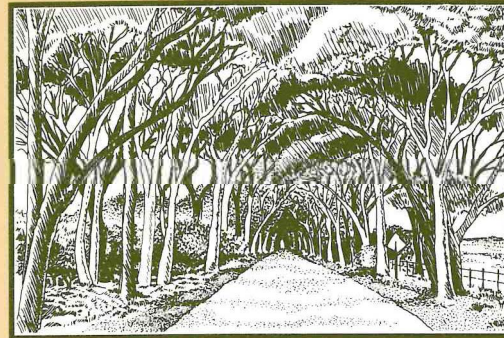


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ROADSIDE CONSERVATION COMMITTEE

*GUIDELINES
FOR THE
CLEARING
AND
MAINTENANCE
OF ROADSIDE
VEGETATION
BY LOCAL
GOVERNMENT*



PUBLISHED BY
CONSERVATION AND LAND MANAGEMENT
1989



SEPTEMBER 1989

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*The Roadside Conservation Committee
acknowledges the contribution made
by officers of the Main Roads Department
to the production of these Guidelines.*

1. INTRODUCTION

In many parts of the State, roadside vegetation provides the only remaining example of the original flora, and the only remaining habitat for native fauna.

Roadside vegetation is therefore valuable and should be retained and protected whenever possible. This protection should apply to the whole range of plant species, trees, shrubs and ground cover. Even the smallest plants are often crucial for the survival of fauna, in suppressing weeds and stabilizing the soil.

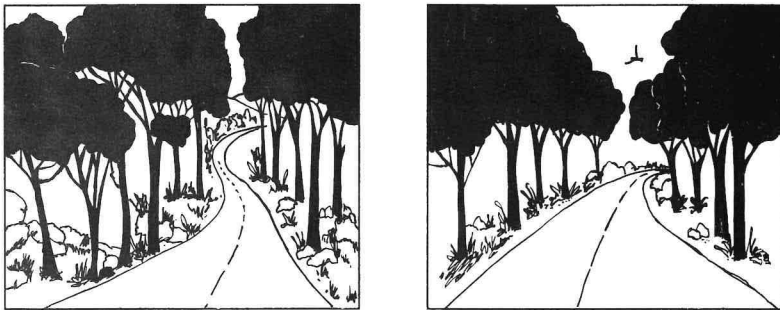
It is therefore essential that any works which may cause disturbance to roadside vegetation be assessed in terms of their environmental impact. Although Local Government and service utility organisations will be able to make satisfactory judgements about many of their proposals which will disturb vegetation, some proposals will require assessment by a suitably qualified or experienced botanist or biologist. The occurrence of rare plants is an example, and the process of carrying out an Environmental Assessment will ensure that important features of roadside vegetation are protected wherever possible.

These guidelines have been prepared to assist Local Government in the care and management of roadside vegetation associated with road construction and maintenance works. Local Government personnel wishing to discuss these guidelines should contact the Divisional office of the Main Roads Department for further information. Refer to the attached information sheet.

2. CLEARANCE FOR ROAD SAFETY

Although the conservation of roadside vegetation is the primary objective of these guidelines, road safety is a principal consideration for road managers.

Where visibility and general safety is likely to be impaired, trees and tall shrubs should be kept clear of road pavements, particularly at bridges, curves, road junctions, farm entrances, school bus stops, guide posts and signs.



Roadside clearing must be consistent and predictable.

However, in some situations, retaining vegetation, including trees consistently close to the pavement, may be preferable to a wider clearance that removes well conserved vegetation. For instance it may be possible to tolerate a clearance width which is less than ideal, providing it is consistent and predictable and does not present the motorist with an unexpected obstacle too close to the edge of the road.

