

FINAL DRAFT - OCTOBER 2003

SUSSEX BIODIVERSITY PARTNERSHIP

ROAD VERGES HABITAT ACTION PLAN

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INTRODUCTION AND PREAMBLE

Why a Road Verge Biodiversity Action Plan?

The road verge can be regarded as being made up of a wide range of habitats and their associated species. There are already existing or proposed Habitat Action Plans (HAPs) for the range of habitats that one might find on the road verge (refer to the Sussex Biodiversity Partnership Action Plan). However, there is one major influence over road verges that is not consistent with other habitats, and that is the responsibility for maintenance. In that respect the Sussex Biodiversity Partnership agreed that it would be acceptable and desirable to have a Biodiversity Action Plan (BAP) for road verges. Furthermore it has been agreed that the plan will be restricted to road verges at this stage, and not attempt to cover other linear habitats such as rail sides and 'Green Lanes'. It is quite possible that such features may well be covered in future plans. However, it must be remembered that the verge has a vital role in respect to road safety, and, whatever the Biodiversity interest, the safety issue will be paramount.

What is covered by the Road Verge BAP?

The road verge habitat is often defined, or regarded, as more extensive than the physical area over which management control exists for the highway authority. In habitat terms it can comprise a range of habitats from woodland to open grass through scrub. It may also include ditches, streams and ponds. As a result of debate over the management issues, for the purpose of this plan, the verge is to be regarded as that area of land over which the Highway Authority has responsibility for maintenance.

The Highway Authority may, by agreement, transfer that management responsibility to another body (e.g. the District Council in an urban area). It must also be remembered that, although the County Council Highways Authority have a responsibility for maintaining the road verges, they do not often own the road verges. The verges usually belong to the land owners on either side of the road. This means that the County Council Highways Authority do not have absolute control over the maintenance of road verges. The Highways Agency do own the verges, including embankments and cuttings, either side of the trunk roads and so do retain absolute control over their maintenance.

In West Sussex there are two Highway Authorities, the County Council and the Highways Agency. The latter with responsibility for Trunk Road maintenance, the M23/A23 and the A27. For the purpose of this plan, and in respect of maintenance responsibility, the road verge is generally that part of the highway which is the land lying between the road/pavement edge and the bordering fence, hedge, land or building. Land on roundabouts is also regarded as verge, as is the central reservation between carriageways. In the case of embankments, land supporting the road is generally the responsibility of the Highway Authority.

Private drives and roads, such as tracks to farm complexes, are the sole responsibility of their owners and are not covered in this HAP. However, it should be pointed out that many of them, especially on or close to the Downs, can have verges that are very rich in biodiversity. Much of the advice and guidance on management given in this document for road verges will also be relevant to the verges of private drives and roads.

Insert diagram/sketch to explain ownership and maintenance

Links to Other Policies

Road verges cannot only be viewed in respect of their contribution to Biodiversity. Road safety is of paramount importance, but in addition there are important links to a number of other policies and strategies. The most important ones of these are listed in appendix 1.

1. Habitat Definition

1.1 The habitat of the road verge is determined by a range of factors including the underlying geology, the naturally derived soils or soils which have been imported onto the verge and the management of the verge.

1.2 The characteristic of the road verge, as a linear feature, clearly means that it naturally traverses a wide range of habitat types, soils and geology. In the majority of cases vegetation and soils reflect the underlying geology. However they can also be much modified through the importation of soil, the effects of seeding or other disturbance. Management by frequent cutting and the leaving of cuttings can reduce natural distinctiveness, and the use of imported material to 'make up' road verges also blurs natural differences. However, much of the West Sussex road verge Habitat is still a reflection of the overall Biodiversity found within West Sussex.

1.3 The "road verge" thus comprises a range of habitat types from woodland through hedges to open grassland. One or more Sussex Habitat and/or Species Action Plans (SAP) should eventually cover all the habitats found on the "road verge". In the case of the Highways Agency (Appendix 7 - Highways Agency Policy), there is a commitment to produce a Highways Agency BAP. This is currently (April 2001) in production and it is anticipated that it will be published late in 2001.

1.4 There are special biodiversity issues relating to the regularly cut area of the verge. For the purpose of this plan the road verge can be described as follows:

'A mix of habitats, comprising a varied balance of trees, scrub, grass, herbs and bare ground located between the road edge and the adjacent boundary'.

1.5 The unifying aspect of such habitat is the responsibility and method of management. Importantly there must be a recognition that this essentially open habitat, often grades into woodland/hedges through a transition zone of a tall grass/herb mix and scrub, and it can include bare ground and rock faces.

1.6 Areas of verge running along side roads going through woodland are the responsibility of the Highway Authority and are included. The rest of the woodland area is owned by, and is the responsibility of, the woodland owner. Also there are often trees within other areas of verge that are the responsibility of the Highway Authority, such as where tree planting has taken place or where scrub has grown up into woodland. These trees are often very important for wildlife.

Insert diagram to show what is covered by this HAP.

1.7 On open old verges, where soil has not been imported, the verge often represents a habitat type characteristic of old meadows. They can be acid, as on the sandstone, and hence reflecting acid grassland and/or heathland, or neutral, as on much of the weald clay and coastal gravel's, and hence reflecting neutral meadows, or calcareous as on the chalk, where remnant chalk grassland is found. [For detailed descriptions of such habitats, reference should be made to the respective HAPs]

1.8 The species composition can be both attractive and varied. Swathes of individual species, such as cow parsley, cuckoo flower, primroses or orchids are found. Mixes of downland herbs, meadow flowers and heathers also support a range of insects, as do the "hot spots" provided by bare ground, where bees and wasps find a home. Here too reptiles will find shelter and the verges often acts as a valuable "passage" habitat for frogs and toads. Small mammals find refuge in the verge, and as a result, kestrels searching for food can be a common feature along the wider verges.

2. Current Status and Distribution

2.1 There is no statutory protection for the road verge habitat on biological or geological grounds per se; however, certain verges are included in both statutory and non-statutory designations:

Statutory

Sites of Special Scientific Interest (SSSI)

National Nature Reserve (NNR)

RAMSAR sites

Special Protection Areas (SPA)

Special Area of Conservation (SAC)

Local Nature Reserves (LNR)

Non Statutory

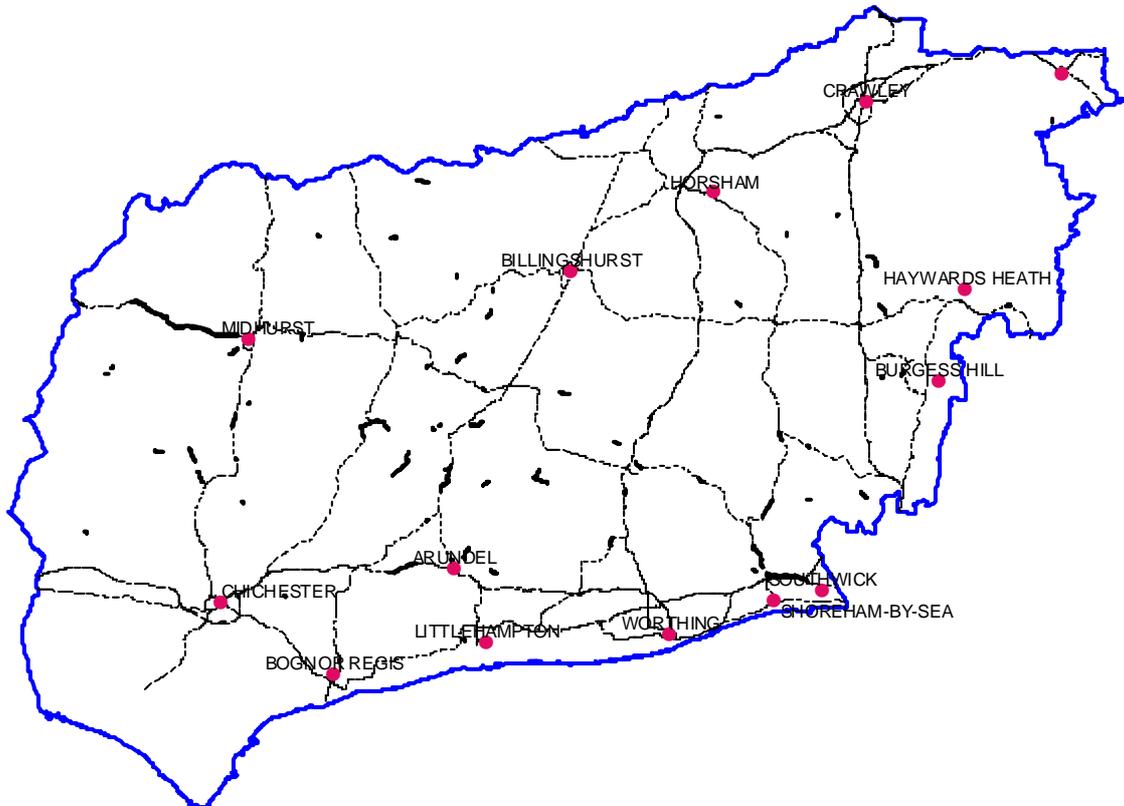
Sites of Nature Conservation Importance (SNCI)

Regionally Important Geological Sites (RIGS)

Notable Road Verges

Frog/Toad crossings

Map of West Sussex showing Notable Road Verges, 'A' roads and towns.



