VOLUME 10 ENVIRONMENTAL DESIGN AND MANAGEMENT

SECTION 2 IMPROVING EXISTING ROADS

PART 2

HA 63/92

IMPROVING EXISTING ROADS IMPROVEMENT TECHNIQUES

SUMMARY

This Advice Note gives guidance on the environmental design for improving the landscape character of existing roads.

INSTRUCTIONS FOR USE

1. Remove HA 63/92 from Volume 10, Section 3, Part 1.

2. Insert HA 63/92, with new title page, into Volume 10, Section 2, Part 2.

3. Archive this sheet as appropriate.

Note: New contents pages for Volume 10 containing reference to this document are available with HA 55/92.

THE HIGHWAYS AGENCY

THE SCOTTISH EXECUTIVE DEVELOPMENT DEPARTMENT

THE NATIONAL ASSEMBLY FOR WALES
CYNULLIAD CENEDLAETHOL CYMRU

THE DEPARTMENT FOR REGIONAL DEVELOPMENT*

Improving Existing Roads
Improving Techniques

* A Government Department in Northern Ireland

Summary: This Advice Note gives guidance on the environmental design for improving the landscape character of existing roads.

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above Overseeing Organisations

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Volume 10 home page

REGISTRATION OF AMENDMENTS

Amend No	Page No	Signature & Date of incorporation of amendments	Amend No	Page No	Signature & Date of incorporation of amendments

Volume 10 home page

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VOLUME 10 **ENVIRONMENTAL DESIGN**

SECTION 1 **THE GOOD ROADS GUIDE - IMPROVING EXISTING ROADS**

PART 1

HA 63/92

THE GOOD ROADS GUIDE IMPROVING EXISTING ROADS IMPROVEMENT TECHNIQUES

Contents

GENERAL PREFACE TO THE GOOD ROADS GUIDE SERIES OF ADVICE NOTES

Structure of the Guide

0.1 The Good Roads Guide is the name given to the series of documents contained in Sections 1, 2 and 3 of Volume 10 of the Design Manual for Roads and Bridges. The Guide is written in nine Parts each of which is published as an Advice Note. The Guide is written to be read as a whole. The Parts of the Good Roads Guide are as follows:-

Section 1	NEW ROADS	
Part 1	HA 55/92	Landform and Alignment
Part 2	HA 56/92	Planting, Vegetation and Soils
Part 3	HA 57/92	Integration with Rural Landscapes
Part 4	HA 58/92	The Road Corridor
Part 5	HA 59/92	Nature Conservation
Part 6	HA 60/92	Heritage
Part 7	HA 61/92	Contract and Maintenance Implementation
Section 2	MOTORWAY WIDENING	
Part 1	HA 62/92	Environmental Design Widening Options and Techniques
Section 3	IMPROVING EXISTING ROADS	
Part 1	HA 63/92	Environmental Design Improvement Techniques

How to use the Good Roads Guide

0.2 Many of the design ideas put forward in Section 1 - New Roads are also relevant to the other Sections and cross references have been provided.

0.3 The first Chapter of each Part of the Guide reviews the issues and topics covered. The subsequent chapters deal with a particular topic. Within each chapter, the key issues are first listed and then discussed with illustrations drawn from roads throughout the UK.

0.4 The Good Roads Guide is not a step-by-step guide on how to build a road or a substitute for professional advice. It is intended to be used by the designer to help in the identification of areas and issues where careful consideration of environmental factors is required. The division of the Guide into Parts and the Parts into topics has been done to aid this process.

0.5 Environmental design of roads is a matter of respecting the special character of each individual location. The illustrations included show solutions devised to meet the requirements of specific sites. The use of standard solutions, irrespective of the location, is not appropriate.

Implementation

0.6 The principles set out in this Advice Note should be taken into account in the preparation of all schemes for the construction and improvement of trunk roads, including motorways.