3. DEFINITION OF TERMS

The diagrams below show typical road reserve cross sections and refer to the definitions used in these guidelines:

CARRIAGEWAY:	Width of road between guide posts.
BATTER:	Slope of banks and cuttings.
TABLE DRAIN:	The drain adjacent to the road.
CLEARING WIDTH:	The width required to carry out the roadworks during construction.
MAINTENANCE ZONE:	Area requiring periodic disturbance to maintain the road and table drain and other drainage facilities.
ROADSIDE:	The area between the maintenance zone the road reserve boundary excluding drainage requirements.

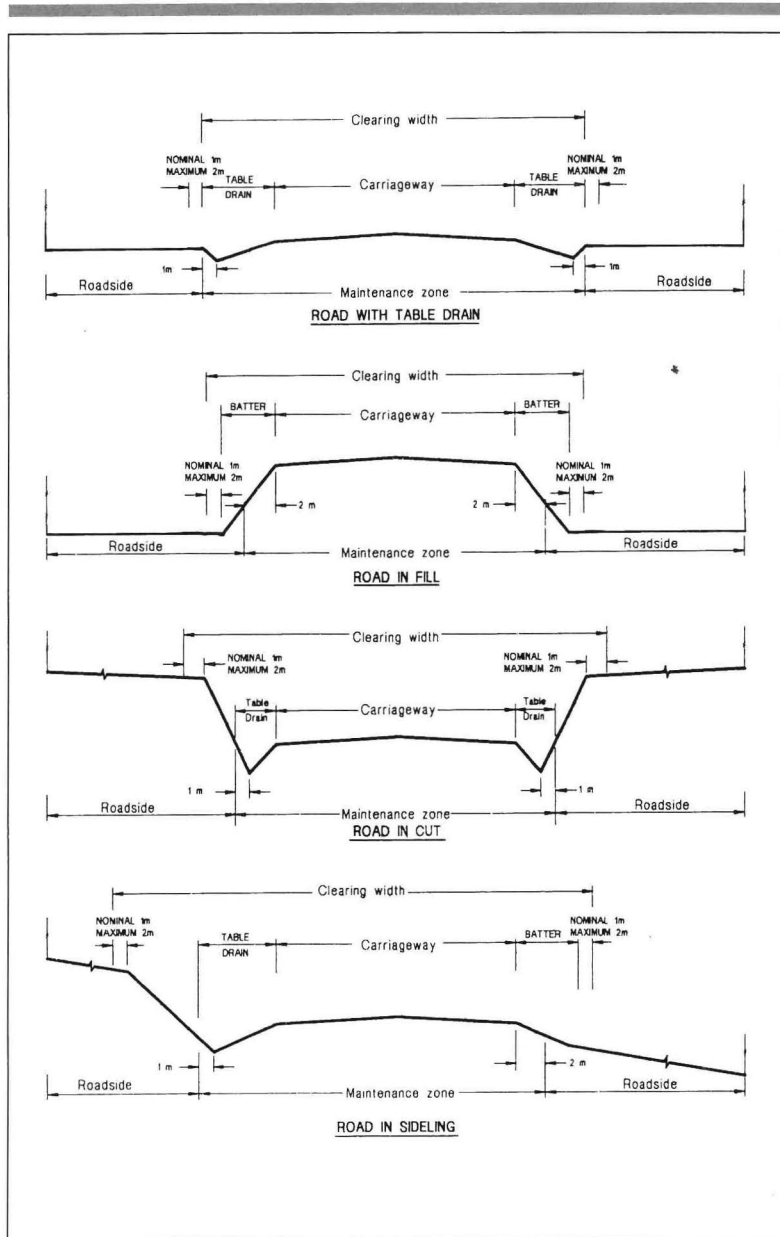
4. ROAD CLASSIFICATION

In every region a classification system can be used to identify the relative importance of a road. This classification provides a basis on which to establish the width of the carriageway.

In general, the important factors to be considered in developing classification categories for the road networks include:

- ❖ Traffic composition- cars, trucks, buses and farm vehicles.
- ❖ Traffic volume- high, low and seasonal usage.
- ❖ Purpose of traffic- commercial, school bus, farm use, or tourism.