2.2 The habitats found on the roadside verges in West Sussex are extremely varied. Currently there is little recorded detailed knowledge of the physical and biological characteristics of the whole resource, other than through surveys carried out to set up the 'Notable Road Verge Scheme' or casual records that have been submitted in the past, but these are neither comprehensive nor systematic. There are gaps in our ecological knowledge of the road verge resource. There is no systematic or comprehensive survey of communities and species found on the verges. Nor is there comprehensive knowledge of the soil type and pH, including, where appropriate, materials used in the construction of the verges and where those materials came from.

2.3 A number of the species known to occur on the road verge are covered by both statutory and non-statutory procedures. There are species covered by the Wildlife and Countryside Act (1981 as amended) which relate to both the protection of species and the removal of species, and species covered by the Weeds Act 1959. In addition there are those species which are UK and/or local Biodiversity species or Sussex Rare Species (see Appendix 4). In the case of frogs and toads, there are also a number of recognised and maintained crossings.

2.4 There follows a brief description of the range of habitat and species designations.

Sites of Special Scientific Interest (SSSI)

Areas designated by English Nature, the Government's advisory body on ecology. This is a statutory designation and places certain obligations upon the landowner.

In West Sussex there are many SSSIs that include roadside verges and ten include Notable Road Verges. Most of the verges and Notable Road Verges are on the edge of the SSSI as roads often form the boundary of a SSSI. There are five SSSIs that have road verges passing through the SSSI. These are mostly on the Downs. There are no SSSIs in West Sussex designated specifically due to ecological interest of their road verges.

National Nature Reserve (NNR)

All NNRs are also SSSIs. No further obligation is put upon the owners of NNRs, but there is an agreement to manage the NNR sympathetically for wildlife.

Local Nature Reserve (LNR)

These are designated by local authorities. They have a management plan and a management committee to implement the plan. Apart from the aims and objectives set out in the management plan there are no other obligations placed upon the landowner.

In West Sussex there are many LNRs that include roadside verges and two include a Notable Road Verge. Many of the verges and both of the Notable Road Verges are on the edge of the LNR as roads often form the boundary of a LNR.

Ramsar Sites

All RAMSAR sites are also SSSIs. These are wetland sites of international importance for their bird populations.

In West Sussex some of the RAMSAR sites include road verges and one includes a Notable Road Verge.

Special Protection Area (SPA)

All SPAs are also SSSIs. They are sites of international importance for their bird populations.

In West Sussex some of the SPAs include road verges and one includes a Notable Road Verge.

Special Area for Conservation (SAC)

All SACs are also SSSIs. They are sites of European importance for their habitats or their species.

In West Sussex some of the SACs include road verges and one includes a Notable Road Verge.

Sites of Nature Conservation Importance (SNCI)

Sites are designated by a panel of local ecology experts. The scheme is administered by West Sussex County Council (WSCC). This is a non-statutory designation and places no obligations upon the landowner.

In West Sussex there are many SNCIs that include roadside verges and 14 include Notable Road Verges. Most of the verges and Notable Road Verges are on the edge of the SNCI as roads often form the boundary of a SNCI. There are two SNCIs in West Sussex designated specifically due to ecological interest of road verges on at least part of the site.

Regionally Important Geological Sites (RIGS)

Sites are designated by a panel of local geology experts. The scheme is based at the Booth Museum of Natural History, Brighton. This is a non-statutory designation and places no obligations upon the landowner.

In West Sussex there are many RIGs that include roadside verges and one that includes Notable Road Verges. Some of the RIGs have verges on their edges as roads often form the boundary of RIGs. There are 13 RIGs in West Sussex that are designated specifically due to geological interest of road verges.

West Sussex Notable Road Verge Scheme

In the early 1970's the then Sussex Flora Group (now the Sussex Botanical Recording Society (SBRS)) drew attention to the significance of a number of road verges for plant species. Meetings were held with the County Council Surveyors Department and Area Offices at the time, and modifications were made to the overall cutting regimes in order to take some account of the flora of the verges. A list of important road verges was compiled. Since then others have been surveyed and the importance for invertebrates (information being contributed by members of the Sussex Branch of Butterfly Conservation and specialist Entomologists) has also been noted. Discussions over the years with the County Surveyor Department have led to the identification of "Notable Road Verges" and appropriate management is undertaken. Members of the SBRS continue to contribute valuable new data and monitoring data on existing verges. However, no comprehensive survey has been made. When new sites are drawn to the attention of the County Planning Department Ecologist, discussions with a range of experts leads to their inclusion, or not, as a Notable Road Verge. The County Planning Department then draws up a Schedule of Notable Road Verges (see appendix 5), which includes a brief description of the interest and recommended cutting periods. The County Planning Department also produces maps indicating the extent of the verge. The schedules and maps are forwarded to the County Surveyor (now the Head of Highway Network Services), who ensures that they are provided to the Verge Cutting Contractor. As an experiment in 1999, in the Highway Network Services Western Area, posts were put on site to mark the verges, so that contractors can easily identify Notable Road Verges and not cut them at inappropriate times of year. The success or otherwise of this has not been monitored.

Insert sketch of posts with green-flowered helleborine by it.

The distribution of the 'Notable Road Verges' is fairly random, reflecting available information. No formal criteria have been applied, but generally those chosen reflect one or more of the following:

- The site has past/existing botanical/invertebrate data indicating an importance (generally rare or special species or communities)
- Orchids were present on the site
- Recommendation from expert
- Good overall species variety

The Road Verge BAP presents an opportunity to review this process.

A comprehensive audit has not been carried out for the whole of West Sussex. However, surveys on some of the Notable Verges have been undertaken, including full botanical surveys of all Notable Road Verges in the High Weald and Low Weald Countryside Areas. However these have only included botanical and entomological surveys. It is thus not possible to place the West Sussex Notable Road Verges in a regional or national context. There are examples from other Counties that would enable such comparison if systematic data were available.

Frog/Toad Crossings

There are 17 toad crossings in West Sussex. Volunteers help the toads across the roads at most sites although at some there are plastic guards along a length of the verge guiding the toads to a tunnel that goes under the road.

Drawing of toad (not squashed!)

2.5 There are essentially two categories of species covered by legislation, those regarded as "pests" and those given protection because of their conservation status. There are those named in the Weeds Act 1959 and the Wildlife and Countryside Act 1981 (as amended) which are regarded as a "pests" in the environment, and those named in legislation because of their particular conservation significance. In addition there are a number of species associated with the road verge habitat that are protected by specific legislation, notably the badger, giving them some degree of protection. In addition there are the categories of species previously mentioned that have different levels of status though no statutory protection. The Countryside and Rights of Way Act 2000 has no specific reference to road verges, but places a statutory duty on Government departments to have regard to biodiversity conservation, and has further provisions relating to SSSIs and species protection.

2.6 Appendix 4 contains tables which highlight those species which are regarded as pest and are covered by the Weed Act of 1959 and are found on West Sussex road verges and those which are offered some degree of protection and are found on West Sussex road verges.

2.7 The Highway Network Services of the County Council maintains all of the roads in the county except for the trunk roads. They maintain a measure of the total extent of road verges in West Sussex relating to County Roads.

TYPE	TOTAL	MEASURE
Total carriageway (centre line length)	3,960	kilometres
Maintained Rural grass	8,676,669	Metres squared
Maintained Urban grass	5,464,111	Metres squared

2.8 The Highways Agency maintains all trunk roads in the county, which are the M23, A23 and A27. They keep a measure of the length and area of trunk road that they maintain.

TYPE	TOTAL	MEASURE
Total carriageway (centre line length)	87.1	kilometres
Maintained Rural grass	Not available	hectares
Maintained Urban grass	Not available	hectares

2.9 At present, whilst the overall extent and distribution of road verges is known, only the extent and character of a limited number is properly catalogued from a Biodiversity Audit point of view.

3. Importance of the Habitat

3.1 Road verges are important in their own right, but they also have the potential to link otherwise fragmentary areas of habitat and may form important local refuges for wildlife. They are also a useful "buffer" to adjacent habitats such as hedges or meadows, ditches or chalk grassland.

3.2 The importance of each verge depends on its management. Although few road verges are managed solely with ecology in mind, through the normal maintenance of the verges there are two important ecological communities that develop.

Early succession.

Road verges are often subjected to periodic disturbance through the maintenance or installation of services (gas, water and electricity for example) or "scalping" by mowing or vehicle disturbance. They often incorporate steep banks, which in certain geologies are slow to colonise. Both the disturbance and steepness tends to favour early to mid "successional" species. These early successional stages are important ecologically for certain plants and insects and their natural succession is to be encouraged. Seeding with inappropriate species should be avoided. Some plants normally associated with long established habitats may very

successfully colonise disturbed ground if it is left to develop naturally, for example, orchids. Clearly the decision on whether to seed (with local provenance) or allow colonisation to occur naturally, would depend on the habitat involved or on the individual site.