0.7 Where conflicts exist between environmental design, costs, engineering feasibility and safety requirements, and competing options are available, the Design Organisation will need to advise the Overseeing Department accordingly.

Application in Wales

0.8 Requirements in Wales are primarily covered by the publications "Roads in Upland Areas: Design Guide" (published by the Welsh Office 1990) and "Roads in Lowland Areas: Design Guide" and "Rock Profiling and Vegetation Re-establishment" (both due for publication by the Welsh Office in 1993). This Advice Note supplements these Design Guides.

Application in Scotland

0.9 The Scottish Office Roads Directorate endorses the practice given in the Good Roads Guide. More specific guidance is provided by the Roads Directorate's Landscape Officer.

0.10 The Scottish Office discussion document published in February 1992 "Roads, Bridges and Traffic in the Countryside" addresses related issues.

Application in Northern Ireland

0.11 The principles set out in this Advice Note are endorsed as good practice by the Department of the Environment (NI). The guidance will be taken into account in preparing schemes for the construction or improvement of all roads in Northern Ireland.

Acknowledgements

0.12 The following photographs have been reproduced with permission:-

Chapter 3 Page 2
Air photograph of the A1/M by permission of Acer Consultants Ltd.

CHAPTER 1 IMPROVING EXISTING ROADS: INTRODUCTION

1.1 SCOPE

- This part gives guidance on environmental design for improving the landscape character of existing roads.

12. MAIN ISSUES

- The opportunities to improve the environmental quality of existing roads arise mainly from realising the full potential of maintenance and management practices in opening up and creating views, managing for nature conservation and creating roadside character
- Even minor improvements on line, such as localised widening or regarding, should be taken as an opportunity to review the range of techniques used in Section 2 of this volume.
- The management of vegetation for nature conservation objectives is a well-researched and well-documented subject, on which advice can be obtained from English Nature and other bodies.

1.3 DESIGN OBJECTIVES

- The use of standard management techniques to open up new views and create visual character within the road corridor.
- The creation and maintenance of an attractive road corridor for the road user.

1.4 STATUTORY BODIES

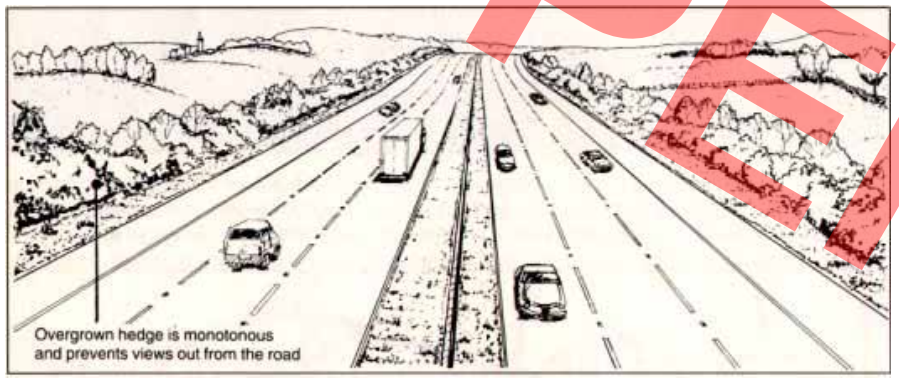
- Within this Part, reference to the Department of Transport, English Nature, English Heritage and the National Rivers Authority should also be read as referring to the appropriate statutory authority or adviser for Wales, Scotland and Northern Ireland.