For instance roads largely used for scenic or tourist purposes may not need to be designed to as high a standard as roads with an equivalent traffic volume, but for a different purpose.



Typical road reserve cross sections

A suggested hierarchy for Local Government roads could be the consideration of 4 categories as shown in Table 1:

CATEGORY	CRITERIA	SUGGESTED CARRIAGEWAY WIDTH
1	Major feeder roads	9m
2	Lesser feeder roads	8m
3	Farm access roads (major)	7m
4	Farm access roads (minor)	5m

TABLE 1: Categories of Local Government Roads

5. CLEARING WIDTH

The width required for clearing to accommodate the earthworks for the carriageway is influenced by many factors. Some of the factors to be considered are:

- ❖ the region of the State
- ❖ design speed
- ❖ terrain and soil type
- ❖ drainage requirements
- ❖ vegetation type
- ❖ areas where special roadside vegetation exists
- ❖ road classification such as a scenic or tourist road

Many wide road reserves are created for the express purpose of protecting and conserving natural vegetation.

The width of clearing required to carry out the earthworks for the road must be based on engineering needs and not on the width of the road reserve.

The width on either side of the carriageway used to accommodate the table drain and batters requires careful site specific consideration to ensure that there is minimal disturbance to roadside vegetation.

Table 2 provides a guideline for suggested clearing widths for the four categories of roads defined at Table 1.

CATEGORY	CARRIAGEWAY	CLEARING WIDTH
1	9m	15m
2	8m	14m
3	7m	12m
4	5m	7m

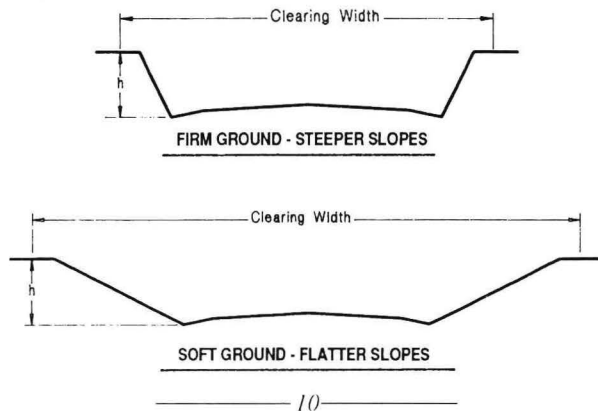
TABLE 2: Nominal Clearing width for Local Government Road categories

6. MANAGEMENT TECHNIQUES

Construction techniques used to reduce the clearing width include:

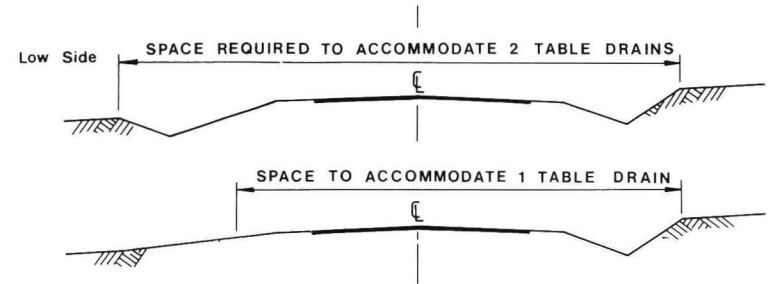
6.1 DESIGN

The batter slopes for cuttings, embankments and table drains may be varied, depending on soil type and slope stability, to reduce the space occupied by earthworks.