Mature, but consistently managed.

Road verges such as those often found in the clay Weald and the Downs, reflect the habitats of old meadows and chalk grassland, they are often very species rich and support otherwise uncommon species. Details of these open habitats of road verges are described in each relevant HAP.

3.3 Although the road verge network covers an extensive area, and is very diverse, a lack of systematic survey information means there is currently no measure of importance of the habitat as a whole.

3.4 A number of species associated with the 'notable verges' are however, of significance as has been illustrated earlier. These are listed in Appendix 4.

3.5 The lack of pesticides, fertilisers and of intensive agriculture on many road verges makes them valuable relics of established habitats, almost throwbacks to the past!

4. Importance for People, Local Community and Cultural Significance

4.1 Interest for enthusiasts

A site that is recognised as being a 'Notable Road Verge' will provide an interest for enthusiasts, as it will provide a home for various species of flora and fauna. With the reduction of such habitats as meadowland, it is extremely valuable to maintain sites that can still support these organisms. If the interest of enthusiasts is gained, they may be encouraged to assist in the protection and maintenance of the road verge, such as already happens though some members of the SBRS, subject to safety issues - see appendix 6.

4.2 Cultural heritage

Today, road verges are often seen as a by-product of a technical intrusion into the natural environment. In the past they were often a valuable part of rural land management, providing important fodder or bedding for a range of farm animals, for example drove roads are country lanes with wide verges. Animals were driven along them from winter to summer grazing or to market and could feed on the wide verges along the way. As certain habitats are lost or are changed as a result of changing management schemes or increased development, it is important to conserve the small samples of such habitats that still exist on some of the West Sussex road verges. By conserving these habitats the wildlife that relies on them are also protected.

4.3 Community interest

The local community (as has been evidenced by consultation carried out in 1999 for the preparation of the Chichester District BAP - a Wealth of Wildlife) value the appearance and biodiversity interest of the road verge. There are opportunities for the community to be involved in an audit of the local area and verges could feature in this, subject to safety issues - see appendix 6.

4.4 Aesthetics

Views on 'good management' are very varied. Some view wild flowers as weeds, whilst others see them as a nature reserve. Whatever the viewpoint, safety has to be a paramount issue. If a road verge is maintained and protected efficiently, it is hoped that the flora that is encouraged to grow will provide an aesthetically pleasing site, through the varied plant composition and subsequent colour. Having better managed, more pleasant, verges in the county will improve the quality of life for local residents. The vast majority of residents in West Sussex use the road network. If visual attractiveness and biodiversity are maintained, this should make the journeys of those travelling along the road more pleasant.

4.5 Rich ingredient in the landscape jigsaw

With an ever-increasing pressure being placed on local authorities to develop more housing sites, and farming methods continuously changing, natural habitats are becoming increasingly scarce.

Another major benefit of protecting and efficiently managing the county's road verges is that corridors or 'green ways' can be created. Corridors allow organisms to migrate from one site to another and ensure the variety of the gene pool is not reduced. Road verges also provide an important buffer to adjacent habitats such as meadows, chalk grassland, ditches and hedges.

4.6 Perception of weeds and tidiness

If a site is either mismanaged or not managed at all, certain weed species can take a hold. The weeds that cause the main problems are ragwort, Japanese knotweed, docks and thistles. By effectively managing a road verge, it is possible to control the number of these weeds on or around the site. The benefits that result from this are that not only is it easier for other plants to colonise, but also the appearance of the verge would be improved, and neighbours will be less likely to be affected through colonisation of weeds from the verges. Some members of the public, especially in urban areas, regard long vegetation on verges as an untidy nuisance and the grass and flower species in general as weeds. It is important to inform local people that verges are deliberately left long for the wildlife on them. Competitions such as Best Kept Village, in which the perception of 'best' is a tidy frequently cut area, could include the importance of verges for wildlife.

5. Benefits to Local Business

5.1 The management of road verges can offer economical opportunities for landowners, consultants, and contractors and for tourism. Surveys required would either bring benefits to local groups or consultants, whichever are selected for the task of surveying selected sites. The benefits will come in the form of fees paid for their services and/or the chance to have a say in the management of each site they survey.

5.2 If those people travelling along the road network in West Sussex are impressed with the quality and general appearance of the verges, it is hoped that they may be encouraged to stop or revisit the county. This should benefit local businesses.

5.3 At present, some roundabouts are "sponsored" by local firms. This provides advertising for the company and achieves management on behalf of the Highway Network Services. In the context of Biodiversity, these landscaped roundabouts do not add to the resource.

5.4 Roundabouts and indeed Notable Road Verges could be sponsored by business, but managed with biodiversity in mind, rather than landscaped with ornamental/introduced plants. The sponsorship could dictate that the roundabout is managed with biodiversity in mind, perhaps as a promotion for scarce habitats such as heathland or meadows.

6. Trends and Threats

6.1 Trends and threats are intimately linked, and trends are both positive and negative. The main trend is that more uniform, less open and narrower verges predominate. The table below contains some of the main trends and explanations of current concern.

TRENDS AND DIRECTION IN RELATION TO BIODIVERSITY	EXAMPLES OF CAUSES/COMMENTS
Loss of older established verges -ve Loss of variety -ve Loss of open habitat -ve Loss of elements of bare ground -ve	<p>Vegetation succession leads to replacement of herb-rich grassland either by an extension of the hedge or more general scrub growth</p> <p>Relating to the succession, insufficient management where the gradual invasive growth of hedges, woodland and shrubs, particularly non-natives such as rhododendron, gradually "squeezes" the open verge habitat.</p> <p>Cutting at inappropriate time of year leads to verges rich in biodiversity being taken over by a smaller number of more vigorous species thus decreasing the biodiversity.</p> <p>Cutting programmes which leave arisings in place leading to the</p>

TRENDS AND DIRECTION IN RELATION TO BIODIVERSITY	EXAMPLES OF CAUSES/COMMENTS
	<p>development of coarse species poor grassland, arisings can also mulch out other plants and lead to weed growth</p> <p>Planting of decorative non-native plants or trees without taking account of existing biodiversity interest and of seeding with grasses from inappropriate sources or of inappropriate species.</p> <p>Increased development and associated roads bringing about the need for increased road salting and an increased risk of chemical spills. WSCC will soon be experimenting with the use of "pre wetted salt" - this technique involves the use of less salt.</p> <p>Changed farming methods which removed the need to manage the verges as an extension to the farm, and may bring about excess run off of nutrients cumulatively effecting the verge habitat.</p>
Growth retardants/weed killers -ve and +ve	<p>Inappropriate use of growth retardants and weed killers can cause loss of biodiversity, as both applications are non-selective.</p> <p>The reduction in the use of chemicals on West Sussex rural verges means that they are now used only for noxious weeds to prevent weed growth.</p> <p>The County Council does NOT use growth retardants in West Sussex. The Highways Agency use growth retardants in some management areas, however if a sensitive area is known such as a special species the management area are to treat it appropriately and the use of retardants is refrained from. There is a detailed policy - see appendix 7.</p>
Erosion of verge -ve and +ve Reduction of verge -ve	<p>The inappropriate use of verges as parking areas by motorists and as off road tracks by cyclists, horse riders, pedestrians. (Damage from traffic is also of concern from a safety and maintenance point of view)</p> <p>The loss of the verge to hard surface paths.</p> <p>Road widening/new roads (although there are likely to be far fewer new roads in the near future) can result in the re-creation of succession habitats, but pressure for "instant green" can result in the loss of a potentially interesting habitat.</p>
Pollution -ve	<p>Increase in pollution levels. The nearer to the point of origin the greater the amounts of pollutants found as the heavier particles tend to fall only over a shorter distance. The detailed direct and indirect impact on biodiversity is of concern, but not quantified.</p>
Landscaping -ve and +ve Imported soils -ve	<p>Inappropriate landscaping, not adhering to Landscape Strategies and taking account of Character and Natural Areas can reduce, or reduce the potential for, Biodiversity/Biodiversity enhancement.</p> <p>Whilst sponsoring of roundabouts by firms has many benefits, the use of inappropriate non-native species and or imported soils could reduce biodiversity, whilst there is also the opportunity for positive biodiversity</p>
Disturbance -ve and +ve	<p>Laying of services. As services need to be repaired or new ones laid alongside the road, whether they are for gas, water, electricity or telecommunication systems, the verge may well be disturbed. If left "un-seeded" this can result in the establishment of native pioneer habitats, particularly on chalk and sandstone, and can also be beneficial for arable annuals. Inappropriate aftercare such as reseeding with ryegrass mixtures reduces the potential biodiversity of the disturbed area and may allow those reseeded species to colonise and dominate surrounding areas of verge, reducing the established biodiversity. Therefore careful control of re-instatement is required.</p>

TRENDS AND DIRECTION IN RELATION TO BIODIVERSITY	EXAMPLES OF CAUSES/COMMENTS
	<p>Fly tipping. The removal of waste due to fly tipping is the responsibility of the District Councils. The dumping of waste is a serious problem and with tighter legislation, there is an increasing threat. Fly tipping can cause damage not only from the items being placed onto the vegetation, but also from chemicals that may leak out from items left.</p>

7. Potential

7.1 The potential for Biodiversity enhancement of the road verge habitat is great, but it will not be possible to make changes overnight. In principle the following suggestions could increase the Biodiversity of the road verge habitat.