2.1 PRINCIPLE

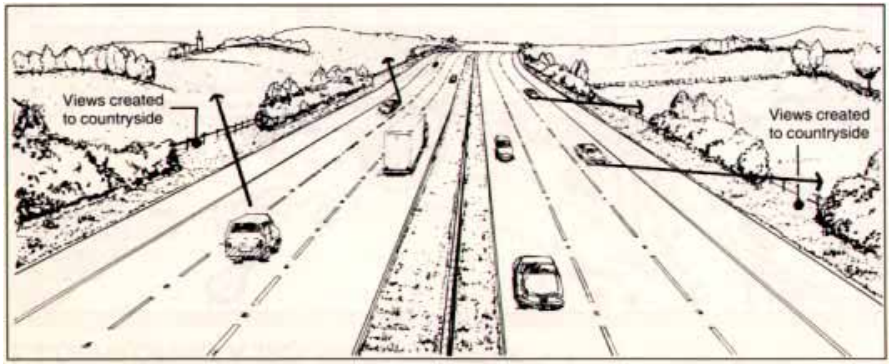
- A road without views of the surrounding landscape, or without views created within highway planting, becomes dull and monotonous. Providing interest for drivers by opening up and managing planting makes the road more pleasant to use. Boredom is also reduced, which makes the road safer. See also Section 1: Pt 2.

2.2 OPENING UP VIEWS BEYOND THE HIGHWAY BOUNDARY

In rural areas, vegetation alongside roads at grade or on embankment can be managed to give views of the surrounding countryside.

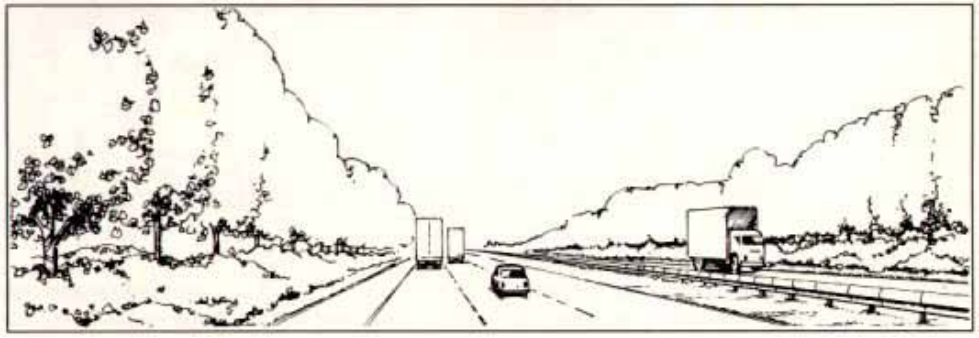


Poor practice *The unmanaged hawthorn hedges along some of the older motorways create a narrow, monotonous corridor*



Improvement *Rotational cutting or hedge trimming/laying permits views into the surrounding countryside and provides a sense of space*

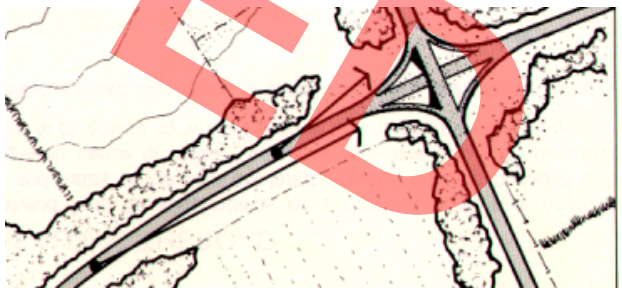
Where it is neither possible nor desirable to remove sections of roadside vegetation on an embankment or at grade, crown raising and scrub removal can create glimpses of the countryside beyond.



