major works) require further environmental assessment and/or specific management procedures developed prior to works commencing.

This form is to be used by those employees responsible for works projects that may impact on environmental values.

Project Name:	
Description of Works:	
Location of Works:	
Timeframe of Works:	

	No	Yes	N/A	Comments
1. Are the project works being conducted on land owned/managed by the Shire? <i>If answer is 'No' then approval needs to be obtained from the landowner(s) in writing prior to works comments. Once obtained approval, copy should be attached to this checklist.</i>				
2. Will any native vegetation be cleared or altered (i.e. pruned, mulched, damaged)? <i>If answer is 'Yes' then a clearing permit may need to be obtained as per Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i>				
3. Are the project works being conducted in or adjacent to (i.e. within 50 metres) areas identified as Special Environmental Areas – refer maps/register available from Sustainability Services for the most current version showing threatened flora, fauna sightings, environmentally sensitive areas, threatened ecological communities, declared flora roads, public drinking water source area.				
4. Is the site within or immediately adjacent to an Aboriginal Heritage Site – refer maps/register available from Sustainability Services for most current version. <i>If answer is 'Yes' then a Regulation 10 or Section 18 under the Aboriginal Heritage Act (1972) may be required to be obtained.</i>				
5. Are the project works being conducted immediately adjacent to a National Park or Nature Reserve?				
6. Are the project works being conducted in areas identified as high or medium-high conservation value – refer maps/register available from Planning & Sustainability Staff for the most current version.				
7. Are the works occurring within a known dieback infested area?				
8. Are the works to occur during wet soil conditions? <i>If answer is 'Yes' then appropriate dieback hygiene management controls are to be adhered to.</i>				
9. Does the work site pass over, adjoin or drain into a wetland, watercourse, river or Inlet?				
10. Are acid sulfate soils present on the work site?				

Relevant Information for Reviewing Officer(s):

- *Projects that have 'yes' to any item (excluding No. 1) will require further assessment by the Project Manager and/or specific management procedures developed to address the issues/values identified. Sustainability Services are available to assist and provide guidance as required.*
- *The Reviewing Officer's relevant Director must review the Checklist in addition to the Reviewing Officer (NB: if reviewing officer is the relevant Director then no additional review is required).*
- *Once completed, this Checklist should be filed on the relevant Organisational Records file – see Records Staff if required to determine appropriate file.*

Checklist Completed By: Name _____
Position _____

Signature _____
Date _____

Checklist Reviewed By: Name _____
Position _____

Signature _____
Date _____