7.2 The introduction of **overall more environmentally sensitive management** over the road verge network could increase the conservation value of the entire county. With the correct type of management, the road verges throughout the county could be transformed into a valuable wildlife resource, by allowing the vegetation on the road verges to flourish, and with this other organisms could colonise the sites. However, note will need to be taken of the varied growth and interest of verges on different soil types and in different parts of the County.

7.3 The introduction of "**Wildlife Corridors**" or "Green Ways" using road verges as part of the network could enhance wildlife along the road verge, as the verges would be part of a wider habitat mosaic. There could be extensive "Green Ways" linking areas, such that wildlife corridors are formed to assist the movement of wildlife from area to area. This is particularly important with the reduction and fragmentation of habitat sites as a result of over development and changing farming methods. Without the "Wildlife Corridors", the gene pools of certain populations could be threatened. This threat comes in the form of organisms not being able to respond and adapt to the changes to their habitat genetically, due to falling population numbers and those decreased populations not being able to move between sites and breed with nearby populations.

7.4 Occasionally **roundabouts** are extensive and reflect the underlying soils and geology. They could be managed specifically for wildlife and provide an impressive show of appropriate wildflowers, subject to safety (visibility) provision.

7.5 When **new verges** are created it is important that local soils are used. Sites should be left to colonise naturally or, if seeding is deemed more appropriate, local provenance seeds (such as are available through the Weald Meadows Initiative) should be used wherever possible. Appropriate management is needed both to establish and maintain the desired flora, with different requirements at each stage.

7.6 A **reduction in the storage of materials** on the verge would help ensure that Biodiversity is not inadvertently destroyed.

7.7 The potential for **community involvement** is high. Subject to strict safety requirements, it would be possible to involve local communities in both recording and auditing their local road verges for habitat and associated species, but also adopting them for monitoring.

7.8 The **collection of arisings** would reduce overall fertility, there by favouring the less vigorous wild plants and associated wildlife. In addition, the collection and use of such material for **Green Composting** would also be providing an important alternative to peat.

7.9 **Interpretation and informal environmental education** potential could be increased through greater publicity of the value and significance of the wildlife associated with the road verge habitat and in particular through the **involvement of local communities**, through initiatives such as those promoted via Local District BAPs.

7.10 The development of **pilot projects** to test some of the more innovative approaches to road verge management, including rotational management, collection of arisings, one cut only, and variation in cutting time according to location

8. Current Action

8.1 In West Sussex, both the County Council and the Highways Agency have responsibility for highway maintenance.

WSSC

8.2 In maintaining the highway network, the County Council follows the guidance of 'Delivering Best Value in Highway Maintenance' the Code of Practice for Maintenance Management. Road safety is an over-riding consideration in all road verge management.

8.3 Management – Current Specifications

Urban Grass cutting

The County Highway Authority undertakes this work or funds some District Councils to undertake a maximum of seven cuts per year within the Urban Areas. In some cases this is extended by separate additional cuts funded by the District Council or the Parish Council - in some cases up to 14 cuts per year.

Rural Grass cutting

The Highway Network Services undertakes to implement three cuts per year - two 1 metre swathe cuts (early and middle year) and one overall cut (late year), together with regular visibility cuts throughout the year.

The above Cutting Regime is undertaken by contractors, broadly following the periods indicated below, but in any one year a cutting period may start in *any* particular part of the County. The part of the County that the cutting period starts in may change from year to year.

	Early	Middle	Late
Months	May	August	November

Highways Agency

8.4 In West Sussex the Highways Agency is responsible for the M23, A23 and A27. Through their agents, in the case of West Sussex (as at July 2002), W.S. Atkins, the standard maintenance requirements are implemented. A strip of 1.2 metres from the edge of the carriageway is cut once or twice a year. Verges in urban areas, including roundabouts are cut 5 – 7 times a year. The exact cutting regime differs from management area to management area. (see also appendix 7). Account is taken of specific requirements as a result of identified conservation interest.

8.5 Contractors

WSSC

Highway Network Services - contracts are let on a five-year basis and are split between Urban and Rural.

Highways Agency

The Term Maintenance Contractor

8.6 Notable Road Verges

Notable Road Verges are subject to individual management recommendations [Appendix 5]. The 'Notable Road Verge' system undergoes minor revision annually. In 1999 marker posts were put in the western Area of the County as an experiment in order to provide a better guide to the contractors cutting the verges of their whereabouts. [See also detail under section 2.4]

8.7 Statutory undertakers

Work is carried out as and when necessary by the statutory undertakers (electricity, gas, water and telecommunications). They inform WSCC of the works and WSCC carry out spot checks, however there are only the resources to check a small percentage of the works carried out. Apart from street trees there are no guidelines as to minimising effects on biodiversity, either during or after the works and no guidelines as to best practice in biodiversity terms for aftercare of the works areas.

9. Agri Environment schemes

9.1 Agri Environment schemes are generally not applicable to road verges, however, adjacent land may well be entered into such a scheme, be it relating to the land or the bordering hedgerows and margins. It would be desirable if the presence of unimproved verge grassland adjacent to farmland could be taken into account when evaluating proposed Agri environment schemes.

10. Objectives

Within the constraints of road safety and legal constraints, the primary objective is:

To maintain and enhance the Biodiversity of the road verge habitat.

In order to achieve this, the aims are to:

1. Continue to investigate and develop, where appropriate, the concepts, aims and aspirations of the Notable Road Verge scheme. This shall include costs and associated resource implications.
2. Develop a set of general guidelines for the management of Notable Road Verges in West Sussex that includes the enhancement of their conservation importance as a priority. They should also consider the various costs and possible revenues involved. These guidelines should be subject to regular review. These must take into account the safety requirements.
3. Develop guidelines for the selection and nomination of Notable Road Verges.
4. Compile a Schedule of Notable Road Verges to be disseminated to all relevant organisations and groups, and regularly reviewed. The schedule should include specific management requirements for each site.
5. Liaise with the Sussex Biodiversity Records Centre to organise the maintenance of a database of all species recorded at each Notable Road Verge site.
6. Monitor the effectiveness of specific management guidelines in maintaining or enhancing the conservation interest of verges in West Sussex.
7. Raise the profile of road verge conservation with the public, local business community and Local and Central Government and develop ways of involving these sectors in achieving the main objective and associated aims.

11. Targets

1. All relevant Local Authority, DETR, HA and Utilities policy documents to recognise the biodiversity importance of road verges.

2. Notable Road Verge schedule to be created and updated annually and distributed to relevant bodies and organisations.
3. Develop a system so that once potential Notable Road Verges are highlighted they are quickly surveyed and then scheduled within 3 weeks of survey.
4. Develop a county wide environmentally sensitive road verge maintenance by 2007.
5. All road verges currently included in the Notable Road Verge scheme to be appropriately marked and managed sympathetically by the end of 2004.
6. Notable Road Verge scheme to be publicised so that it is understood by the public and by relevant organisations by the end of 2004.
7. In association with SUs, produce an advisory note relating to Biodiversity best practice with regard to works associated with road verges by end of 2007.
8. Complete a review of the current Notable Road Verges by the end of 2005. To include a botanical survey of all Notable Road Verges, the development of guidelines for the selection of Notable Road Verges and research into the possibility of new Notable Road Verges.
9. Develop a monitoring system to examine the effects of varying management techniques on the biodiversity of road verges by end of 2004.
10. By the end of 2003 establish a group to oversee the implementation of this plan.
11. Non sensitive information to be made accessible to the wider community in e-format by end of 2005.
12. Employ a project officer by the end of 2003.

12. Costs

All of the following figures are from 2001 - 2002.

	Rural areas	Urban areas
Pence per square meter	1.2	9.7
Pounds per 1 km length of 1 metre width	0.009 per metre squared	0.013 per metre squared
Total Cost	£190,000	£550,000

To take the arisings away during cutting in rural areas, is estimated to cost about three times this figure.