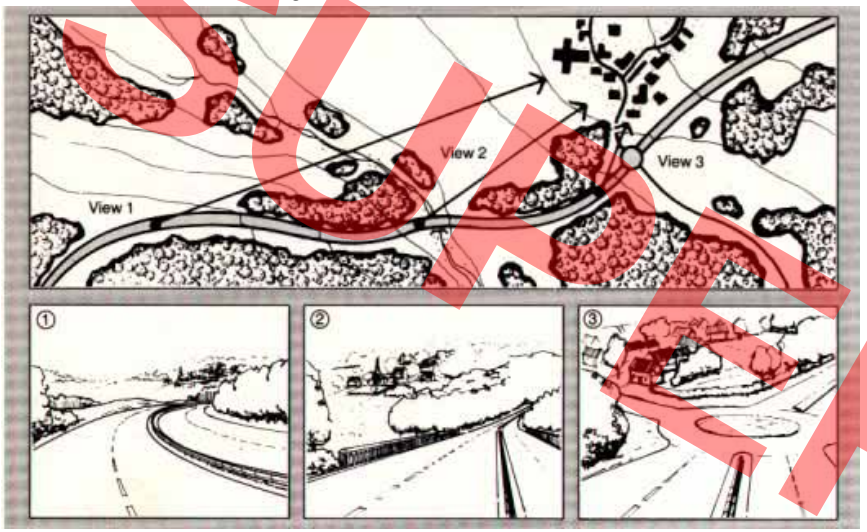
Poor practice *The continuous vegetation edge is dull and monotonous*

Improvement *Glimpses of the adjacent countryside are revealed by selective thinning and scrub removal while the road remains, for the most part, screened by the retained trees*

Improving driver awareness *Views can be opened up to provide the motorist with advanced warning that he/she is approaching a junction. The general direction of the road ahead can also be indicated to the driver by opening up a view to a distant sweep of the carriageway*



2.3 DEVELOPING A SEQUENCE OF VIEWS

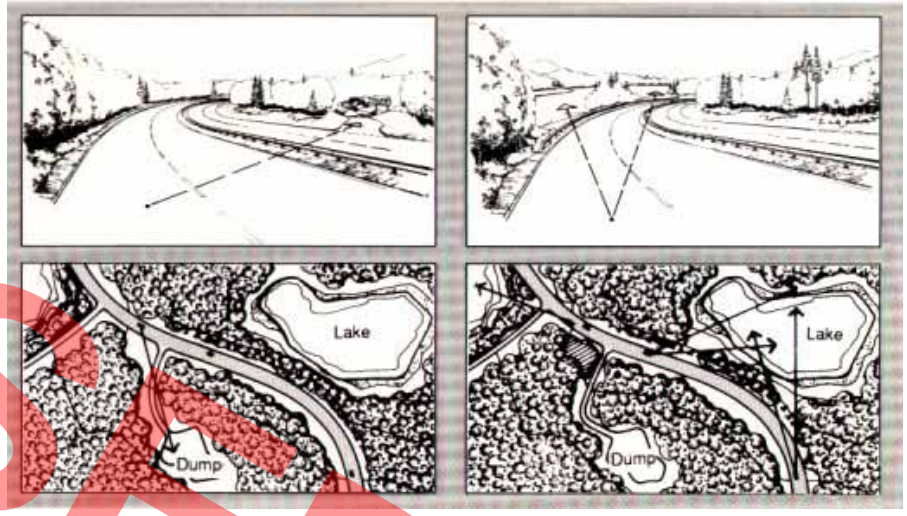


A sequence of views *to a major landmark - a church tower, for instance - helps to provide driver orientation and a sense of place. Simple roadside clearance and appropriate maintenance of open ground may be all that is needed. See also Section 1: Pt 4, Chs 12 and 13*

A34, Oxfordshire *Attractive views like this need to be maintained by vegetation management*

2.4 EXTENDING VIEWS ALONG THE ROAD

A road should not be separated from its surroundings by continuous lengths of arbitrary screening. By creating views and vistas of the adjacent landscape the driver is provided with improved orientation and a greater sense of place. The views may also focus on particular landmarks or milestones, natural or otherwise, by which the driver can measure his/her progress.



