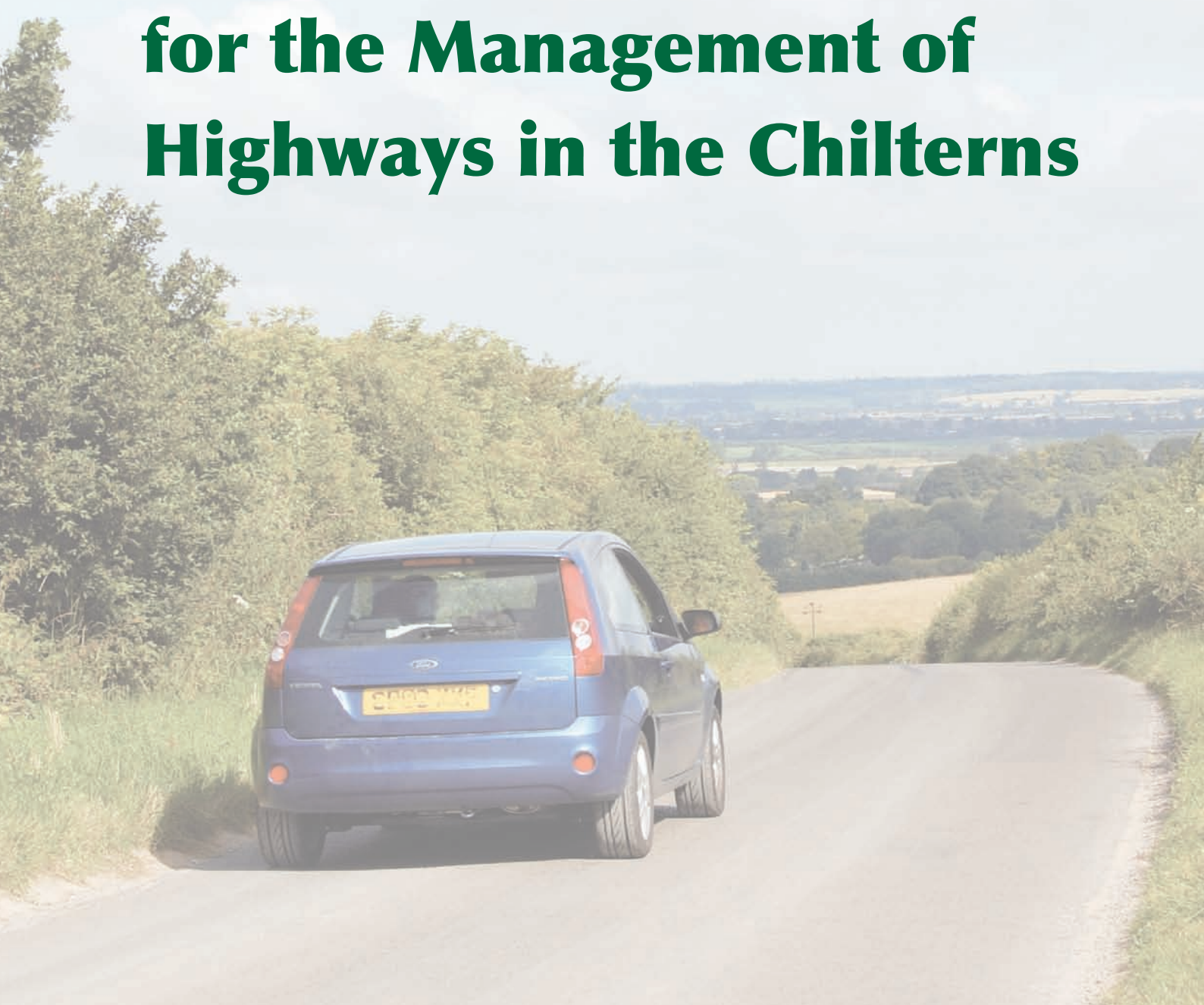




An Area of Outstanding Natural Beauty

Environmental Guidelines for the Management of Highways in the Chilterns



Bedfordshire
county council



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Foreword

The Chilterns beauty lies in the mosaic of woodlands, downs, fields, farms and villages. Overlain is a complex network of routes, ancient and modern, which today survive as roads and public rights of way. The Icknield Way, possibly the oldest route in England, survives as a public highway and much of it is designated as the Ridgeway National Trail. It is a network which, for the most part, is part of the landscape rather than an imposition upon the landscape.

Undoubtedly there is concern that the environmental impact of modern roads and the way they are managed is not always sympathetic to the Chilterns special landscape. And yet so many of our rural lanes are part of that valued landscape with a rich character of their own. The challenge is to retain that specialness whilst ensuring that modern roads are designed and maintained to respect the environmental quality of the Chilterns countryside, towns and villages.

In so doing they must provide a convenient and safe network for travellers. This guidance seeks to achieve those goals.

The true test of the effectiveness of any guidance is how well it is applied. That is why it is so important that this guidance is jointly published by the Conservation Board and highway authorities in Bedfordshire, Buckinghamshire, Hertfordshire and Oxfordshire. They recognise the Chilterns is a valued landscape of national importance and that this guidance will help them give regard to the special qualities of the Area of Outstanding Natural Beauty, as legislation requires and local communities expect.



Sir John Johnson
Chairman
Chilterns Conservation Board



Bedfordshire
county council



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Section One:

Introduction and Background

Why these guidelines are needed

1. The Chilterns was designated as an Area of Outstanding Natural Beauty (AONB) in 1965 and covers 833 sq. km. It has some of the finest landscape in the country and its designation is intended to ensure that all aspects of natural beauty are conserved and enhanced. This includes the landscape, flora and fauna, geology, the built environment and all those elements which contribute to rural character.
2. This means that there is a requirement to promote management practices which conserve and enhance those special qualities and recognised character. Guidelines for the management of roads in the Chilterns were first adopted in 1998 and

have helped to raise awareness of the key issues. This edition provides updated guidance and also covers the design of new roads, which was not included in the earlier edition.

3. This version has been able to draw upon the statutory AONB Management Plan and highway authority five year Local Transport Plans, which have been introduced in recent years. These guidelines do not replace or change policies and strategies in these documents but should be seen as complementary. The majority of roads within the AONB are managed by the local highway authorities whilst the strategic network, such as the M40 and M1, are managed by the Highways Agency. These guidelines are designed to be used by both.



The Ridgeway: From Ancient Route to National Trail

4. The national importance of the Chilterns' landscape means that it should be protected from inappropriate change. These guidelines recognise the challenges faced by local highway authorities but is intended to assist them to:

- Conserve and enhance the special qualities and character of the Chilterns AONB.
- Provide safe and efficient highway and transport networks for residents, businesses and visitors.
- Promote sustainable forms of transport.
- Protect the countryside, towns and villages from the potentially damaging effects of development, including transportation infrastructure and the effects of traffic, sometimes generated outside the Chilterns.

5. The road network in the Chilterns has developed over millennia. Pre-historic trackways such as the Icknield Way (Ridgeway) and Roman roads such as the A5 (Watling Street) are well documented. Many other roads have ancient origins, for example the holloways which incise the scarp face and valley sides. Others have surviving Saxon names (Arrewig Lane near Great Missenden) and the routes of many were established many hundreds of years ago.

6. The last few years have seen a greater appreciation of the needs of road users other than vehicle users. The Chilterns is prime walking territory, and has a network of rights of way at least as extensive as the roads themselves. The level of horse ownership in the Chilterns is high and growing and the popularity of cycling for

leisure is also increasing. This is all compounded by encouragement to keep fit by taking exercise and for children to walk and cycle to school. The concept of designated Quiet Lanes has been explored in recent years and guidance on their designation is provided by the Department for Transport.

7. Many people live, work in and visit the Chilterns to seek peace and quiet and a high quality environment. The Chilterns has many tranquil areas but there are areas where noise pollution is an issue, with vehicle noise from motorways, bypasses and other major roads. There is also considerable noise generated by railways and air traffic from airports with close proximity to the AONB such as Heathrow and Luton and from the many light aircraft movements from smaller airfields and the use of air tugs by gliders.

8. In 2000, the Countryside and Rights of Way Act allowed the formation of Conservation Boards for AONBs, and in 2005 the Chilterns Conservation Board was formally established as the statutory body to protect and enhance the Chilterns AONB. The Act also includes the following duty:

'S.85 In exercising or performing any functions in relation to, or so as to affect, land in an area of outstanding natural beauty, a relevant authority shall have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty.'

9. This duty applies to all those who have a responsibility for the highway network and must always be borne in mind when carrying out any work within the AONB. The value of these guidelines is that it will

help those bodies affected by this duty to ensure that they 'have regard' for the AONB. It will also help the public judge whether sufficient weight has been given to the exercise of this duty.

10. Biodiversity is receiving increasing recognition in legislation and in public opinion, particularly where it relates to climate change, degradation of the environment and quality of life issues. Public authorities, including the Conservation Board, highway authorities and statutory undertakers, have legal obligations towards conserving biodiversity. Biodiversity Action Plans include roadside habitats such as verges and hedges, and some species, which survive in these habitats are of sufficient importance to have Species Action Plans.
11. There are many environmental factors to take into account when planning any works, whether minor or major. The cumulative impact of even seemingly small, piecemeal highway works can have a significant detrimental impact on the biodiversity, local landscape and natural beauty of the area. An example is the accumulation of 'roadside clutter' when even minor works should represent an opportunity to rationalise clutter, bringing about improvements to the visual quality of the Chilterns.
12. These guidelines have no legal force but their implementation will go towards meeting a variety of legislative requirements and their preparation ensures that the Conservation Board is meeting its statutory obligation to prepare an AONB Management Plan under the Countryside and Rights of Way Act 2000.