13. Action Plan

ACTION	POTENTIAL DELIVERERS		YEAR (to be in place by)				MEETS Target No.	PRIORITY
	LEAD	PARTNERS	CURRENT ACTION	2004	2007	2012		
Note - The appointment of a Project Officer is seen as key to enable this Action Programme to be taken forward. When appointed the Project Officer will take the lead in many cases.								
POLICY AND LEGISLATION 1. Ensure that policies are in place within the relevant Local Authority and DETR/HA/Utilities policy documents that recognise the Biodiversity importance of road verges	LA's, DETR, HA, Utilities Project Officer	SWT and other voluntary bodies	✓	✓	✓	✓	1	1
2. Investigate the role of the Utilities in respect to the conservation of the Biodiversity of road verges	Utilities Project Officer	LA's, HA	✓	✓			1, 8	2
3. Ensure that information regarding Notable Road Verges is current and distributed to relevant bodies and organisations.	LA's Project Officer	SxBRC	✓	✓	✓	✓	2, 9	2
4. Ensure that habitats and species meriting designation, either statutory or non-statutory are so designated	EN, LA's, HA, Project Officer	SWT and other voluntary bodies	✓	✓	✓	✓	3	2

ACTION	POTENTIAL DELIVERERS		YEAR (to be in place by)				MEETS Target No.	PRIORITY
	LEAD	PARTNERS	CURRENT ACTION	2004	2007	2012		
SITE SAFEGUARD AND MANAGEMENT 1. Develop a brief for a project to investigate the development of a county-wide environmentally sensitive road verge maintenance regime to include the potential for harvesting cuttings, composting and/or hay and seed collection	LA's	EN, NGOs Weald Meadows Initiative	✓				4	1
2. Implement a project as described above on a pilot basis in an area of the County to be determined	LA's	EN, NGOs		✓			4	1
3. Following review of the existing Biodiversity of West Sussex road verges (see below) implement the Notable Road Verge Scheme in order to ensure such verges are clearly marked, understood by public, and all relevant organisations	LA's, HA	Local Community, NGOs		✓	✓	✓	5, 6	2
4. Develop a community project in partnership with Chichester District Council and the Sussex Downs Conservation Board	Chi DC, SDCB	Highway Authority		✓	✓		7	2
ADVISORY 1. Produce an advisory note for consultants/contractors/adjacent landowners relating to "Biodiversity Best Practice" with regard to works associated with existing/new road verges	LA's, HA			✓			8	1
2. Develop a safety protocol for those recording the road verge habitat.	Las, HA		✓				2, 4, 5, 9	1

ACTION	POTENTIAL DELIVERERS		YEAR (to be in place by)				MEETS Target No.	PRIORITY
	LEAD	PARTNERS	CURRENT ACTION	2004	2007	2012		
FUTURE RESEARCH AND MONITORING 1. Develop a brief for a project to undertake a systematic review of existing Notable Road Verges, to include the development of Criteria for selection of Notable Road Verges, and research the possibility of new Notable Road Verges. 2. Conduct botanical survey of Notable Road Verges to establish baseline data and undertake the systematic review of Notable Road Verges as detailed above. 3. Develop a brief for a project to devise a monitoring system to examine the effects of varying techniques of weed control on the overall biodiversity of the verges 4. Establish an ongoing implementation and monitoring group for road verges in West Sussex to oversee the implementation of the plan, to develop a monitoring strategy for the plan to include both the actions and the response of biodiversity.	LA's, HA	EN, NGOs	✓	✓			2, 9	2
	LA's		✓	✓			10	1
	LA's, HA	Universities EN		✓			10	3
	LAs	HA, others	✓				11	1

ACTION	POTENTIAL DELIVERERS		YEAR (to be in place by)				MEETS Target No.	PRIORITY
	LEAD	PARTNERS	CURRENT ACTION	2004	2007	2012		
COMMUNICATION AND PUBLICITY 1. Develop a communication "strategy" to enable non sensitive information to be accessible to the wider community to promote the understanding of the road verge habitat and species interest for the wider public and schools	LA's, HA, Project Officer	SxBRC		✓	✓	✓	1, 6, 12	2
OTHER ACTION 1. Seek funds to employ, and then employ, a Project Officer to first develop a series of briefs for a range of Projects as highlighted earlier	LA's, EN	HA, Business Sector, NGOs	✓	✓			13	1
REVIEW Review the plan in 2005					✓		1-13	3

APPENDICES

APPENDIX 1 - RELATED DOCUMENTS as at February 2001.

Highways Agency Transport Regional Maintenance Manual (TRMM) and Routine Maintenance Manual System (RMMS)

The RMMS does not state anything specifically to do with safeguarding biodiversity on verges, but does state that "a single width swathe cut shall be made on verges.....once in a growing season" and that "Where agreed by NCC, local Naturalists Trusts or other accredited bodies that a special system of management is required in areas of Special Scientific Interest (SSSI) or conservation interest, these shall be maintained in accordance with the agreed system".

Highways Agency Environmental Strategic Plan (see also appendix 7)

The biodiversity objective states that the Highways Agency will "...manage our network in a practical way which promotes the maintenance and enhancement of biodiversity.... In particular we seek to manage our estate so as to add to its existing value as a refuge and a linking feature for wildlife." The actions to achieve this objective are to develop a Biodiversity Action Plan (BAP), work with English Nature (EN) and other partners on a programme of research to develop understanding of biodiversity in the context of highways management and to implement a programme of engineering measures to protect wildlife from road traffic where highways cross their habitats.

This plan states the following

"BIODIVERSITY

Issue

Although modern road design has been greatly improved, both new and existing roads can have serious implications for wildlife and nature conservation if care is not taken over route planning, construction, operation and maintenance.

Objective

To manage our network in a practical way which promotes the maintenance and enhancement of biodiversity - that is to say the variety of life. In particular we seek to manage our own estate so as to add to its existing value as a refuge and a linking feature for wildlife.

Actions will include:

Developing a BAP for the management of our soft estate - the land surrounding our network - founded on the Government's action plans to protect species and habitats.

Working with EN and other partners on a programme of research to develop understanding of biodiversity in the context of highways management.

Implementing a programme of engineering measures to protect wildlife from road traffic where highways cross their habitats e.g. otters.

EXTRACT - HIGHWAYS AGENCY TOOL KIT - CREATING WILDFLOWER MEADOWS

"THE PROBLEM

Unmanaged grassland with little visual or nature interest

Often dominated by single species

Injurious weeds present

THE SOLUTION

Diversify and enrich existing grasslands with appropriate wildflower species

Manage grasslands to suppress highly competitive or invasive species

Provide wildflower areas in new schemes and improvements

Avoid use of nutrient-rich topsoil in areas designated for wildflowers

THE BENEFITS

Visual benefits for road users and residents

Provides habitat for insects and butterflies

Creates nectar lanes linking existing habitats

STATUS

Technique operational

Highways Agency Strategic Plan for Maintenance

This document has objectives to minimise the impact of maintenance on the environment. One objective is to “Reduce the impact of maintenance work on the environment taking account of... biodiversity...” The actions to be taken to help achieve this include “Forming partnerships and liaising with other government agencies and non-government agencies to maximise environmental benefits from maintenance.”.

Design Manual for Road Building Volume 10

HMSO - New Roads and Street Works Act - 1991

This document has guidelines for the utilities (Electricity, Water, Gas and Telecommunications), however there are no ecological policies listed for road verges. This is being reviewed.

National Joint Utilities Group - Guidelines for the planning, installation and maintenance of utility services in proximity to trees - April 1995

This document details how the utility services can avoid damage to trees during their works, but does not go into any wider biodiversity aspects.

Sussex Biodiversity Partnership - Habitat and Species Action Plans

Many of the other Habitat Action Plans (HAP) relate to road verges in that many verges will be small remnants of those habitats, for example heathland, neutral grassland or meadows and chalk grassland. Some of the species covered in the Species Action Plans (SAPs) also occur on road verges in this county such as barn owl.

West Sussex County Council (WSCC) - Nature Conservation Strategy for West Sussex.

This document has five aims, one of which is to protect important nature conservation sites and areas throughout the rural, urban and marine sectors of the county, through appropriate land use and management policies.

WSCC - Rural Landscape Strategy

One of the three broad aims of this document is to “sustain, conserve and enhance the environmental quality of the County”.

The WSCC Strategy 1997-2001

This document has, as its basis, four key priorities. Two of these can relate to road verges.

1. To preserve the rural character of West Sussex while promoting economic growth which is both viable and environmentally sustainable.
2. To improve community safety. By 2001 WSCC aimed to 'increase spending on highway maintenance to reduce accidents and produce visibly better road and footway standards on the most frequently used roads and pedestrian areas'.

The WSCC County Structure Plan

The most recent document is the 1998 one has not yet been formally adopted. It is being reviewed. It contains policies relating to designated sites, and policy C6 (7) states that Practical measures that the Planning Authorities will take to protect areas of importance for conservation will include "landscaping new roads appropriately and managing existing highway land for amenity and nature conservation purposes".

The WSCC Provisional Local Transport Plan

WSCC Highway Maintenance Plan - March 1999

This document contains an environmental policy (Chapter 3, page 18) which states that WSCC are '...conscious of the need to minimise the impact of roads and works on the environment...' and states that 'Processes that are environmentally friendly, recycle or re-use existing materials are always considered and will be used whenever they are cost effective.'