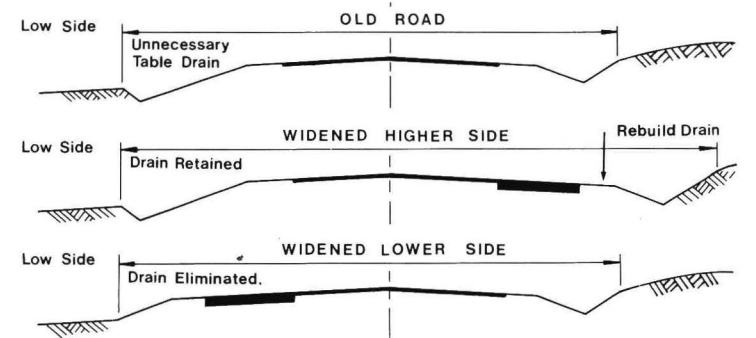


To save space, able drain width and depth may be reduced where drainage needs permit.

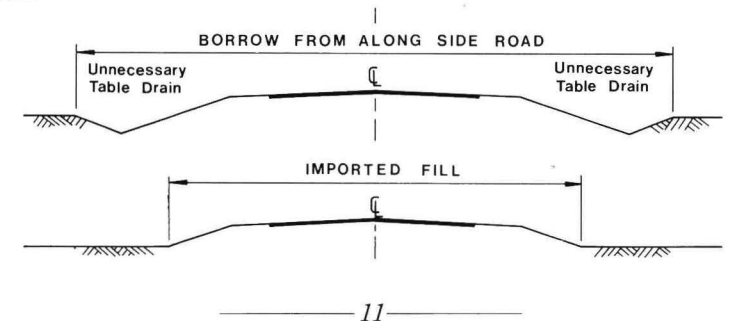
Construction of a table drain on the lower side of the road should be avoided.



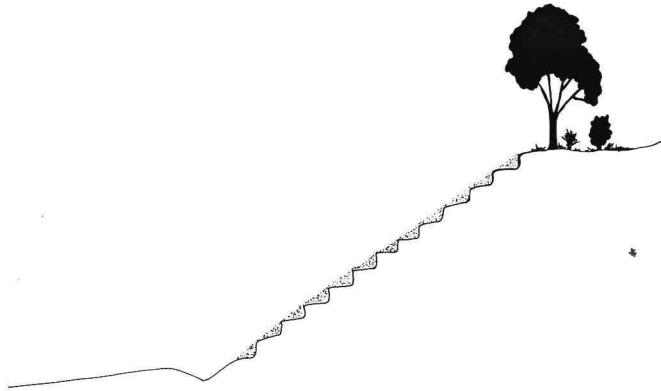
Widen the carriageway on the low side of the road where appropriate to reduce the space required for earthworks.



Import fill for embankment to avoid side borrow from alongside the road.

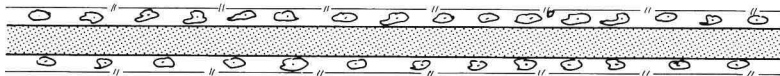


On wide batter slopes use step slope techniques to retain topsoil to assist regeneration and provide slope stability.

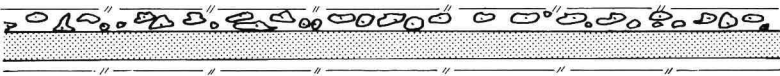


6.2 ROADSIDE WIDTH

Offset the carriageway to one side of the road reserve to enable a wider strip of vegetation to be retained rather than have two narrow strips.