13. The aims set out in the current AONB Management Plan, adopted by all 15 local authorities in which the Chilterns lie include:

- Conserve and enhance the outstanding qualities of the AONB as part of the national landscape heritage.
- Maintain those features, which make an essential contribution to the character and quality of the area and to regional and local distinctiveness.
- Use such characteristics to guide future positive change in the landscape to reinforce regional and local identity.
- Enhance and restore degraded landscape and features.
- Conserve and enhance the rural character of the AONB, whilst ensuring safer access for travellers to and within the area.
- Enhance the quality of the environment for local communities and visitors by reducing the impact of vehicle traffic on rural roads, and within towns and villages.
- Promote the importance of conserving the Chilterns AONB in the development and operation of regional and national transport systems.
- Protect the special landscape and other environmental qualities of the AONB from the damaging impacts of transportation developments and highway improvement schemes.

14. By following these guidelines, highway authorities, the Highways Agency and statutory undertakers will be fulfilling their

obligations under the Act and contributing to the aims of the AONB Management Plan.



How to use these guidelines

15. When carrying out highway work in the Chilterns, highway authorities and statutory undertakers are required to ensure that it is undertaken to a standard, which meets safety, technical and environmental requirements. Landowners too are encouraged to adopt this approach. These guidelines do not change those requirements but are intended to help all those who work on the highway to achieve those standards but at the same time to consider the impact on the AONB.
16. These guidelines recommend procedures and bring together important and relevant information for all those who have a role in promoting, designing, financing, and implementing highway work in rural areas and represent best practice as identified from work nationally as well as locally.
17. These guidelines should be considered as part of the management of the highway infrastructure and should be applied to standards and design issues for managing and providing for transport movements in

the countryside. They should also be considered for individual engineering works, for the general maintenance programme and for specifying contracts within the Chilterns.

18. These guidelines are for all organisations with an interest in the highway network, as a provider, user or having a requirement to work on the highway. They apply to the highway authorities, any parish, town and district councils, landowners and land managers, environmental organisations, contractors and statutory undertakers who are involved in highways works.



Section Two:

Guiding Principles

There are a number of over-arching or guiding principles, which should guide the design of all highway works within the AONB and should be borne in mind throughout and when considering these guidelines:

Unless there is an overriding safety issue, do as little as possible

1. Part of the attraction of the Chilterns is the network of ancient lanes and holloways, especially those on steep valley sides and the escarpment. The informality and apparent 'naturalness' of these roads is fundamental to their appeal. Any sort of engineering feature, even white lines, detracts from their 'fit' into the landscape.
2. Whilst one of the objectives of these guidelines is to minimise the intrusiveness of management practices there will always be a need for a basic level of maintenance. However, even the impact of small works should not be underestimated and minimal intervention is generally more appropriate.
3. The special rural character of a section of road can often depend upon small features, and changes to these can greatly alter perceptions of the area. The cumulative effect of these small works should be recognised. This may require a longer term view as each successive period of work may be several years apart. Examples include the installation of kerbs, the replacement of a hedge with wire fencing, the use of concrete rather than timber posts and the erection of street lights.



Lane along Bledlow Ridge

4. Where possible, ensure that the road belongs in the landscape rather than imposes upon it. A problem throughout the countryside adjacent to urban areas is the temptation to over-tidy. Nature is not tidy and uniform, and consequently any engineering structure in rural areas must blend into its landscape setting. For example, this means soft edges to verges are more acceptable along roads in the countryside, and trees immediately adjacent to the highway are commonplace, even expected. Bright colours are visually intrusive, and geometric shapes and straight lines can look out of place.
5. The removal of unnecessary street furniture should be undertaken whenever possible. Street lights, signposts and lines that no longer serve a purpose should be removed rather than just being left to decay over time.

A highway network for all users

6. From motorways to footpaths and everything in between, they are all highways in law. As such, they enjoy the same level of legal protection. Descriptions of hierarchies of routes relate only to the importance of the route by volume of traffic, its local, regional or national importance and to the maintenance regime applied to that route. Whatever the classification of a road, it has no higher legal status than an un-sealed rural footpath. Similarly, the law does not differentiate between different classes of user; roads other than motorways are available for motorists, cyclists, horse riders and walkers equally in law if not in practice.
7. Traditional highway management has focussed on motor traffic on all roads, reflecting the bulk of their use, however, this

should not be at the expense of road users on foot, in wheelchairs, on bicycles or on horseback. With the future increase in sustainable transport options, encouraging healthier lifestyles, increasing social inclusion and improving the amenity of the AONB, the needs of these other users must be given priority over the convenience of the users of motor vehicles. An initial process in planning any highway work must be to assess the current and potential use of the road and verge by walkers, riders and cyclists, as well as drivers so that proper consideration can be given to all highway users.

8. Those managing and working on the highway should aim to create or maintain connections. Concentrating on the convenience of some users can create barriers for others. Non-motorised users can have their networks severed, for example,



Chilterns lanes provide a network of routes for all users

by inconsiderate 'improvements' which speed up traffic flow, or carriageway widening that reduces the availability of the verge.

Consider the whole highway

9. The highway network is also an ecological network of hedgerows, trees, watercourses and verges and should be managed as such. A "Net Gain Principle" should be adopted so that any newly built or improved route for motorised traffic should also benefit the non-motorised route network. Verges are part of the highway and the public is entitled to use them. For horse riders and walkers they can be an important refuge or the only part of the highway that can be safely used. Work should not be carried out which makes them inaccessible. Care will be needed with, for example, siting of drainage grips, traffic signs and village 'gateways'.

Materials and use of local goods or services

10. When travelling along a road, the road surface forms about one quarter of the view. The road surface can add to the attractiveness of a route or a village, and should reinforce local character. A wide range of different surfacing materials and colours are now available but local traditions should be followed and locally sourced materials should be used where possible. Nationally sourced "heritage" materials, for example granite setts or clay paviours, will not necessarily be the right choice for villages where rammed earth and stone was traditionally the most common road surface. A simple bitumen surface may actually be closer to the original.



Local character retained by minimal intervention

11. Historically roads, pavements and structures such as fences and walls were built using the materials most readily available. This would have naturally meant that local materials would have been used to create the highway environment and contributed to establishing the individual character of a village or place.
12. Important old materials are not only attractive but are also of historic significance and are often more sustainable than the modern equivalent and should be retained or re-laid in the same location. If this is impossible then, where practicable, such materials should be stored for re-use within the locality. When repairing, replacing or altering the highway it is important that wherever possible local materials are used in order to preserve the heritage of an area.
13. For posts, fences and appropriate structures, timber should be used in preference to concrete or metal. The timber should be locally grown from a sustainably managed source and un-stained.
14. In addition to preserving the heritage of an area, the consumption and use of locally

produced materials and other goods reduces the amount of pollution and congestion created by long distance transport. In general, highway authorities and contractors should:

- Use local suppliers and services where possible, taking into account any local procurement policy.
 - Keep a list of local suppliers, and encourage staff to use it.
 - Look at forming supply chains with local businesses.
 - Actively publicise when local goods have been successfully used in a scheme.
15. The use of brick and flint should be in accordance with other Chilterns Design Guides.

Consider any relevant national legislation or guidance

16. European and national legislation has designated some parts of the Chilterns as areas of special ecological and geological value. These areas can be within, adjacent to or near to the highway network. The EU Habitats Directive (92/43/EEC) has identified Special Areas of Conservation (SAC), whilst the Wildlife and Countryside Act 1981 has designated Sites of Special Scientific Interest.
17. Additionally, local authorities have designated Local Wildlife Sites and local geological societies have identified Regionally Important Geological Sites which, whilst both having no legal basis, are recognised as having a regional and / or local significance in regional and local planning documents. Some counties have

also designated Roadside Nature Reserves. Other sites, managed by the National Trust, the Wildlife Trust and others also have recognised value.

18. Such designated areas should be considered in highway management, with requirements for the conservation of sites covered by legislation having the greatest weight. For Special Areas of Conservation, the Habitats Directive requires an Appropriate Assessment to be undertaken to assess the impacts of a land-use plan against the conservation objectives of a European site and to ascertain whether it would adversely affect the integrity of that site.
19. Public authorities also have a duty to conserve Sites of Special Scientific Interest in accordance with the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000). The duty is to take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest.
20. The Natural Environment and Rural Communities Act 2006 requires that biodiversity is conserved by public authorities where it is consistent with their functions. Neglecting to recognise and adapt highway management to conserve these sites where possible would be a failure of the duty introduced by the Act.
21. Any highway work that may remove or destroy a hedgerow should be in accordance with the Hedgerow Protection Regulations 1997. Individual highway trees or woodland in the highway may be

covered by a Tree Preservation Order and there are legislative requirements applicable to any work carried out upon these trees. Advice and permission should be sought from the local planning authority.