Chichester District Biodiversity Action Plan - A Wealth of Wildlife

-

District Council Local Plans

The District Local Plans all have policies to safeguard the general countryside by restricting development in countryside or green areas. Some mention particularly safeguarding certain sites such as SSSIs, SNCIs or Notable Road Verges. Further details can be sought from the District Councils.

Project Initiatives

Weald Heathland Heritage Lottery funded Project
High Weald AONB Unit-Meadows and Heath Initiatives
Sussex Downs Conservation Board-Heathland Initiative

APPENDIX 2

THE HIGHWAYS AGENCY, CONTACTS LIST FOR WEST SUSSEX

Southern Region Main Switchboard-0645 556575

Mike Ford (Area Manager)-01306 878219

Len Wyatt (National Biodiversity Co-ordinator)-0117 987 8833

Room 527.

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Compus Way,

Gillingham Business Park,

Gillingham,

Kent.

ME8 0NZ.

Katia Bresso – Ecologist.

01634 382139.

Neil Walby and Angela Wade – Landscape Architects.

01634 382122.

APPENDIX 3

WEST SUSSEX COUNTY COUNCIL HIGHWAY NETWORK SERVICES, CONTACTS LIST.

Theresa Wilway (Group Manager - maintenance management)-01243 753577

Trevor Edwards (Section Manager - maintenance management)-01243 777550

Sussex Highways Network Managers

Northern area-Roger England-01403 223900.

Western area-David Hill-01243 836900.

Southern area-Steve Corker-01903 878500.

APPENDIX 4

LIST OF PEST AND PROTECTED/IMPORTANT SPECIES

Pest Species

LEGISLATION	SPECIES
WEEDS ACT 1959 (injurious weeds)	Ragwort
	Broad-leaved dock
	Curled dock
	Creeping thistle
	Spear thistle
WILDLIFE AND COUNTRYSIDE ACT	Japanese knotweed
(species that it is illegal to introduce into the countryside)	Giant hogweed

Protected/Important Species

SPECIES CURRENTLY RECORDED ON ROAD VERGES IN WEST SUSSEX	CONSERVATION STATUS			
	Wildlife and Countryside Act	UK Biodiversity Species	Red Data Book	Sussex rare Species
A lichen <i>Peltigera canina</i>			Nationally scarce	√
A lichen <i>Thelidium microcarpum</i>			Nationally scarce	
Green-flowered helleborine <i>Epipactis phyllanthes</i>			Nationally scarce	√
Musk orchid <i>Herminium monorchis</i>			Nationally scarce	√
Italian lords and ladies <i>Arum italicum ssp. neglectum</i>			Nationally scarce	√
Spiked star of bethlehem <i>Ornithogalum pyrenaicum</i>			Nationally scarce	√
Small teasel <i>Dipsacus pilosus</i>				√
Fly honeysuckle <i>Lonicera xylosteum</i>			Vulnerable	√
Coralroot <i>Cardamine bulbifera</i>			Nationally scarce	√
Round-headed rampion <i>Pyteuma orbiculare</i>			Nationally scarce	√
Wild madder <i>Rubia peregrina</i>				√
Wild liquorice <i>Astragalus glycyphyllos</i>				√
Bastard balm <i>Melittis melissophyllum</i>			Nationally scarce	√
Spreading bellflower <i>Campanula patula</i>			Nationally scarce	√
Bluebell <i>Hyacinthoides non-scripta</i>	√	Long List		
Juniper <i>Juniperus communis</i>				√

SPECIES RECORDED ON ROAD VERGES IN WEST SUSSEX	CONSERVATION STATUS			
Trimeer's mining bee <i>Andrena trimmerana</i>			Notable/Nb	√
A bee <i>Andrena argentata</i>			Notable/Na	√
A bee <i>Andrena bimaculata</i>			Notable/Nb	√
A bee <i>Andrena congruens</i>			Notable/Na	√
A bee <i>Andrena florea</i>			RDB3	√
A bee <i>Andrena nitidiusculus</i>			RDB3	√
A bee <i>Andrena bucephala</i>			Notable/Na	√
A bee <i>Andrena varians</i>			Notable/Nb	
A bee <i>Andrena apicata</i>			Notable/Nb	√
A bee <i>Lasioglossum quadrinotatum</i>			Notable/Na	
Blue carpenter bee <i>Ceratina cyanea</i>			RDB3	√
A bee <i>Sphecodes longulus</i>			Notable/Na	√
A mason bee <i>Nomada pleurosticta</i>			Notable/Na	√
A cuckoo bee <i>Nomada flavopicta</i>			Notable/Nb	√
A cuckoo bee <i>Nomada fucata</i>			Notable/Na	√
Fringe horned mason bee <i>Osmia pilicornis</i>			Notable/Na	√
Two coloured mason bee <i>Osmia bicolor</i>			Notable/Nb	√
A wasp <i>Crabro scutellatus</i>			Notable/Na	√
A wasp <i>Crabro peltarius</i>			RDB3	√
A wasp <i>Nysson trimaculatus</i>			Notable/Nb	√
Small spurred digger wasp <i>Nysson dimidiatus</i>			Notable/Nb	√
A wasp <i>Ectemnius ruficornis</i>			Notable/Nb	√
A wasp <i>Psen bruxellensis</i>			Notable/Na	√
A spider hunting wasp <i>Priocnemis schioedtei</i>			Notable/Nb	√
A spider hunting wasp <i>Arachnospila wesmaeli</i>			Notable/Na	√
White mouthed digger wasp <i>Crossocerus leucostoma</i>			Notable/Na	
A wasp <i>Crossocerus exiguus</i>			RDB3	√
Small velvet ant <i>Smicromyrme rufipes</i>			Notable/Nb	√
Adonis blue <i>Lysandra bellargus</i>	Schedule 5	Middle List	Notable/Nb	√
Chalk-hill blue <i>Lysandra coridon</i>	Schedule 5	Long List	Local	
Small blue <i>Cupido minimus</i>	Schedule 5	Long List	Local	
Grayling <i>Hipparchia semele</i>			Local	√
Slow worm <i>Anguis fragilis</i>	Schedule 5	Long List		

APPENDIX 5

SCHEDULE OF NOTABLE ROAD VERGES

File ID (existing)	Site Name	National Grid Ref	Highways Area	Parish	District	Last recorded visit	Interest (keywords)	Management
N01	A264 Holmbush	TQ 235346	Northern	Colgate	Horsham	09/07/94	Botanical: Common spotted orchid and meadow species	Late cut only
W01A	A27 Avisford 'Site A'	SU 975068	Western	Walberton	Arun	20/06/94	Botanical: Bee orchid	Late cut only
W01B	A27 Avisford 'Site B'	SU 979070	Western	Walberton	Arun	20/06/94	Botanical: Southern marsh orchid	Late cut only
W01C	A27 Avisford 'Site C'	SU 985073	Western	Walberton	Arun	20/06/94	Entomological: wide variety of insets	Late cut only
W06	A272 Durford Abbey	SU 778237	Western	Rogate	Chichester	15/10/95	Botanical: Southern marsh orchid plus wide variety of plants	Late cut only
W37	A272 Old Carriageway	SU 817238	Western	Rogate	Chichester	19/07/95	Botanical: Spreading bell-flower	Early cut only
W05	A272 Rogate - Midhurst	SU 811238 - SU 877218	Western	Rogate - Midhurst	Chichester	12.93	Entomological: wide variety of insects	Late cut only
W07	A272 Trotton	SU 828231	Western	Trotton	Chichester		Entomological: rare bee	Late cut only

N03	A272/B2111 Jctn. Haywards Heath	TQ 359236	Northern	Haywards Heath	Mid Sussex	11/07/94	Botanical: Common spotted orchids	Late cut only
N04	A279 Horsham Rd.	TQ 252293	Northern	Slaugham	Mid Sussex	09/07/94	Botanical: Bistort	Early cut only
S04	A281 Woodmancot e	TQ 234147	Southern	Woodmanc ote	Horsham		Botanical: Coralroot bittercress	Late cut only
S06	A283 Steyning Rd.	TQ 204080	Southern	Shoreham	Adur		Botanical: Bee orchids	Late cut only
S07	A283 Washington Rd	TQ1671 25	Southern	Steyning	Horsham		Botanical: variety of orchids	Late cut only
S05A	A283/A27 Interchange Rdbt 'A'	TQ 209066	Southern	Shoreham	Adur		Botanical: Pyramidal orchids	Late cut only
S05b	A283/A27 Interchange Rdbt 'B'	TQ 209067	Southern	Shoreham	Adur		Botanical: Pyramidal orchids	Late cut only
W08	A284 Arundel London Road	TQ 012071	Western	Arundel	Arun		Botanical: 4 species of orchids plus downland flora	Late cut only
W09	A285 Duncton Hill	SU 954160	Western	Duncton	Chichester	20/06/94	Botanical: 3 species of orchid plus juniper bushes	Late cut only
W11	A286 Cocking	SU 875164	Western	Cocking	Chichester		Botanical: good range of flowering plants	Late cut only