Lost opportunity *The driver's view is focused on the unsightly dump but the potential view to the lake is obscured*

Improvement *New planting on the corner screens the dump, while selective removal of vegetation within the landtake opposite creates interesting views to the lake, providing a new landmark*

Well-considered thinning *can create attractive views forward within the road corridor*

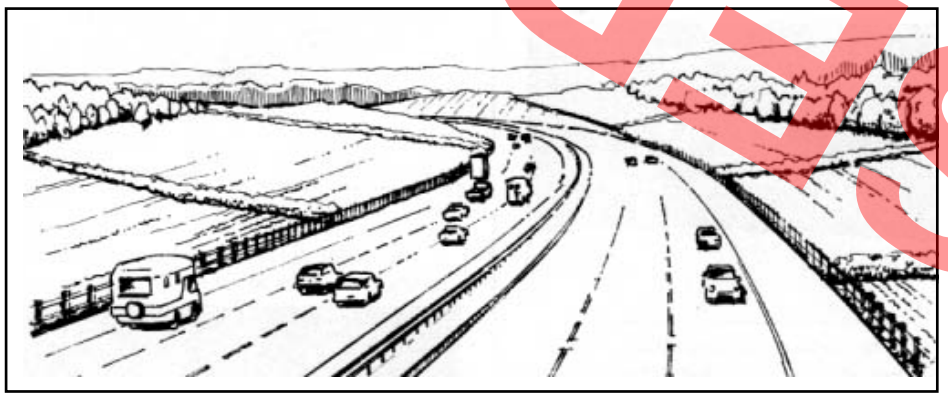
3.1 PRINCIPLE

- New planting on existing roads can follow many of the guidelines set out in Section 1: Pts 2, 3 and 4 to integrate a road with its surroundings and provide driver interest.

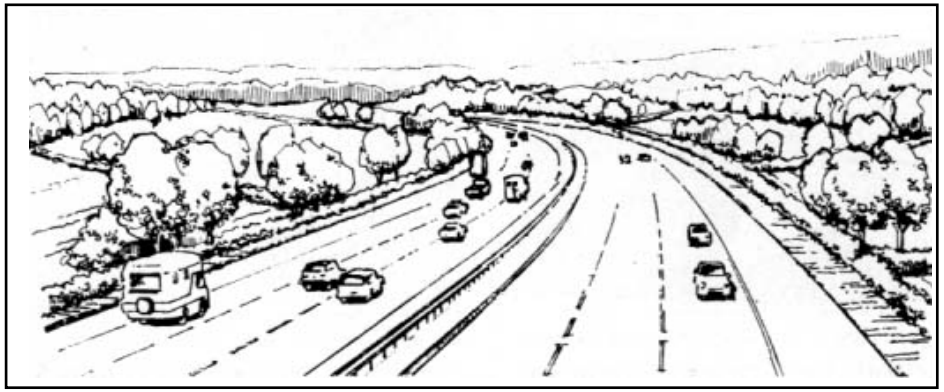
3.2 KEY ISSUES

- New planting must take account of the existing roadside vegetation which will indicate species likely to flourish and the soil conditions present. See also Section 1: Pt 2.
- Good planting design is essential: not just local enrichment. See also Section 1: Pt 7.
- Management of natural regeneration can be an alternative to new planting.