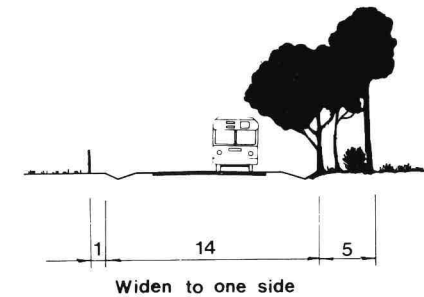


AVOID TWO NARROW ROADSIDES

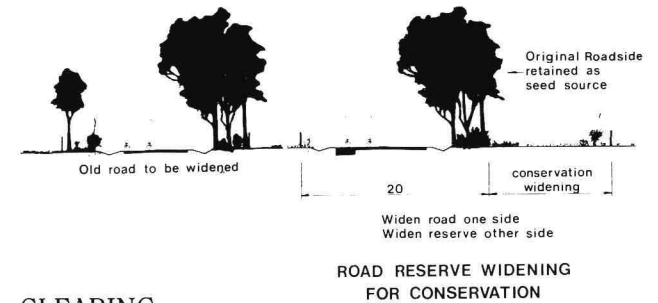


ONE WIDE ROADSIDE IS PREFERRED

Widen the carriageway to the side where the vegetation is in the poorest condition. Retain the other roadside undisturbed. Where design and site conditions permit the carriageway alignment may shift from one side of the road reserve to the other to maximise the retention of well conserved vegetation.



Widen road reserves for their conservation value at every opportunity, especially where re-fencing is proposed.



6.3 CLEARING

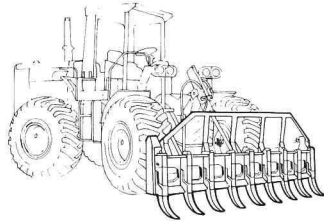
Flora roads and other roads identified as having special environmental values should be subjected to specific planning and management considerations to ensure conservation of their value.

Sites containing declared rare flora should be marked as Special Environmental Areas. Consultation with CALM officers is a statutory requirement under the Wildlife Conservation Act when declared rare flora will be affected.

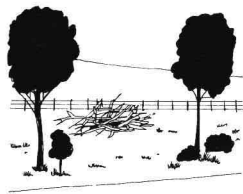


Ensure the work site is free of dieback fungi. Plant and vehicles should be thoroughly cleaned down prior to positioning on work site. The manner in which work is completed may require more careful consideration if dieback fungus is present. Consultation with CALM officers will enable the presence of dieback and condition of site to be assessed.

Use machinery fitted with blade rake to clear and stack vegetation for regeneration purposes.



If it is necessary to burn cleared vegetation, ensure that the flames do not damage flora to be retained.

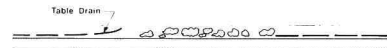


Rather than clear a uniform and continuous width each side of the centreline, vary the clearing width to accommodate only that space required for earthworks.

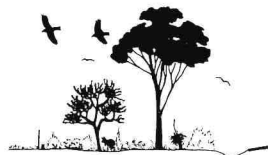


Consider the effects on the remaining vegetation of the additional clearing width required to windrow topsoil and also the techniques used to return topsoil to areas disturbed by the roadworks.

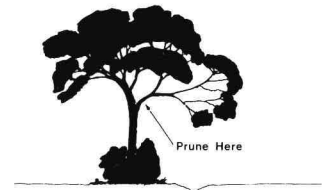
Divert the line of a table drain to avoid disturbing valuable and unique flora in close proximity to the road.



Do not turn road machinery at locations where roadside flora is well conserved.



Prune offending branches rather than remove the whole tree. Cut branches off close to limb or tree trunk.



6.4 REGENERATION

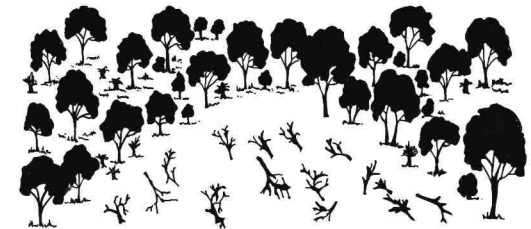
Retain undisturbed vegetation to avoid regeneration costs

Consider the method to be used to establish regrowth on areas disturbed during roadworks operations in erosion prone areas.

Time rehabilitation procedures to take advantage of weather conditions favourable to natural regeneration, direct seeding and or roadside planting.