22. Local Transport Plans (LTPs) are prepared by the relevant highway authority that is responsible for maintaining and managing the highway network within the AONB. They contain vision statements, strategies and specific proposals. The following is an extract from the Buckinghamshire Local Transport Plan. Its aims are typical of the plans for Hertfordshire, Oxfordshire and Bedfordshire. The vision is to:

- Enhance access
- Tackle congestion.
- Improve our environment.
- Improve road safety.
- Manage and maintain the transport asset.



Striped lychnis larvae on mullien plants, a species identified for action within the Buckinghamshire Biodiversity Action Plan

Funding issues

23. In general, minimising the works undertaken and seeking to reduce their impact is likely to be less costly. There will be occasions when individual works require special treatment above that which might otherwise be considered as standard. In such circumstances it should be remembered that, overall, the implementation of these guidelines is likely to require fewer resources.

Safety considerations

24. When tackling a safety issue there is often more than one solution. Innovative thinking should lead to the design of a scheme that improves safety whilst conserving or even enhancing the surrounding environment. There are many environmentally friendly alternatives available so every effort should be made to use them.
25. These guidelines are designed to be adhered to whenever possible but it is acknowledged that in some circumstances there will be safety issues that require work to be carried out that does not comply with these guidelines. For example, a poor collision history at a junction may mean that additional signing, lining and lighting needs to be installed. In these situations, safety has to be the higher priority but options to minimise the environmental impacts should be implemented.

Consultation undertaken

26. In preparing these guidelines, the highway authorities and the Chilterns Conservation Board have consulted widely including a period of public consultation.

27. The general public living in or visiting the Chilterns AONB is invariably interested in change and new development, therefore as and when works are planned within the AONB further consultation should be carried out.
28. Consultation gives the public an opportunity to be involved in the process and can identify any major difficulties before the work is undertaken. The extent and timing of public consultations should be commensurate with the nature, size and sensitivity of any works.

Climate change

29. The climate of the Earth is always changing. In the past it has altered as a result of natural causes. Currently, however, the term climate change is generally used when referring to changes in our climate which have been identified since the early part of the 1900's. The changes seen over recent years and those which are predicted over the next 80 years, are mainly as a result of human behaviour rather than due to natural changes in the atmosphere.
30. An increase in the number and intensity of storms is predicted. This will have, and has had, an effect on drainage systems. Improved storm drainage capacity and regular maintenance including the removal of storm debris is needed to prevent the erosion of carriageways and verges.
31. Transportation and the production of materials used in highway construction play a major part in this. This places a responsibility on all organisations such as highway authorities and local residents to mitigate the causes such as the emission of carbon dioxide. It will also require

adaptation of our behaviour to cope with those changes by encouraging modal shift to walking and cycling together with bus and rail use.

32. Transport generated emissions are one of the main sources of carbon dioxide. The construction of roads and the operation of the highway network is also a major issue. For example, the energy required to power street lights, illuminate roads signs, traffic lights and bollards is considerable. The materials required to construct roads is also a contributory factor. The energy needed to make and transport concrete is significant, as is that for manufacturing the metal needed for road signs.
33. These guidelines recommend that for all works, consideration is given to the impact on the climate, principally through the energy demand and potential carbon footprint. Whenever possible proposals that require less energy and have a smaller carbon footprint should be favoured.



Extreme weather events will increasingly affect all roads and road users

34. Opportunities should be identified and taken to reduce the existing energy demand, for example by switching off and removing street lights, replacing illuminated road signs with retro-reflective signs and using solar powered road studs as an alternative to lighting. When considering these options against more conventional methods it is important to consider the “whole life cost”.

Carbon management

35. While energy efficiency offers cost savings, it is also a requirement of numerous local and central government initiatives such as best value performance indicators and Carbon Management Action Plans supported by the Carbon Trust. The criteria for community strategies and local strategic partnerships include energy efficiency. Sustainability in general is high on the agenda of local authorities and their elected members. Energy efficiency is a readily achievable way to demonstrate concern for sustainability. For local authorities the key energy issues are to:

- Reduce demand for energy.
- Improve energy efficiency.
- Create a culture of energy efficiency in the organisation and by local communities and residents.
- Reduce carbon emissions by switching to renewable energy sources.
- Develop strategies and techniques to reduce future demand for energy.
- Use procurement policies to minimise carbon emissions.

36. The main area for carbon management within the highway environment is lighting. Installing more efficient systems with good

controls can often halve existing lighting costs but even good practice and maintenance of existing systems can often provide lighting energy savings.

Renewable energy

37. The options for wind and solar powered signs have increased in recent years as the technology has developed. Also whilst their energy efficiency may bring benefits, this may be outweighed by the effect they have on a particular landscape or view and therefore must be carefully considered and consulted upon locally.

Noise pollution

38. Many areas, including in the AONB is now affected by traffic noise. There are three main contributors to the level of noise experienced: volume of traffic, speed of traffic and the number of Heavy Goods Vehicles (HGVs).
39. Traffic volume reduction and some forms of traffic calming have important parts to play in reducing noise. Reducing speeds by 20mph can reduce noise by around 5 decibels – equivalent to reducing traffic volumes by about 50%. Tyre noise is the main source of noise when vehicles exceed 20-30mph.
40. Noise reduction or containment is best achieved through control of speed and traffic volume. In sensitive locations, low-noise surfacing should be used. The use of Stone Mastic Asphalt (SMA) is proven to reduce the level of road noise produced by vehicles.
41. Barriers can reduce noise over short distances, but they need to be solid and several metres high. 6ft close-boarded

fencing can have a negligible effect but can be visually intrusive and damaging. Barriers often have very little effect after a short distance from the road. Wind and atmospheric conditions can negate any local benefit for those further away. Barriers, where used, should be carefully landscaped and planted up with trees and shrubs native to the Chilterns.

Light pollution

42. The Chilterns, like the rest of southern England, suffers from light pollution at varying levels. Aside from the unnecessary use of energy, the light itself is a form of pollution, for example masking the night sky. The lighting structures such as columns, bollards and illuminated signs, are themselves often unsightly and an urbanising feature. These guidelines seek to minimise the level of light pollution and the intrusion of the lighting infrastructure.



Light pollution has been created by excessive lighting of the roundabout and cycleway

43. Where light is needed or illumination is required by regulations, it is essential that it is directed only to those areas which need it. It should be designed to use good quality equipment giving even light distribution and minimum light pollution. Further guidance on the provision of lighting is given later in these guidelines.

Air Quality

44. Traffic and transport causes one third of all carbon dioxide emissions, and makes a major contribution to poor air quality across the country. The general air quality within and around the AONB is good but there are localised hotspots where air quality is poor and will continue to suffer from the increasing rise in traffic. It will not only affect the AONB but will also have an adverse effect on the social and economic aspects of the area.

45. The 'National Air Quality Strategy' was developed in response to the Environment Act 1995 which sets out policies for improving and protecting ambient air quality to protect people's health and the environment. The Strategy requires all District Councils to review air quality in their areas (including major and minor roads) and assess whether air quality standards and objectives will be met by certain dates. Where it appears that standards are not being met, or are unlikely to be achieved in time, the District Council concerned must declare Air Quality Management Areas (AQMA) and produce Action Plans designed, where possible, with the aim of reducing air pollution and achieving the prescribed air quality standards.

46. Improving air quality within and around the AONB is one of the most important elements in improving environmental health. It can be achieved by:

- Reducing the effects of road traffic emissions by considering demand management measures, integrating land use and transport planning.
- Meeting air quality standards through partnership working by developing action plans with District Council partners to address declared AQMA's, sharing data to shape future actions, and co-ordinating air quality activities.
- Encouraging cleaner fuels by investigating the availability and use of clean fuel vehicles.
- Reducing the need to travel by ensuring that rural services and facilities are in appropriate locations.
- Maintaining the footways and rights of way in rural areas to improve access by walking and cycling to specific facilities and for leisure and recreation.



Temporary monitoring station installed as part of a programme to improve air quality in an AQMA

- Provision of new footway links in existing settlements and new developments outside of villages to reduce the dependency on cars for short distance travel.
- Enhancing tree cover near to but at safe distance from the carriageway.

Section Three:

The Guidelines

New development

1. Policies in existing Structure or Local Plans and their successors are likely to mean that new development in the AONB will be very limited. When the need for new development has been thoroughly assessed and approved, the design of the new development should conserve and enhance the locally distinctive, aesthetic and ecological qualities of the area. Infilling and brownfield site development may increase traffic appreciably on nearby roads and streets, and sensitivity should be exercised in any adaptation of these highways to accommodate the extra traffic.
2. The LTP covering an area where new development is to take place should be used to plan transport routes to maximise walking, cycling and the use of public transport.
3. The Local Planning Authority will advise on detailed requirements for any new development but developers should work closely with all concerned to ensure that new layouts and associated highway works respect the existing characteristics of the area and minimise future maintenance requirements.
4. Where new roads, footways or cycleways are to be provided as part of any new development, opportunities to also enhance, restore or create habitat within or outside the development area should be sought. Any woodland or other habitat planting schemes should use locally sourced materials and species.



A typical Chilterns street scene - Wendover High Street

5. The requirement for new lighting should be carefully considered and should take account of any other lighting in the area. Where it is agreed that lighting is required for amenity, road or community safety purposes, care should be taken not to urbanise the area by the introduction of unsuitable lighting. The use of small, low energy lighting units can be less visually intrusive than standard lighting units and columns.