3.3 INTEGRATION

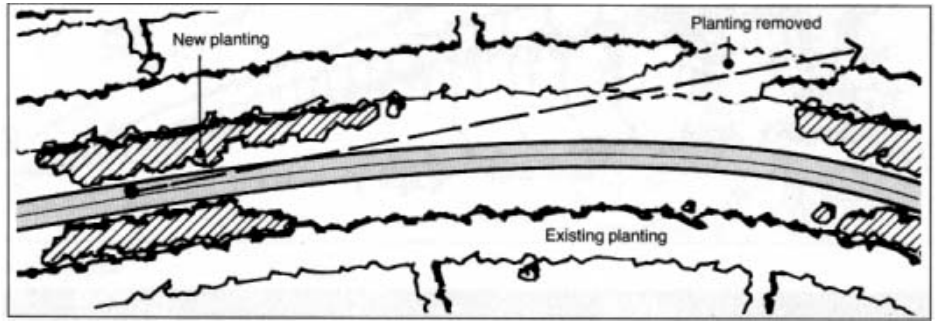


Absence of planting *makes the road prominent in the landscape*

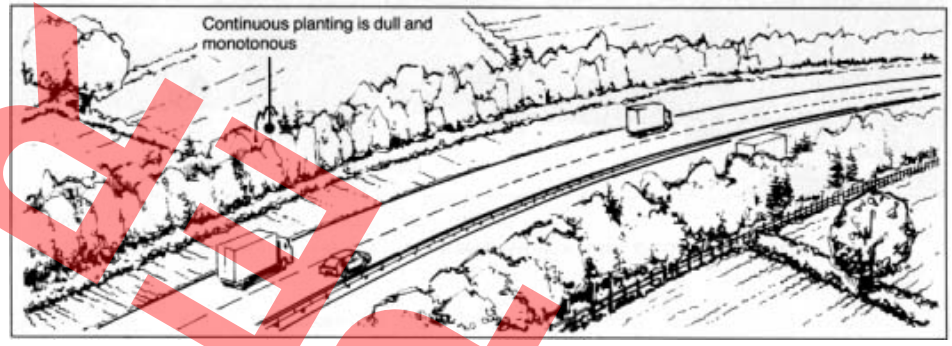


To integrate the road *with its surroundings, the principles set out in Section 1: Pts 2, 3 and 4 should be followed*

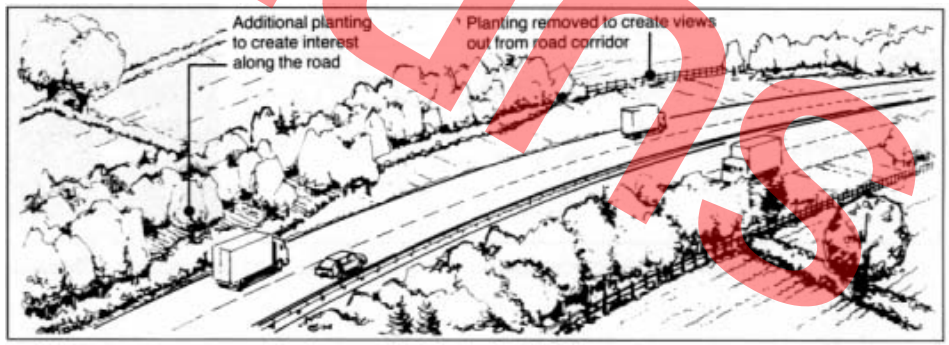
3.4 PROVIDING LANDSCAPE STRUCTURE



New planting *can be used to narrow the road corridor and provide contrast with more open areas. Combined with opening out existing vegetation, it can radically alter views from the road*

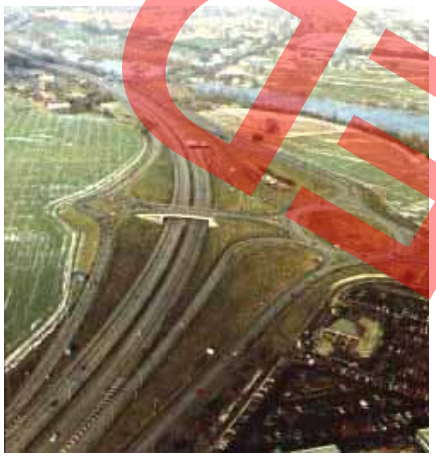


Existing monotonous vegetation

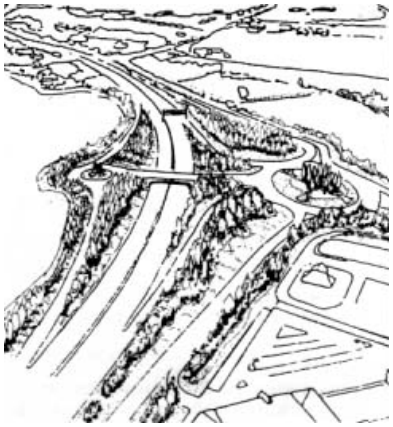


Improvement

3.5 MAJOR JUNCTIONS



Poor practice *The large junction is stark and intrusive and is not related to the adjacent landscape*