W10	A286 Midhurst Road	SU 876140	Western	Singleton	Chichester	05/08/93	Botanical: Cowslips plus good downland flora	Late cut only
W04	A29 Bury Hill	TQ 003117	Western	Bury/Hough ton	Arun		Botanical: Wild liquorice and pyramidal orchid	Late cut only
W02	A29 Fairmile Bottom	SU 995101	Western	Madehurst	Arun		Botanical: downland plants	Late cut only
W03	A29 Whiteways Lodge roundabout	TQ 002107	Western	Houghton	Arun		Botanical: Pyramidal orchids	Late cut only
W35	Ambersham Hollow Road	SU 918218	Western	Easebourne	Chichester		Entomological: rare bees	Early cut only
W38	Appledram Lane Apuldram Lane	SU8440 45	Western	Appledram	Chichester	Apr-99	Botanical: Spiked star- of-bethlehem	Late cut only
N05	B2110 Hazelden Crossroads	TQ 378368	Northern	East Grinstead	Mid Sussex	06/06/95	Entomological: butterflies	Early cut Late cut
W13	B2141 Chilgrove	SU 827144	Western	West Dean	Chichester		Botanical: downland plants	Late cut only
S10	Barrow Hill	TQ 216156	Southern	Henfield	Horsham		Botanical: Rosy garlic plus others of historical interest	Late cut only
W26	Bedham Lane	TQ 014203	Western	Fittleworth	Chichester	16/10/95	Botanical: woodrushes	Late cut only

W22	Bepton Road	SU 875207	Western	Bepton	Chichester		Botanical: Bog violet and sedges	Late cut only
W33	Bignor Hill	SU 981137	Western	Bignor	Chichester		Botanical: downland flora	National Trust
W31	Bignor Park Road 'A'	SU 999159	Western	Bury	Arun	20/06/94	Botanical: Early purple orchids	Late cut only
W32	Bignor Park Road 'B'	TQ 004161	Western	Bury	Arun	16/10/95	Botanical: Early purple orchids	Late cut only
N08	Brantridge Lane	TQ 282283	Northern	Cuckfield Rural	Mid Sussex	09/07/94	Botanical: Blue lettuce	Late cut only
S21	Bridge Road, Littlehampton	TQ 018026	Southern	Little- hampton	Arun	March 2002	Botanical: Bee Orchids	Late cut only
W15	Broad Road	SU 804246	Western	Rogate	Chichester		Entomological: rare bee	Late cut only
W17	Bull Hill	SU 802263	Western	Rogate	Chichester	19/07/95	Botanical: Coralroot bittercress	Late cut only
N11	Church Lane, Plummers Plain	TQ 220281	Northern	Lower Beeding	Horsham	12/06/90	Botanical: Bastard balm	Late cut only
S19A	Coombes Road	TQ 200069	Southern	Coombes	Adur	1999	Entomological - Orange tip butterfly breeding on garlic mustard	Late cut only
S19B	Coombes Road	TQ 201068	Southern	Coombes	Adur	1999	Entomological - Orange tip butterfly breeding on garlic mustard	Late cut only

S19C	Coombes Road	TQ 198078	Southern	Lancing	Adur	1999	Entomological - Orange tip butterfly breeding on garlic mustard	Late cut only
W39	Drungewick Lane	TQ 053293	Western	Loxwood	Chichester	2001	Botanical: Early purple orchid	Late cut only
S11	Edburton Lane	TQ 234114	Southern	Upper Beeding	Horsham	1989	Botanical: Dwarf elder	Early cut only
W18A	Elsted Road	SU 795193	Western	Harting	Chichester	19/07/95	Botanical: Dwarf elder	Late cut only
W27	Fittleworth Road	TQ 039252	Western	Wisborough Green	Chichester	18/06/94	Botanical: Early purple orchid	Late cut only
W21	Folly Lane	SU 967163	Western	Duncton	Chichester	20/06/94	Botanical: Narrow-leaved everlasting pea	Late cut only
W24	Glasshouse Lane	TQ 014255	Western	Kirdford	Chichester	04/11/93	Botanical: Early purple orchid	Late cut only
S12	Greatham Brooks Road	TQ 026161	Southern	Parham	Horsham		Entomological: Green green bush cricket	Late cut only
W12	Harting Hill	SU 784185	Western	Harting	Chichester		Botanical: downland plants	Late cut only
W29A	Haslingbourne Lane 'A'	SU 996198	Western	Petworth	Chichester	16/10/95	Botanical: good variety	Late cut only
W29B	Haslingbourne Lane 'B'	SU 988199	Western	Petworth	Chichester	16/10/95	Botanical: good variety	Late cut only
S08	Henfield Road	TQ 208108	Southern	Upper Beeding	Horsham	06/07/95	Botanical: variety of orchids	Late cut only
S22	High Titten	TQ 032124	Southern	Amberley	Horsham	July 2000	Botanical: Lizard Orchid	Late cut only

W18B	Hollist Lane	SU 798197	Western	Harting	Chichester	19/07/95	Botanical: Dwarf elder	Late cut only
W41	Horsebridge Hill	SU 034229	Western	Wisborough Green	Chichester	June 2002	Botanical: Early Purple Orchid	Late cut only
N07	Langhurst Wood Rd.	TQ 176356	Northern	North Horsham	Horsham	10/05/95	Botanical: Coralroot bittercress	Late cut only
S03	Longfurlong	TQ 110090	Southern	Findon	Arun		Botanical: Round-headed rampion	Late cut only
N13	Mallions Lane	TQ 275265	Northern	Cuckfield Rural	Mid Sussex	09/07/94	Botanical: wide variety of species	Late cut only
S15	Malthouse Lane	TQ 293194	Southern	Hurstpierpoint	Mid Sussex		Botanical: Saw-wort and dyers greenweed	Late cut only
N06	Maplehurst Rd.	TQ 188238	Northern	Nuthurst	Horsham	11/07/94	Botanical: Dyers greenweed and orchids	Late cut only
W36A	Mill Road 'A'	TQ 022083	Western	Arundel	Arun	25/07/82	Botanical: Green-flowered helleborine	Late cut only
W36B	Mill Road 'B'	TQ 019077	Western	Arundel	Arun	25/07/82	Botanical: Green-flowered helleborine	Early cut only
W28A	Motor Road 'A' West Dean	SU 853129	Western	West Dean	Chichester		Botanical: good variety	Late cut only
W28B	Motor Road 'B' West Dean	SU 849141	Western	West Dean	Chichester		Botanical: good variety	Late cut only
S18	Northend Lane	TQ 280193	Southern	Hurstpierpoint	Mid Sussex	23/05/93	Botanical: variety of plants	Late cut only

S16	Parham Post Road	TQ 063127	Southern	Parham	Horsham	20/06/94	Botanical: honeysuckle	Fly	Late cut only
N12	Raggets Hill	TQ 280235	Northern	Cuckfield Rural	Mid Sussex	09/07/94	Botanical: helleborine	Violet	Late cut only
S13	Rock Road	TQ 111151	Southern	Ashington, Thakeham	Horsham	23/08/94	Botanical: Green-flowered helleborine		Late cut only
S23	Rock Road south	TQ 127136	Southern	Washington	Horsham	June 2001	Botanical: grassland flora	Acid	Late cut only
S14	Saddlescombe Road	TQ 267117	Southern	Newtimber	Mid Sussex		Botanical: orchids	Fragrant	Late cut only
W16	Shillinglee Road	SU 993315	Western	Plaistow	Chichester		Entomological: variety of insets	wide	Late cut only
S02	Shoreham Bypass	TQ 224066	Southern	Shoreham	Adur		Botanical: Kidney vetch		Late cut only
							Entomological: Small blue		
W42	Smugglers Lane	SU 844022	Western	Bosham	Chichester		Botanical: Green-winged Orchid		Late cut only
S09	Station Road	TQ 216156	Southern	Pulborough	Horsham		Entomological: rare bee		Late cut only
N10	Stone Hill	TQ 386353	Northern	East Grinstead	Mid Sussex	09/07/94	Botanical: greenweed and Common spotted orchid	Dyers and	Late cut only
W14	Stoughton B2147 B2146	SU 782094	Western	Stoughton	Chichester		Botanical: Small teasel		Late cut only

S17	Stream Lane	TQ 083181	Southern	West Chiltington	Horsham		Botanical: Lesser water parsnip	Early cut only
W25	Streels Lane	SU 974279	Western	Ebernoe	Chichester		Botanical: Broad-leaved helleborine	Early cut only
W23	The Trundle	SU 880111	Western	Singleton	Chichester	21/07/91	Botanical: Early purple and pyramidal orchids	Late cut only
N09	Treemans Rd. and Monteswood Ln.	TQ 38256	Northern	Horsted Keynes	Mid Sussex	11/07/94	Botanical: Twayblade and common spotted orchid	Late cut only
W34	Underhill Road	SU 883175	Western	Cocking	Chichester		Botanical: good variety	Cut by late Oct
S20	Warningcamp Lane	TQ 038068	Southern	Warningca mp	Arun		Entomological: glow worm	Very Late (after August)
S01	Washington Car Park	TQ 119119	Southern	Washington	Horsham	18/05/93	Botanical: Pyramidal orchards Entomological: Small blue	Late cut only
W20	West Burton Road	TQ 004135	Western	Bury	Arun	19/07/97	Botanical: Wild liquorice	Late cut only
W19	Windfall Wood Common	SU 927280	Western	Lurgashall	Chichester	19/07/95	Botanical: Early purple orchid	Late cut only
W30	Woodhorn Lane	SU 906054	Western	Oving	Chichester	16/06/93	Botanical: Bee orchids	Late cut only

APPENDIX 6

SAFETY



west
sussex
county
council

GENERIC RISK ASSESSMENT

For road Verge Botanical Recording on all Single Carriageway roads and roundabouts and dual carriageways (including roundabouts) with road speeds of up to 40 mph only.