Highway boundaries and structures

Hedges ~ trimming, laying, coppicing, planting

6. Roadside hedges are a distinctive feature of most roads and their management usually rests with the landowner. In the Chilterns, many hedges are ancient and of considerable landscape and ecological importance.
7. The landscape and ecological value of many hedges is damaged by over cutting. The timing and severity of flailing can significantly affect the appearance of the hedge, and its importance as a habitat and food source for wildlife. Local Biodiversity Action Plans recognise all hedges as a



A traditionally laid hedge

8. Hedgerows should not be cut during the nesting season (late February to late August). The roadside of the hedge should be cut, usually once a year between November and early February. The top of the hedge should be cut on a two-year rotation, usually in January and early February. This will avoid removing sources of food (berries) for wildlife during the winter months. More regular cutting or maintenance may be required alongside heavily trafficked roads, verges and footpaths and where necessary for safety reasons.
9. Ideally a hedge should be wider at the base than the top. Consideration should be given to using a circular or other appropriate saw, especially for older, thicker material.
10. Hedgerow trimmings should not be left on the carriageway. They can be a particular hazard for cyclists.
11. A traditional form of hedge management used to prevent the movement of stock is to lay a hedge. This entails the complete rejuvenation of the hedge by cutting the main stems close to ground level and laying them over. A dense barrier will be formed into which re-growth will develop.
12. For some hedges, laying should be considered as a practical means of reducing the hedge size and rejuvenating the growth of many hedge species. This is a practical option for some hedges of high quality for several hundred metres. Longer lengths are unlikely to be practical unless tackled over several years. There are regional styles for hedge laying and these should be considered.

13. Some roadside 'hedges' more closely resemble woodland edge, and may never have been managed as a hedge. This type of scrub should be coppiced on a regular cycle of 3 to 10 years. This entails the rejuvenation of hedges with stems too thick to lay successfully. The main stems will be cut completely to ground level and re-growth will sprout from the cut stems.
14. Where part of a hedge has been damaged or removed it should be replanted with the same species, usually hawthorn, beech, hazel, blackthorn, hornbeam, holly and field maple. Native species should always be used in preference to exotic species, unless there are exceptional circumstances, for example a long established ornamental hedge.
15. Any natural regeneration should be encouraged and subsequently coppiced or laid as suggested above.
16. New hedges should be planted to replace lost hedges or to enhance the landscape affected by agricultural operations and/or development. Roadside planting that can help decelerate a wayward vehicle gently can contribute to the creation of a forgiving roadside, but trees that will grow to form rigid obstacles should not be planted within about 2m of the roadside. These hedges should be of the same species commonly found in the locality (usually hawthorn, beech, hazel and blackthorn).

Trees ~ pruning, felling, planting

17. A characteristic of the Chilterns is the density of woodland and prominence of roadside and hedgerow trees. Wherever possible this nationally recognisable landscape feature should be retained and actively conserved in accordance with any

locally agreed tree policy. There is potential for trees to contain bat roosts and as the law protects bats and their roosts, special consideration is needed where trees are to be felled, pollarded or pruned.

18. Arboricultural advice including long term management implications, should be sought prior to undertaking pollarding or pruning. Pruning should be undertaken only if required for safety reasons. Pollarding is a traditional practice for some species such as willow, lime or plane, and in particular locations, such as roadside trees.
19. 'Woodland tunnels' created by overhanging trees should be managed sympathetically, with limited tree pruning only for safety reasons.



Roadside trees are an important feature of the landscape

20. Felling of any tree should be on the advice of an arboriculturist and should be regarded as a last resort measure. It should be felled only if it is diseased or damaged and constitutes a safety risk, which requires felling of the tree, rather than limited tree surgery. Age itself is not a reason for felling, unless it also constitutes a safety risk for the above reasons. Before the decision is taken

to fell, options to reduce the safety risk by other means must be considered.

21. Felling may be advisable if the species is inappropriate for the location i.e. causing unacceptable damage to nearby structures.
22. When a tree has been felled because it was diseased or damaged, it should be replaced with the same species, or an appropriate locally occurring native species. Usually the tree should be planted adjacent to the stump of the felled tree. If the tree was felled because it was dangerous by virtue of its location, a replacement should be planted at an acceptable nearby location. If the stump is not considered to be dangerous it should be left in situ.
23. Trees immediately adjacent to the highway are a feature of the Chilterns, but in some situations can represent a safety hazard. Where the landscape has been degraded, consideration should be given to new roadside planting to enhance the character of that part of the AONB.
24. New planting proposals should be based on safety considerations and the existing or adjacent roadside landscape pattern. In particular, this is likely to determine the distance of new planting from the carriageway.
25. Planting up to within 2 metres of the roadside should be possible if this is a typical characteristic of the local roads, which is the case across most of the Chilterns. Planting is likely to be closer to the carriageway on minor roads and where there is a lower speed limit (40 mph or less)
26. New planting should be incorporated as part of a road scheme, rather than considered as

post-works landscaping, and should take into account the existing habitat.

27. Where the road is 'sunken' below the level of adjacent land, new planting may be considered close to the carriageway.
28. Where works may seriously damage roadside trees and hedges, all trenches should be hand dug. BS5837:2005 'Trees in relation to construction' applies to all forms of construction. An arboriculturist should carry out a survey and an arboricultural method statement should determine the works to be carried out and the protection and mitigation measures to be undertaken. Reference should also be made to the National Joint Utilities Group, NJUG 10 – Guidelines for the planning, installation and maintenance of utility services in proximity to trees.

Verges

29. Verge widths tend to vary in the Chilterns, but are generally narrow. In the characteristic sunken lanes and holloways the verge is often reduced to a steep embankment.



A well managed verge creates good habitat for wildlife

30. The character of adjacent land can provide a guide when deciding how to manage the verge. For example if adjacent land supports chalk grassland, verge management should reflect this habitat type rather than planting a hedge or allowing scrub to develop.
31. Many road verges if not identified as being in the ownership of the highway authority may be either common land or remnant manorial waste. Before any works take place, which may significantly affect the nature of the verge or its area, its status should be determined.
32. Horse riders and walkers use many verges. This function should be given full weight when any works are proposed and in restoration and management of the verge. Where it is likely that a verge is used to link two Rights of Way the verge should be managed to ease its use by walkers and riders.
33. The nature conservation value of road verges is now recognised nationally. The Department for Environment, Food and Rural Affairs (DEFRA), Natural England, County Councils and local Wildlife Trusts all produce a range of technical guidance notes. They are based on managing the verge for wildlife, often managing it as a meadow. An assessment of cutting regimes and use of pesticides and herbicides is required to ensure the wildlife value is conserved and potential realised.
34. Rural road verges can provide valuable habitats supplying food and shelter for wildlife. Many of our mammals, birds, butterflies and other animals have been recorded as breeding on verges. All road verges are capable of being managed to encourage wildlife. The occasional mowing of a verge mimics the impact of grazing



Careful siting of bollards to prevent over running and aid hedge recovery

animals, which usually encourages a profusion of wildflowers in the spring and early summer in particular.

35. To maintain these habitats some roadside verges have been identified as being of particular importance for nature conservation, and within the AONB certain areas have been designated as Roadside Verge Nature Reserves (RVNR). Statutory undertakers should avoid locating services in these areas.
36. Each of these sites has an individual management schedule, which specifies the cutting regime and post-cutting practices, such as removal of cuttings to prevent nutrient enrichment. When carrying out works in the vicinity of an RVNR extra care should be taken in the planning of the works to ensure that the verges are not damaged and extra supervision may be required. In the case that damaging the verge is unavoidable during the course of the work then the relevant highway authority should be contacted for advice on the most suitable time of year for the work and ensuring that proper reinstatement is carried out.

37. Several agencies have an interest in the nature conservation value of roadside verges. These include county, district, borough, town and parish councils, wildlife trusts and other environmental groups. Survey and monitoring work could be undertaken by a combination of organisations depending upon the area. It is likely that a local authority will be involved.
38. RVNR should be given protection and the appropriate management prescribed. This should be done in a way, which can be easily incorporated in maintenance and engineering contracts let by the highway authority, and other special management arrangements for the site.
39. Verges of value for wildlife should be recorded and identified in a way to ensure they receive appropriate management. This is necessary to help avoid accidental or unintentional management which is not prescribed.
40. Many rare species are now found on road verges. The importance of this habitat should be recognised in National Species and Habitat Action Plans and Local Biodiversity Action Plans.
41. Generally a 1m wide band adjacent to the carriageway will be cut to a nominal frequency. A narrower band may be cut where this is appropriate. Sightlines may require a more intensive mowing regime. The remainder of the verge should be mown no more than once a year, usually in late September/October, to allow plants to flower and set seed.
42. A traditional mowing regime should be adopted to give maximum nature conservation benefits.



Small emerald moth

43. Verges in built up areas are likely to require more frequent cutting. Chemicals (pesticides, herbicides and fertiliser) should not be applied. An exceptional case would have to be made for their use, for example to accelerate regeneration of a verge after earthworks.
44. Where roadside scrub needs to be cut back, it should be coppiced on a regular cycle, commonly between 3 and 10 years. Scrub growing within two metres of the carriageway should be cut every three years. Common species include hazel, hawthorn and blackthorn. The cut stumps should be allowed to re-grow, and not be removed or poisoned. Measures to control ragwort should be undertaken in accordance with any locally agreed policy.