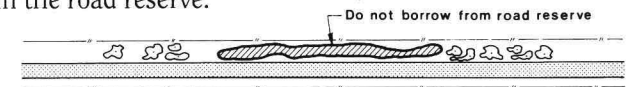
Cleared vegetation should be spread over areas disturbed by roadworks and borrow pits to assist regeneration. If possible do not burn cleared vegetation.

Retain topsoil from areas where well conserved vegetation has been cleared for respreading over areas to be regenerated.



6.5 BORROW PITS AND STORAGE AREAS

Plan the location of all borrow pits on cleared sites. Do not locate them in the road reserve.



Locate material stockpile or compounds outside the road reserve. Where this is not possible select locations where flora is degraded.

Avoid the parking of construction equipment and vehicles under trees and over their root zones.

6.6 OTHER SUGGESTIONS

VEGETATION CONTROL

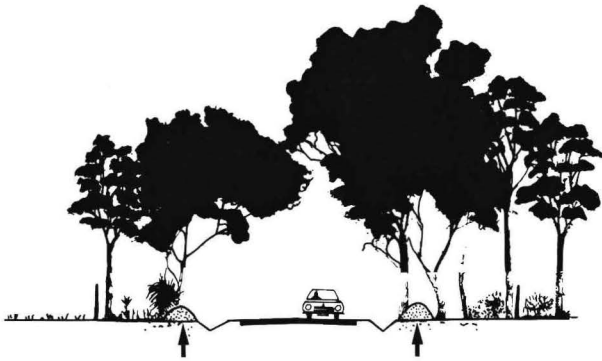
An integrated herbicide and mechanical vegetation control programme should be practised which is cost effective and accounts for conservation objectives.

Use herbicides to control grass and woody weed growth in the juvenile stage rather than using a grader to clear shoulders, batters and drains. This avoids disturbing the soil which provides an improved seed bed for future vigorous weed growth.

RECONDITIONING

Avoid windrowing spoil and debris beyond the top of the back slope onto roadside vegetation.

Avoid unnecessary reshaping of table drains because of the detrimental effect scraping has on ground cover.



AVOID WINDROWING SPOIL BEYOND BACKSLOPE

VEGETATION DEBRIS AND SPOIL

Weed contaminated spoil should not be dumped in areas of well conserved vegetation.



7. MRD DIVISIONAL OFFICES INFORMATION SHEET

PRINCIPAL OFFICE
Waterloo Crescent
EAST PERTH WA 6004

*Postal Address: PO Box 6202
EAST PERTH WA 6004
Tel: (09) 323 411
Fax: (09) 323 4430
Telex: (09) 92894*

ALBANY
Chester Pass Road
PO Box 503
ALBANY WA 6330
Tel: (098) 41 2722 Fax: (098) 41 8213

BUNBURY
Robertson Drive
BUNBURY WA 6230
Tel: (097) 25 4077 Fax: (097) 25 4013

CARNARVON
30 Robinson Street
PO Box 480
CARNARVON WA 6701
Tel: (099) 41 1405 Fax: (099) 41 2746

GERALDTON
Eastward Road
PO Box 165
GERALDTON WA 6530
Tel: (099) 21 2322 Fax: (099) 21 5606

KALGOORLIE

Lower Hannan Street

PO Box 99

KALGOORLIE WA 6430

Tel: (090) 21 1255 Fax: (09) 21 4774

KIMBERLEY

Loch Street

PO Box 159

DERBY WA 6728

Tel: (091) 91 1133 Fax: (091) 91 1846

Lot 239 Messmate Way PO Box 138

KUNUNURRA WA 6743

METROPOLITAN

Planet Street

CARLISLE WA 6101

Tel: (09) 361 8522 Fax: (09) 361 5081

NARROGIN

Mokine Road

PO Box 194

NARROGIN WA 6312

Tel: (098) 81 1566 Fax: (098) 81 3053

NORTHAM

Yilgarn Avenue

PO Box 333

NORTHAM WA 6401

PILBARA

Brand Street

PO Box 2256

SOUTH HEDLAND WA 6722