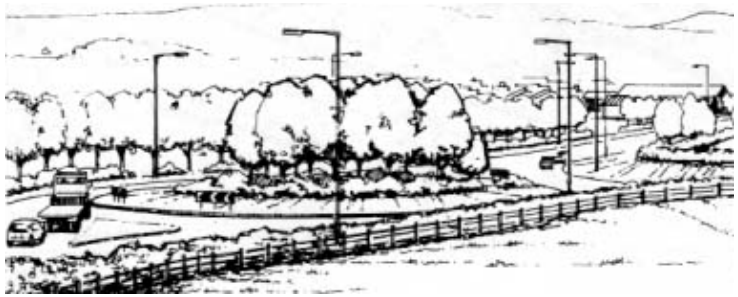


Improvement *New vegetation helps absorb the junction into the landscape and continue the planting structure of the surrounding areas*

3.6 ROUNDABOUTS AT GRADE

Working within the constraints of sight lines, careful planting at roundabouts can often help to improve landscape quality and safety.

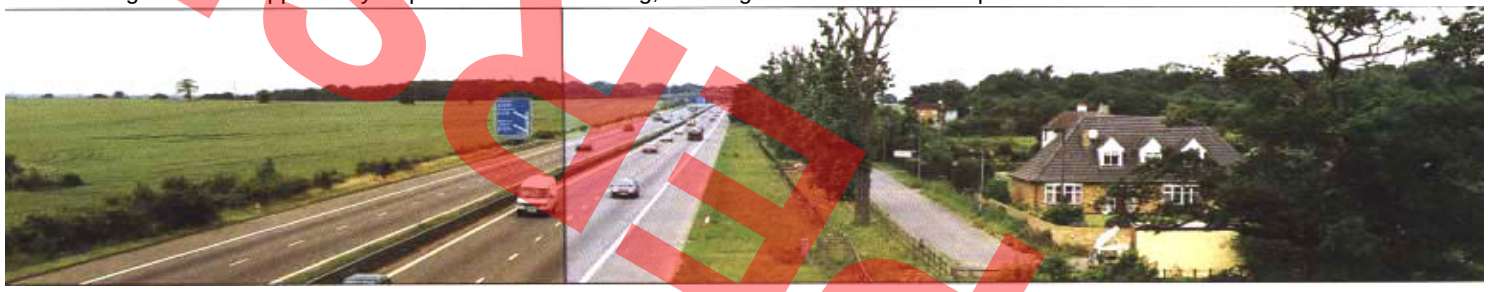
Poor Practice *Before*



Improvement *After*

3.7 REPLACING OLD VEGETATION

Here the landscape structure is dependent on a small group of mature poplars. These are short-lived trees which will be dangerous when over mature. Felling offers the opportunity to provide new screening, creating a distinctive landscape structure.



A1(M) *Inappropriate trees are a long-term management liability*

Improvement *When they become over mature or dangerous they can be replaced by long-lived trees of more appropriate form as shown*

4.1 PRINCIPLE

- Long-term maintenance strategies are needed to ensure that existing vegetation is managed effectively. Further information is given in Section 1: Parts 2 and 7.

4.2 KEY ISSUES

- Maintenance strategies should be based on the standard objectives for the different vegetation types that occur alongside roads. They reflect the management needed to ensure the healthy growth and development of the vegetation, followed by maintenance of the mature growth.
- Maintenance strategies should also be based on standard actions.
- Once the standard objectives and standard actions have been taken into account, a site-specific management plan needs to be prepared.