Visibility splays

45. Many access roads and rural lanes do not have visibility splays. Newly created visibility splays are often an alien and urbanising feature, created by planning conditions in the interests of safety according to national standards.
46. Creation of visibility splays should be sensitive to the location. Where flexibility exists within national standards, options to reduce the intrusiveness of visibility splays should be considered.

47. The new boundary should reflect that of adjacent areas. Hedges should be of native species. The newly created verge should also reflect the vegetation found on adjacent areas. New verges should be sown with conservation mixtures (from a UK source) rather than amenity seed mixtures for the rural road network.
48. Trees can be retained within the visibility splay providing they do not represent a safety hazard.

Fences ~ including safety barriers

49. Fences tend to be prominent in areas of intensive agriculture, especially where The Enclosure Act historically had limited impact. They are also commonly associated with modern built development. Laid or coppiced hedges are the boundary type most characteristic of the Chilterns, and should be encouraged in place of fences wherever possible.
50. Where wire fencing/netting is required, timber posts should be used. Metal and concrete posts are intrusive. Fencing of this kind should where practicable be aligned to allow it to be screened by planting hedges.
51. Where new roadside fencing is required a new hedge should be planted. Natural regeneration which may take place on either side of the fence should be allowed to develop if this reflects the characteristics of the local landscape and when developed should be managed appropriately.
52. If a solid fence is needed, vertical board fencing should be erected with locally sourced timber posts. Coloured stains should be avoided, and if the fence is long and there is room, a hedge should be planted to screen it.

53. Metal railings are a traditional feature of many estates and other traditionally managed features such as ponds. These should be retained whenever possible.
54. Although safety fences are visually intrusive, they are an essential safety feature. Some types of barriers can be painted an appropriate colour to reduce visual intrusiveness and should be located to leave enough verge clear for walkers and riders.
55. New barriers will only be erected where there is a proven need, and no other equally effective and less intrusive safety measure will suffice.
56. Roadside vegetation such as old man's beard, ivy and honeysuckle should be allowed to grow over the barrier, except where its visibility is a safety aid in its own right, such as on sharp bends.
57. Steel rope safety fences can be less intrusive and should be considered as an alternative for both new and replacement barriers.

Walls

58. Brick (and flint) walls bound by lime mortar are common throughout the Chilterns and should be retained. Other types of wall are rare and special efforts should be made to



Traditional brick and flint wall

retain them in good repair where they are locally distinctive and make a contribution visually. The responsibility will normally be that of the landowner.

Gates

59. Locally sourced wooden five bar field gates are preferred to metal gates. Where locally distinctive styles of gate are in use, they should be retained, and the continued use of that design encouraged.
60. Where possible replace stiles with gates for ease of access, and remove, or do not replace, stiles if they are not needed. These should generally be of locally sourced timber construction except where, for example, traditional parkland metal fencing dictates otherwise. The implications for future maintenance needs to be considered and may influence the choice of material.

Bridges ~ parapets

61. Bridges are a rarity in the Chilterns, and are generally used to cross ditches and streams and railways. Before any work is carried out, an assessment of the ecological value of the bridge and the consequent implications should be undertaken. In particular, it is important to be aware that bats are associated with bridges and that they and their breeding sites or resting places are protected under Section 9 of the Wildlife and Countryside Act 1981.
62. Painted cast iron post and rails should be retained and conserved wherever possible. Where there is a need to replace them, if possible they should be replaced in the same style, albeit alternative materials may be used to give the same effect. Where authenticity is important materials should be re-used, recycled or appropriate equivalents used.

63. If this is not possible for safety reasons, or to comply with national standards, the replacement design should be sympathetic to the setting, and efforts made to reduce the intrusiveness of modern structures and materials. All repairs should use matching materials. Generally modern and standard structures with exposed concrete and steel are inappropriate for situations that do not pose a significant safety risk.
64. All bridges 'listed' for their architectural and engineering merits should be conserved and the quality of their 'highway' setting maintained wherever possible. Small brick parapets are a characteristic feature of the Chilterns and should be retained, and all repairs should be in the same style and preferably materials.

Cattle grids

65. The use of these is very limited within the Chilterns; however, they are potentially useful devices for assisting the management of grazing on commons and chalk downland. In the case that a cattle grid does need to be installed advice should be sought from the relevant Bridges Team who are responsible for their maintenance.



Cattle grid which allows sheep to graze open chalk grassland - Ivinghoe Hills

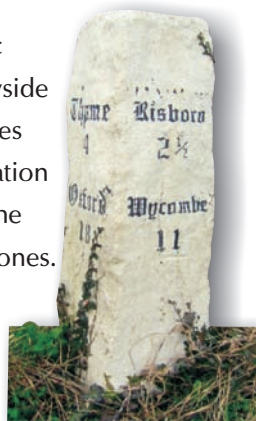
Listed roadside heritage features milestones

66. Throughout the Chilterns there are many historic buildings, parks and monuments that have been listed to ensure that they can not be altered or destroyed without the special historic and architectural interest of the building being taken into account in any planning decisions relating to the site. In many cases, these sites will adjoin the highway and when this happens the relevant highway authority will also have a duty to ensure that any work they carry out does not negatively affect the site. The most common heritage features are milestones and traditional finger posts.

67. The relevant District Council holds a record of all listed buildings and they should be consulted when works that may affect a listed building are being planned. Some milestones will require listed building consent before they can be moved.

68. Milestones are historic features in the countryside and highway authorities should record the location and regularly survey the condition of all milestones.

69. All milestones must be conserved and repaired where necessary, and should be retained in their historic location. In exceptional circumstances milestones could be relocated within the immediate vicinity to ensure they are visible beside the highway in the way originally intended.



Historic roadside features must be retained and maintained

70. In conservation areas consideration should be given to producing new milestones as a special feature, as part of any major works such as traffic calming.

Street lighting

71. Lighting should not be installed on roads in the countryside, unless there are overriding safety issues which cannot be addressed by alternative measures.

72. The minimum acceptable lighting intensity should be specified. To provide the desired level of lighting as few columns, as short as possible, should be used. Fixture to buildings and other structures should always be considered and the lamps (luminaires) should direct light on to the desired area only.

73. In 'built' conservation areas the design of column and fitting should be in keeping with the conservation area style. The colour of columns should be neutral, generally grey, black or dark green.

74. When they are due for renewal, the need for, and design of lighting columns should be reconsidered, and if they are no longer justifiable they should be removed.

75. Yellow (low pressure [SOX]) sodium lighting should be avoided in open countryside. If necessary, low-level white (high pressure sodium [SON]) lighting is preferred.

76. The use of illuminated bollards should generally be avoided on rural roads and should only be used when mandatory where the road runs through open countryside.

77. Intelligent road studs are solar powered and in certain applications may provide a low energy alternative to traditional lighting,

particularly where the lighting has been provided to highlight the alignment, and will also help reduce levels of light pollution. Currently there are few approved suppliers of this technology and their early use is under review.

Other structures ~ bus shelters, salt bins, notice boards

78. Most bus shelters in the Chilterns are of timber construction, often with clay tile or wooden shingle roofs. These shelters should be retained. New shelters should be of the same timber / brick design or as locally agreed.
79. Modern type shelters, which often carry advertising are not generally acceptable in the Chilterns, either in open countryside or in villages.
80. Salt bins are temporary objects and do not have a permanent impact on the landscape. Care should be taken to ensure that any new salt bins are placed as discreetly as possible and that their design and colour minimise their impact.
81. Any new notice boards should be constructed of traditional materials, such as locally sourced timber finished in a natural water based stain, or painted an appropriate



Use of vernacular materials and styles will help bus shelters and other structures fit into the local setting

colour, and placed so that it blends into the environment as well as possible and can be accessed without causing an obstruction.

82. Consideration should also be given to the design, which could incorporate vernacular built features. Consideration should also be given to providing within the notice board local information on the area and its place in the Chilterns, and on local transport services.

Highway construction and maintenance

Surfacing

83. Historically most road surfaces have been dense bitumen macadam but in recent years have been surface dressed. In all locations, the choice of surfacing should have regard to climatic considerations, for example heavy rain and heatwaves. Consideration should be given to the use of options which reduce noise, particularly in noise sensitive locations. Surface materials that can pollute the natural environment should be avoided and where they are necessarily used, contamination of watercourses in particular should be controlled.
84. Coloured surfaces are visually intrusive and should not be used unless there are overriding safety considerations, which cannot be addressed in any other way. Where a coloured surface is considered essential, buff should be preferred to red. Wherever possible all road, footway and cycleway surfaces should be black.
85. Within conservation areas, consideration should be given to the use of specific aggregates and surface dressings to give an appropriate finish and skid resistance.

86. Under the New Roads and Street Works Act 1991, statutory undertakers are obliged to reinstate their works in similar materials. The Codes of Practice and Regulations associated with this Act must be followed.

Drainage issues

87. Sufficient drainage is required to remove storm water and prevent flooding. Natural drainage to an open ditch system should be retained and properly maintained where possible without kerbs and gulleys. The effectiveness of ditches will be determined by regular maintenance, soil conditions and slope. Climate change is increasing the occurrence of unusually heavy rain and some existing natural drainage may need to be modified to account for this.
88. On most roads, small grips (transverse trenches) should be adequate drainage. On minor roads drains using kerbs and metal grids should not be installed unless there is an unacceptable probability of flooding, which creates a hazard or threatens property. A programme of grip and weir maintenance needs to be carried out to ensure that the grips are able to function properly.



Roadside drainage needs to be maintained

89. Filter drains, filled with aggregate and running alongside the road, are generally unnecessary and should only be used where there is an acknowledged risk of flooding or erosion. A surface treatment should be used to reduce the visual intrusiveness of this type of drainage work. Sustainable drainage systems offer a range of environmental benefits and may be appropriate in specific locations, particularly where major new schemes are planned.
90. Pollution traps can be provided to prevent direct discharges to watercourses or boreholes but these can be significant structures with ongoing HGV access requirements.
91. Discharge from road drainage should not be allowed to cause problems on other highways. For example, footpaths and bridleways leading off the carriageway can become de facto grips, leading large quantities of water off the carriageway but causing drainage and surface problems on the public right of way.

Kerbs

92. Kerbs are an intrusive feature along country roads and are a major contributory factor in urbanising the countryside. The primary functions of an upstanding kerb are for drainage purposes, and to protect the carriageway edge.
93. Kerbs should not be installed along roads in the countryside unless there is an overriding safety reason to do so. If edge support is required a flush or haunched kerb should be used.
94. Granite or stone kerbs will be retained or, if necessary, replaced with like for like.



Stone kerbs should be used in preference to concrete

Depending upon the local circumstances, for example a conservation area, consideration should be given to replacing concrete kerbs with stone or granite. The use of flush or angled kerbs should be considered, as they are less visually intrusive.

95. Consideration should be given to using textured concrete rather than the 'pressed' concrete kerb used currently as standard, which is usually visually intrusive. Textured finishes will allow the kerb to 'mellow' more quickly. On long sections irregular lengths will help to reduce the uniformity of the kerb.



A more pleasing alternative to concrete kerbing

96. Kerbs should be set as low as possible. Replacement kerbs should be set at the same level. Raising the kerb to ease later resurfacing will result in the kerb becoming an intrusive feature for many years. It is a practice which should be avoided.

Passing places

97. Many roads in the Chilterns are single track, with occasional passing places. They are a feature which helps to conserve the rural character of the area.
98. Passing places should not be formalised with signs and kerbs, unless there is a safety reason for doing so. Surfacing should be kept to a minimum, and be of the same material as the main carriageway.

Lay-bys and picnic areas

99. Where lay-bys and picnic areas exist or are proposed they should be kept informal with no kerbs, few signs, restricted areas of mown grass and limited, if any, formal landscaping.
100. Where there is sufficient space between the lay-by and road, 'natural' landscaping using locally occurring native species can provide screening, where this is considered appropriate. On some sites security concerns may preclude this option.
101. Consideration should be given to removal of litter bins unless they can be emptied regularly and a good compromise can be found between their being obvious to the intended user yet unobtrusive in the local scene. Drivers should adopt a 'take your litter home policy'. Litter should be regularly removed according to the prescribed timescales in legislation.
102. At selected sites local visitor information should be given.

Statutory undertakers' works and apparatus

103. All statutory undertakers should follow these guidelines and abide by other guidance in NJUG 10, issued by the National Highways and Utilities Committee (HAUC). In accordance with the Natural Environment and Rural Communities Act 2006, statutory undertakers have a duty to conserve biodiversity where possible. Adherence to these guidelines will assist in fulfilling this duty.
104. Statutory undertakers should keep their roadside equipment to a minimum and this should be installed below ground whenever technically possible. Equipment should be sensitively located and unobtrusive bearing in mind future access and maintenance requirements.
105. Equipment should be screened and coloured to blend into the background. Planting should be with a locally occurring native species. Leyland cypress is not acceptable.
106. Poles or masts should be of timber construction whenever technically possible. When positioning a mobile phone mast every care should be taken to ensure that the location and colour are as inconspicuous as possible and that the mast does not interfere with the passage of walkers, wheelchair users, cyclists or horse riders or obstruct visibility splays.
107. Historic routes such as sunken lanes and holloways should not be used to route services.
108. Where services follow the verge, reinstatement should restore the natural soil profile, compaction and surface levels

existing prior to work commencing. The verge should be restored to the same profile as originally existed. An uneven surface can create hazards for walkers and horse riders using the verge. Surplus soils should be graded or removed from site and this should not be re-seeded, unless otherwise advised by an ecologist. Amenity seed mixtures should never be used, except in built up areas.

109. Where services are provided or maintained in the road, footway or cycleway, statutory undertakers are obliged to reinstate their works in similar materials to the existing.

Facilities for walkers, horse riders and cyclists

Footways

110. Generally footways along rural roads are confined to villages, approaches to built up areas and exceptionally, short sections between villages. Where informal use exists, verges should be used for pedestrian movement. In practice, the verge tends to be used as a 'safe refuge' by pedestrians and horse riders walking along the road.



Verges are important to walkers

- 111. Where there is no footpath between villages or a verge links rights of way it is likely that the verge will be used by walkers and riders. The management of these verges must take into account their use, for example, by keeping a strip cut throughout the summer for use by pedestrians and horses.
- 112. In the future, new footways are only likely to be constructed where there is a demonstrated safety or amenity issue. The requirements of the Disability Discrimination Act need to be borne in mind when considering new footway provision.
- 113. Surfacing material and kerbs should match existing footways, unless the existing materials are unsatisfactory and inappropriate for the location. The use of kerbs should follow the advice given earlier in these guidelines and should include the use of dropped kerbs where appropriate. In Conservation Areas the use of special finishes should be considered.



Alternative provision for pedestrians through a village

- 114. Some footways could be developed as shared footway/cycleways if all other options have been ruled out. This will not be appropriate for all footways, but in many rural areas could provide a safer alternative than cycling along the road.
- 115. Footways should be set back from the roadway and, where possible, separated from it by a grass verge.

Footpaths, bridleways and other Rights of Way



- 116. The Rights of Way network in the Chilterns is extensive and is well used by large numbers of residents and visitors to the area. The dense network provides access and recreation opportunities with good links between the towns and the countryside. *The Ridgeway and local destinations combined on to one post*
- 117. Maintenance of the existing rights of way network is the main priority but opportunities for the development of new routes and the completion of any gaps in the network should be actively pursued.
- 118. Waymarking within the highway and its boundaries should be based on existing posts, stiles or gates wherever possible.

Cycle facilities

- 119. Cycling is a popular and healthy activity and is encouraged as a sustainable way to travel as well as a way to explore the Chilterns. The bridleway network is generally good but there are places where there are gaps or there is a need to cross busy roads. Further information on cycle

routes can be found in the LTPs or District Council Cycling Strategies for the area.

120. Wherever possible, cyclists should be encouraged to remain on the road and drivers should expect to see and share space with cyclists, walkers and horse riders using rural roads.
121. Where specific cycleways are proposed, consideration should be given to making these multi-use to accommodate horse riders, cyclists and walkers. An un-sealed surface should be provided of appropriately coloured aggregate. Planning, design and construction guidance is available from Natural England and Sustrans.
122. Care should be taken not to detract from the character of rural areas and new facilities should be designed to avoid damage to existing features such as trees, hedges, walls and other landscape features.
123. The design of cycle racks should be appropriate to the setting. A number of designs are available and in special circumstances a special design may be justified.



Cycle rack based on traditional metal estate type fencing

Quiet Lanes

124. Following The Transport Act 2000, statutory guidance was issued in 2006, which allows highway authorities to designate Home Zones and Quiet Lanes. Quiet Lanes are defined as minor rural roads appropriate for shared use by walkers, cyclists, and horse riders as well as other vehicles. They may also be appropriate for filling gaps in the Rights of Way network. The aim of a Quiet Lane is to maintain the character of a minor rural road and encourage non-vehicular use.



Motorists should expect walkers, cyclists and horse riders

125. There are three key elements to developing Quiet Lanes:
 - Community involvement to encourage a change in user behaviour.
 - Area-wide direction signing to discourage through traffic.
 - Quiet Lane entry and exit signs to remind drivers that they are entering or leaving a Quiet Lane, a place where they may expect people to be using the whole road space for a range of activities.

126. Generally, the Chilterns already offers an extensive network of quiet rural lanes, which are well used by walkers, cyclists and horse riders. The existing management, maintenance and user education provided by the highway authorities and their partners is already providing widespread benefits, which may mean that the formal designation of networks of designated Quiet Lanes within small areas of the Chilterns will be unlikely to bring significant benefits.



A lane typical of the Chilterns

Pedestrian, cycle and horse crossings

127. The creation of special crossing points is only likely to take place where it is considered that walkers, cyclists and riders are vulnerable to vehicle traffic. Where a new crossing is planned consideration also needs to be given to minimising the environmental impact of the associated lighting and signing.



Many lanes are well used by horse riders

128. Zebra or Puffin crossings should be used for pedestrians. Toucan crossings should be considered where large numbers of pedestrian and cyclists are expected to cross. Pegasus crossings should be considered where pedestrians, cyclists and horse riders are expected to cross in large numbers. In all cases, the crossings should be installed in accordance with the current Regulations for such facilities.