4.3 STANDARD OBJECTIVES

Grassland
The sward for short grass should be maintained at an optimum height of, for example, 150mm.

Where there are woody plants in grassland, a balanced mix of shrubs and/or trees should be maintained within it.

Specimen trees in grassland should be managed and invasion by other woody species prevented.

Scrub
Where this is dominated by shrubs, a closed canopy should be maintained, its spread limited and invasion by unwanted species prevented.

Woodland and high forest
Healthy and well-anchored trees should be maintained, until they are deemed unsafe, when they should be felled.

4.4 STANDARD ACTIONS

These include the periodic actions required to keep to the standard objectives, such as mowing for grassland, selective removal of unwanted species from scrub and any thinning required for woodland management.

Inspections at suitable intervals are also required. In grassland and scrub these should identify and destroy unwanted species.

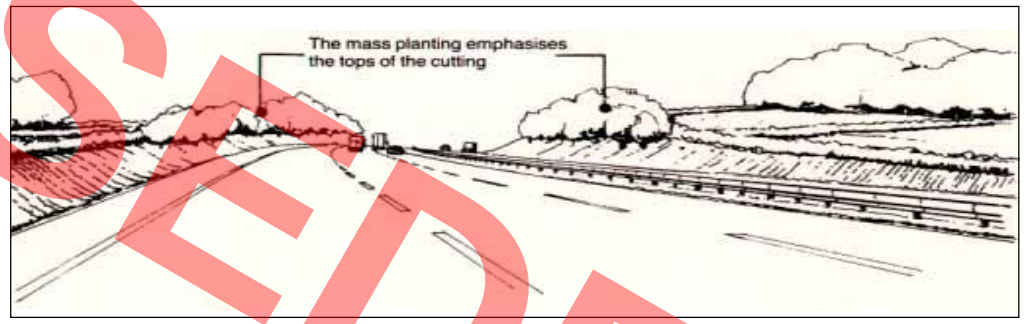
For woodland, selective removal of some trees may be necessary, particularly when they have reached a size or growth stage at which they are judged to be unsafe as roadside trees.

Tree safety inspections should be carried out for trees over 10 years old (or more frequently if this is demanded by the site conditions).

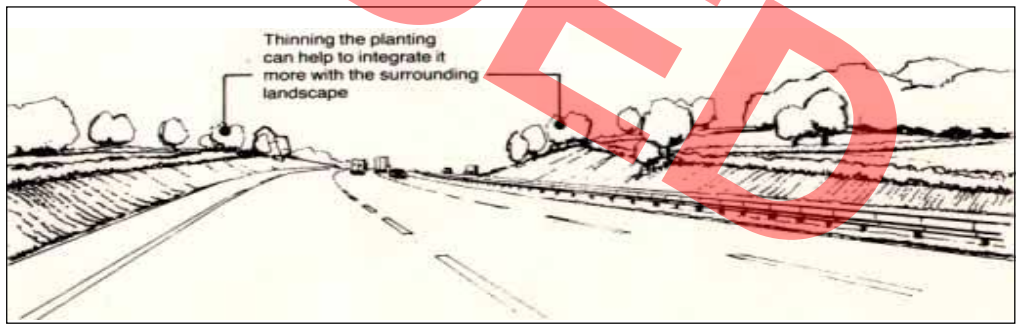
4.5 TOO MUCH PLANTING

Poor practice *In this case the planting has created an intrusion into the open, costal landscape and would be best removed*

Frequent minor cuttings with mass planting characterise many of the older motorways. They often do not integrate with the surrounding landscape and are best thinned to recognisable individual trees carrying the line of the adjacent vegetation across the road.



Poor practice



Good practice

5. ENQUIRIES

All technical enquiries or comments on this Advice Note should be sent in writing as appropriate to:-

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Environment Division
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