129. Where an uncontrolled crossing point is heavily used, a central island or refuge can be considered but the generally restricted width of many country lanes and legitimate access needs (such as agricultural use) will mean that there are few locations where these can be provided. Where provided, the width of the central island should be of sufficient width to accommodate all wheelchair users, cyclists and horse riders as well as walkers.

Wildlife crossings

130. Deer are an integral part of the wildlife of the AONB, and having no natural predators, left unchecked their numbers can rise

significantly. The increase in numbers both affects the flora of the Chilterns and increases the risk of vehicle / deer collisions occurring. Deer vehicle collisions have increased significantly in and around the Chilterns over recent years, killing or injuring many deer. Nationally between 2000 and 2005 there were 785 different injury collisions which specifically mentioned deer as a hazard at the scene of the collision, including 20 that led to human fatalities and 134 to serious injury.

131. From the work carried out around the National Trust Ashridge Estate in collaboration with the National Deer Collisions Project, various measures are being used to address the issue. This work has highlighted that a holistic approach involving the highway authorities, estate managers and their staff, the Police and the public is proving to be the most effective method.
132. The range of measures that should be considered include:
 - Formation of local Deer Management Group.
 - Management of deer numbers.
 - Roadside verge management.
 - Effective boundary management, such as fencing.
 - Conventional wild animal warning signs or variable message signs.
 - Reduced speed limits.
 - Increasing public awareness to the issues through the media.
 - Monitoring of deer vehicle collisions.



Wildlife can cross the highway at any point, not just at locations with wildlife warning signs

133. Experimental work is currently being conducted to discourage deer from crossing roads and this includes the use of acoustic devices. This work is ongoing and further information is available from the deer collisions website.
134. Amphibians, including great crested newts, can be affected by operations such as culverting, cleaning ditches, pond de-silting or changing the water quality. Great crested newts are a protected species and require specialist ecological advice and surveys prior to works commencing where presence of the species is known or suspected. Knowledge of their life cycles will assist in choosing the best time to carry out work as from September to December the newts are on dry land. Natural England must issue licences for experts to handle these animals and this may take time to process.

135. Frogs and toads return to the same ponds each year to breed, their migration routes often cross roads and inevitably, there are many casualties. Special measures such as tunnels, amphibian fencing or signs warning road users of their presence can be installed in order to safeguard established routes.
136. Badgers and their setts are both protected by legislation. The locations of setts are kept secret and therefore not recorded. It is an offence to disturb these animals and Natural England consider using heavy machinery within 30 metres of the access to an active badger sett to be disturbance. Advice should be sought if work is to be undertaken in an area suspected of being frequented by badgers. Tunnels or underpasses can be constructed to maintain established routes, with special fencing used to guide animals to safe crossing places.

Traffic management

Traffic reduction

137. The growth and impact of traffic is a national and local concern. Projected growth is likely to have a severe effect on the Chilterns, in terms of loss of amenity, noise and air pollution, congestion and increased safety risks.
138. The Road Traffic Reduction Act 1997 places a duty on highway authorities to assess current levels of traffic, forecast growth and to set targets and implement measures to reduce traffic or the rate of traffic growth in the future. The Local Transport Plan for each highway authority will set out the more detailed plans for each area.
139. Generally, measures that avoid the need to travel or which shorten journeys without

inappropriate use of side roads should be promoted. These will include local purchasing of goods and the development of green travel plans for businesses and individuals.

Traffic Regulation Orders

140. A Traffic Regulation Order (TRO) is needed whenever access to or use of the highway is to be legally restricted. The TRO process can be lengthy and expensive and should only be used where there is a demonstrated safety or maintenance problem. Early consultation with the Police is needed to ensure that the Order can be practically enforced by them. Virtually all TROs require signing, road markings or other physical features to make them enforceable and this should be considered at the outset to ensure that the solution is not aesthetically worse than the problem being addressed.

Traffic calming

141. Traffic calming is widely used in urban areas to reduce vehicle speeds but the generally urbanising nature of traffic calming features make them unsuitable for widespread use in the Chilterns. The importance of driving according to the road conditions and the presence of vulnerable road users rather



Non-standard speed limit signs which required authorisation from the Department for Transport

than the maximum or national speed limit indicated continues to be the main issue and must be emphasised.

142. Traffic calming should be designed specifically for each area in which it is to be provided. It should take into account the specific problems to be tackled and the character of the area.



If required, these measures are preferred to yellow backed signs and coloured road surfaces

143. Public consultation should take place at the design stage to gain local acceptance and ownership of any proposed traffic calming measures. The consultation should include residents, other interest groups and the business community.
144. Care must be taken when designing village entrance features not to obstruct the verge if used by pedestrians and horse riders. The scheme should preferably use materials, locally occurring native species and designs that reflect the local character of the area and landscape.

Road junctions

145. Within the Chilterns, there is a large network of minor roads. Most junctions are T-junctions or crossroads and on occasions, a road has a split or bifurcated junction

leaving a small grass area between the carriageways

146. Junction improvements are sometimes necessary on safety grounds or as a result of development in an area. Whilst legislation sometimes requires specific standards to be met, some regulations do allow flexibility. The design of any new scheme should use the existing topography, vegetation, buildings and other structures, so that they appear an integral part of the landscape and historic road pattern. Solutions should reinforce local identity by careful choice of detailing, materials and street furniture.



Grass traffic islands at junctions should be retained

147. When carrying out junction improvements:
- Wherever possible reduce the area of carriageway and realign the road rather than use large areas of hatching.
 - Wherever possible retain trees, hedgerows and verges including any central grass areas.
 - If vegetation is removed, then replace it wherever possible with species native to the area.
 - Kerbing should be kept to a minimum and kerbing of central grass areas should be avoided.

Roundabouts

148. Roundabouts are normally associated with urban areas or major roads where the volume of traffic means they are considered to be essential. Lighting, mandatory signs and lines to a satisfactory standard must be provided at roundabouts and this can be inappropriate in rural areas. In view of this, other junction treatments are usually visually preferable.



A roundabout where signing and lighting have been minimised - Studham cross roads

149. If a roundabout is the most suitable agreed solution:

- Lighting should be kept to a minimum and light pollution should be carefully controlled.
- Planting on roundabouts should be appropriate for the area and should be with locally occurring native species.
- Sponsorship of roundabouts is only permitted in accordance with the appropriate highway authority policy.
- Barriers, retaining walls, kerbing and other structures should be kept to a minimum.
- Detailing and choice of materials should respect the local environment and

standard solutions or components will not always be appropriate. Chevron blocks around the edge of the roundabout are not appropriate and should not be used.

- Signing should be kept to a minimum and should be located to reduce clutter.

Speed limits

150. Most highway authorities now consider that 30mph should be the norm in most villages in accordance with national guidance and are actively reviewing speed limits as part of their speed management strategies.



Where mandatory signs are required, co-location should be considered to reduce sign clutter

151. As part of speed limit reviews consideration should be given to assessing whether rural roads as well as those through villages have the appropriate speed limit.



Combined village name plate with speed limit which required authorisation from the Department for Transport

Traffic signs

152. All signs on the highway must comply with the Traffic Signs Regulations and General Directions (TSRGD) and the associated Traffic Signs Manual (various Chapters) and other Guidance Notes. Care should be taken to ensure that only those essential signs to direct or warn road users of conditions ahead should be provided. The use of brown tourist direction signs should be kept to a minimum and in accordance with local highway authority policy.

153. Where it is agreed that signs should be provided, the following should be adopted:

- Signs should be retro-reflective only unless required to be lit by TSRGD.
- The use of yellow or grey backing boards should be avoided.
- Signs should be kept as small and mounted as low as possible.
- Opportunities should be taken to incorporate several signs onto one signboard or in one sign assembly unless the overall size would be intrusive.
- Signs should be sensitively located where possible against a backdrop of trees / hedge to reduce their visual impact.



Visitor attraction sign combined with other signs to minimise clutter



Before: Conventional sign



After: Replaced by traditional sign

- If the verge is used by pedestrians or horses the sign must be located where it does not cause an obstruction.
- When signs need to be renewed, their original purpose should be reviewed and unnecessary signs removed.
- Visibility of signs should be monitored regularly and maintenance undertaken if necessary.

Traditional signs

154. Traditional finger posts should be retained and conserved. New finger posts to a traditional design should be considered as replacements for modern, standard signs in villages and along routes of special character subject to meet safety and TSRGD requirements.

155. At appropriate locations, such as crossroads within a village, new traditional style fingerposts can be fitted with a traditional ring finial. Public consultation indicates that the most popular legend for these finials is 'Village Name' (Top) and County (Bottom) and this should be considered in any design.



A traditional finger post sign restored with new arm and finial

Village signs

156. The Conservation Board and its partners support and promote local distinctiveness. This now extends to encouraging local communities to prepare Village Design Statements. A common expression of village identity is for it to have its own style village entry sign.
157. Each highway authority is encouraged to adopt policies and practices that support local efforts to conserve or recreate local distinctiveness. Incorporation of the Chilterns logo on the sign should be considered.



Local timber can be used for village entry signs

158. Village signs are increasingly being used as part of a 'gateway' to a village, involving a traffic calming function along with information provision and local distinctiveness. A counterpart exit feature can help to emphasise the extent of a village speed limit.

Street name plates

159. Street name plates are not traffic signs prescribed in TSRGD but are provided by District Councils to identify roads and

streets. Aside from the primary aim of identifying the name of a street, these can also help to create an identity and character of an area. Sensitive colour coding of signs to match with other street furniture, or incorporating a specific logo onto the sign can help a visitor to identify a particular area of interest.



Example of traditional style of street name plate in modern materials

Unauthorised signs

160. Official and commercial signs and posters have proliferated in some areas, often becoming an eyesore, and these can reduce the effectiveness of necessary road signing.
161. Unauthorised signs should be removed as quickly as possible so that a strong message is sent that they will not be permitted on the highway. Where signs are provided off the highway or are mobile i.e. on trailers, these should be referred to the local planning authority to determine whether permission is needed or whether enforcement action is appropriate.
162. Temporary signing for events is permitted within TSRGD but should only be provided when approved by the highway authority and should be removed immediately after the event.

Road markings

163. Standard prescribed markings are to be used in accordance with TSRGD, other than in exceptional circumstances when special authorisation is to be obtained from the Department for Transport.
164. Carriageway edge marking should be used only when there is an acknowledged problem caused by lack of edge definition. No edge marking should be used where the road is edged with kerbs.
165. When restrictions on waiting or loading apply, narrow yellow lines should be used instead of standard width.



Carriageway signing is preferred to upright signing (which requires Department for Transport authorisation)

Safety cameras

166. Safety cameras are primarily used to address sites where there is a history of speed related injury collisions. If a proposed site is identified, it is usual to consider other measures before a safety camera is agreed.
167. Before a safety camera is agreed, full consideration must be given to its impact on the local environment as well as its safety benefits.

Vehicle Activated Signs

168. Vehicle Activated Signs (VAS) can be useful to warn drivers of a hazard ahead and encourage speed compliance. For VAS to be effective they should be used sparingly and only when fixed signing does not solve the problem.
169. VAS can be costly and their size and shape can make them unsuitable for widespread use in the AONB particularly if wind or battery power is required in the absence of a convenient electrical supply.
170. Whilst there may be suitable sites for VAS in the AONB, they should generally be as small as possible and be restricted to areas with high traffic flows and specific collision problems.



A dual-function VAS activated by animals crossing or vehicles exceeding a pre-set speed

Parking

171. Despite the generally good public transport system serving many parts of the area the majority of visitors to the AONB choose to arrive by car. This can lead to indiscriminate parking in unsuitable locations, including on verges and in gateways, which in turn causes nuisance to local residents as well as damage to verges.
172. The creation of new parking areas in the AONB is not desirable but where necessary, regularly used off-road parking places should be repaired and managed in a low-key manner. There are often more options available for the use of materials in parking areas and these should be explored to suit the local environment.
173. Where persistent parking causes significant damage or obstruction, measures to deter parking should be considered but care should be taken to ensure that the remedial measure selected is appropriate for the local area.

Lorry routes

174. Some lorries are using inappropriate non-strategic routes that do not have legitimate business in the area. These journeys can be deterred by removing long distance destination signs in and around the AONB.
175. It may be necessary to consider weight, width or height restrictions, even though there can be enforcement difficulties. The highway authorities should continue to develop freight quality partnerships and encourage the use of smaller vehicles where this is practicable.



Lorries should be encouraged to remain on the strategic highway network

Buses and Coaches

176. Local bus and coach services play a valuable role in providing non-car access to the Chilterns. Bus use within the AONB reduces the reliance on the use of cars and provides access for those without a vehicle and will become increasingly important with housing growth on the fringes of the AONB.



177. Large buses and coaches can be unsuitable for narrower roads although they may not have the choice or availability of locally alternative routes. It will sometimes be necessary to use smaller vehicles, however,

conventional buses will continue to be the main form of public transport for many parts of the Chilterns.

178. With the increased use of satellite navigation systems it will be important to ensure that the characteristics of the Chilterns are properly mapped and recorded.

Conclusion

This guidance seeks to cover all those aspects of design and management of highways which have a potential environmental impact on the Chilterns as well as the wider area. The related, and equally important, area of work which covers the design of highways within built up areas and new development, of which there will be much for the foreseeable future, is not covered fully by this guidance. It is covered in many other publications. However the principles remain the same.

It is a significant challenge to marry the needs of modern society whilst conserving the environment and providing safe means of travel for walkers, cyclists and horse riders as well as motorists. This guidance also emphasises that highways and their users also have an impact on wildlife habitats and the towns and villages through which they pass. Quality of life for those affected must be a major concern as well.

In preparing and publishing this guidance the highway authorities have agreed to apply this guidance to works in their area and encourage all those other authorities, agencies and landowners to also take note of this guidance when undertaking works in the Chilterns.

Glossary

Accessibility The ability of and ease of reaching, particular services or activities.

Air Quality Management Areas (AQMA)

District Councils are required to designate as Air Quality Management those places where national air quality objectives or standards have failed or are unlikely to be achieved.

Biodiversity Action Plan (BAP) Plans usually prepared at national and county level to conserve and enhance local wildlife.

Natural England A statutory body working to conserve and enhance the English countryside and to promote social equity and economic opportunity for people who live there.

Department for Environment, Food and Rural Affairs (DEFRA) Central Government Department.

Department for Transport (DfT) Central Government Department.

Footway Pavement, usually hard surfaced, at the side of a highway as opposed to footpath which often runs along the edge of a field etc.

Hard measures Engineered transport measures (also see 'soft' measures).

Highway Authorities and Utilities Committee (HAUC) Highway Authorities and Utilities body advising Government.

Highways Agency (HA) An executive agency of the Department for Transport, responsible for operating, maintaining and improving the national strategic road network (trunk roads and motorways) in England.

Killed or Seriously Injured (KSI) The level of injury sustained in road collisions defined by national standards.

Local Transport Plan (LTP) A plan prepared locally to deliver local as well as national transport objectives.

Modal shift The process of changing travel behaviour from single occupancy car use to more sustainable modes (eg bus, cycle, car sharing).

Mode share The proportion of journeys undertaken by different modes (eg car, cycle or bus).

National Air Quality Strategy (NAQS)

A strategy containing targets for reducing nine key air pollutants and a timetable for meeting this.

National Cycle Network (NCN) Cycle network across the UK using quiet roads and cycle lanes developed by the charity Sustrans with local authority assistance.

Park and Ride (P&R) Car park usually located at the edge of an urban area with frequent bus services to town centres (used to reduce congestion).

Quiet Lanes Country roads suitable for walking, cycling and horse-riding through changes in signage and driver behaviour.

Safety cameras Cameras used to improve safety at locations where criteria set by the Safety Camera Partnership are met.

Soft measures Measures to change travel behaviour, improve safety or other transport related objectives that do not require engineering eg travel planning, education, training or publicity (see also hard measures).

Speed Indicating Device (SID) These are mobile, interactive signs that flash either a smiley face or the excessive speed being travelled by passing motorists, as appropriate.

Statutory Undertakers Utility companies such as Gas, Electricity, Water and telecoms.

Special Area of Conservation (SAC) Area designated under EU Habitat Directive.

Strategic Environmental Assessment (SEA) Strategic assessment of the Local Transport Plan on the environment. Environment is broadly defined, including biodiversity, health, fauna, flora, soil, water, air, climatic factors, cultural and landscape heritage.

Sustrans Charity responsible for the introduction of the National Cycle Network.

Term contractors Contractor that is employed on (usually) a longer term contract to supply a range of services.

Transport Act 2000 Government legislation requiring local authorities, amongst other things to produce Bus Strategies and five year Local Transport Plans.

Traffic Signs, Regulations and General Directions (TSRGD) Central Government guidance on lining signing - colour, shape, size and style.

Vehicle Activated Signs (VAS) Interactive sign triggered by approaching vehicles, used to warn drivers of hazards ahead or to remind them of the speed limit in force. Must be used in addition to, and not in place of, conventional signing.

Vision splays Area of visibility at a junction

Vulnerable modes Modes of transport with little or no protection from collisions eg pedestrians, cyclists and PTW (Powered Two Wheelers) users.

Vulnerable road users Road users with the least protection from collisions eg pedestrians, cyclists and PTW (Powered Two Wheelers) users.

Contacts

Contacts for further information

Chilterns Conservation Board
www.chilternsaonb.org

Highway authorities:
Bedfordshire County Council
www.bedfordshire.gov.uk

Buckinghamshire County Council
www.buckscc.gov.uk

Hertfordshire County Council
www.hertsdirect.org

Oxfordshire County Council
www.oxfordshire.gov.uk

Other useful Guides or Documents

Chilterns AONB Management Plan

Local Transport Plans

LTN 1/08 Traffic Management & Streetscape,
Department for Transport 2008

Manual for Streets, Department for Transport 2007

Traffic Advisory Leaflets – various, Department for Transport

Traffic Signs Manual – all Chapters

Traffic Signs Regulations and General Directions
2002



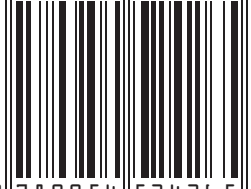
An Area of Outstanding Natural Beauty



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