HAZARD (non-exhaustive)	HAZARDOUS EVENT/ACTIVITY	WHO IS AT RISK Ecologist/ Botanist/ Public etc.	SAFE PRACTICE (Minimum Controls to <u>always</u> be in place)	RISK LEVEL LOW MED/HIGH	ADDITIONAL CONTROLS	RESIDUAL RISK LEVEL
Traffic	Impact from passing vehicles (esp. wing mirrors & lorries) when entering, working on, leaving site.	Botanist and Public/Drivers M/C, cyclists, etc	Maintain safe distance from live carriageway, (min. of 0.5 for road speeds up to 50m.p.h. and 1.2m for over 50 m.p.h.). This includes when exiting and entering parked vehicles (min distance from open door to edge of carriageway).	Medium/Low	Use co-worker to watch and warn. Operate in good visibility conditions only.	Low
	Vehicle impact when crossing the carriageway. Slips, trips, falls whilst crossing.	"	Exercise proper care when crossing-allow sufficient time for crossing. A <u>MINIMUM</u> of 3 seconds for each traffic lane to be crossed. (See rear sheet of assessment). Walk, do not run. Do <u>not</u> cross if unsafe - try again later. Wear high visibility clothing to EN471 Class 3 (sleeved garment). Wear anti-slip soles/at least non-smooth soled footwear. Ensure a reasonable standard of health and fitness. Avoid mud, debris, leaf mould etc. Ensure safe carriage of any equipment, ensure it is firmly attached to person and not impeding movement. Be aware!	Medium	Ensure good sight lines. Cross only when necessary. As a rule, record on the side where you are parked, unless moving vehicle and re-parking would pose a greater risk.	Low

	Careless/dangerous drivers actions resulting in accidents.	"	Be aware of surroundings. Drive with due care. No mobile phone use etc. while driving. Anticipate poor driving, speeding etc, from other approaching motorists as a norm.	Medium	Ensure vehicle is regularly serviced, MOT, weekly oil, tyre checks etc. Regular eye tests - wear glasses as required.	Medium (Cannot be reduced - high national 'at work' RTA rate.)
	Traffic whilst accessing/parking on/leaving verges.	"	Follow parking instructions in Verge Safe Working Instruction. In summary watch for following traffic, do <u>not</u> stop if they are too close and may impact with the rear of your vehicle. Allow time to move on/off the verge. Beware of mud or soft verges which could restrain your departure, then suddenly cause you to enter the live traffic lane. Allow <u>more</u> time, e.g. ensure approaching traffic is further away in these cases.	Medium	Ensure good sight lines - no parking too near blind bends. Regular eye tests - wear glasses if required. Regular health checks if a senior citizen. Engage Highway contractors to deliver you on site or use positive Traffic Control where necessary for blind bends, inadequate width verges etc.	Low
	Vehicle draught	"	Monitor safety distance-use 'watcher' to warn and pull back	Low	-	Low
Debris	Bits of old car, glass syringes, etc, partially buried or hidden in vegetation	"	Make initial inspection before starting work. Ensure first Aid Kit is available. Be vigilant. Wear stout footwear (ankle and midsole protection ideal).	Low	None suitable	Low
Slips, trips & falls	Uneven ground, hidden holes, missing manhole covers, etc.	"	Wear suitable stout footwear. Be aware-avoid being absorbed by task. Try to keep co-workers in sight. Greater care when ground is wet or muddy	Med/Low	-	Med/Low
Steep banks Deep water	Should be no activity on or near these high risk areas.	"	Do not get onto steep banks. Avoid close proximity to deep water. Consult Highway Authority and gain Contractor support for such high risk situations.	Low	-	Low
Plants	Sap/stings: Giant Hogweed, Wild Carrot, Rue, Nettles, Thorns	"	Wear gloves, full-length sleeves /trousers or protective clothing if necessary (e.g. head/face protection). Avoid unnecessary contact. Awareness of hazards.	Low	-	Low
Animals etc.	Dogs, Adders, Bees/Wasps, Brown Tailed Moth	"	Carry Dog Dazer, avoid confrontation. Exercise care, avoid nests, etc. Ensure co-workers know any allergies. Knowledge of locations and seasons when hazard is predominant.	Low	-	Low

Weather	Cold/very wet weather	-	Prepare for changeable weather - warm and waterproof clothing in car/on site.	Low	Avoid working in heavy rain/extreme cold, icy conditions. Poor visibility.	Low
	Sunburn-skin cancer, other heat related injuries	-	Brimmed hat, Sun-cream, Long sleeves/trousers. Take plenty of fluids (No alcohol). Sun glasses. Awareness of risk.	Med/High	Avoid working midday - 3 p.m. etc.	Med
Violence		-	Ensure no one is isolated from group. Do not confront aggressor. Withdraw from contact.	Low	Training if risk level increases. <u>No</u> lone working on site.	Low
Lone working		-	Carry mobile phone and have a known point of contact. (Involve family at home if necessary). Agree working hours. Agree safe working procedure with other Team members.	Med/High	<u>No</u> lone working - keep co-workers in site.	Low
Zoonoses (bio-hazards)	E.g. Toxicara, Tetanus, Weils disease etc.	Ecologists	Avoid handling faecal matter (or use gloves) Wash hands before eating/smoking etc. handwipes Ensure tetanus is in date. Awareness training. Carry Weils disease card for G.P.	Low		
Traffic whilst accessing and leaving roundabouts for recording purposes.	Crossing live running lane - vehicle impact	Botanist/ Travelling public	Wear full sleeved high visibility clothing. Cross during suitable gaps in traffic. Be sufficiently fit and healthy to cross with safety. Exercise proper care when crossing. Judge traffic speed and follow 3-second rule as a minimum. If unsafe - DO NOT ATTEMPT TO CROSS - return later. Avoid mud, debris, leaf mould etc.	Med	Avoid peak hour traffic Do not cross during periods of poor visibility - heavy rain, at dusk, etc.	Low
	Slips, trips, falls whilst crossing	"	As above - use suitable footwear - no smooth soles. Walk briskly <u>don't</u> run.	Med/Low	Be careful accessing roundabouts with built up stone frontages - allow more time for crossing and access.	Low
Traffic whilst recording on the roundabout	Traffic mounting roundabout - Traffic lorry wing mirrors etc. close to edge of roundabout	Botanist/ Travelling public	Ensure safety distances from edge of live carriageway (min of 0.5m for road speeds of up to 50 mph and 1.2m for over).	Med/Low	For accessing plants outside of safety zone (distance) always use a dedicated 'watcher'.	Low
Sloping roundabout, uneven surface. Wet surface, etc.	Slips, trips, falls.	"	Exercise caution, especially near edge of roundabout where falling, slipping and rolling onto the road is possible (sloping roundabouts, etc).	Med	Avoid recording in heavy rain; avoid wet grass, stones, mud, leaves, debris etc.	Low

Debris, plants, foliage, etc.	As for verge working	As for verge working	As for verge working	Low		Low
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INSTRUCTIONS FOR USE

1. This generic assessment relates only to the generic (general) factors of a common activity and does not cover those specific to a location or task other than botanical recording. It does not absolve the person/group undertaking the task from their legal duty to undertake a site-specific assessment as necessary. The content of this and any subsequent relevant adjustments/assessments must be made known to all botanical recorders operating adjacent to the highway, prior to site visits
2. Where this assessment is considered to be generally adequate for a specific task/location - an additional dynamic (on-site mental risk assessment) may be sufficient as an addendum. Any significant additional controls needed, as a result of the dynamic assessment, should however be noted on this existing assessment - or otherwise made known to all before work commencement. A dynamic assessment will always be needed as a minimum, in addition to this generic one. Where a high risk is estimated professional (Highway /Safety Group) assistance must always be obtained prior to any work commencement. Even for some work on minor roads the risk level may warrant assistance from professional contractors e.g. transport to and off site in a suitable vehicle, positive traffic control etc. This should not be the norm however.
3. Work adjacent to high-speed dual carriageway roads and roundabouts on high-speed roads poses a higher risk level. Written site-specific assessments or adjustments/addendum's to this generic must always be undertaken for such sites. A high risk is posed by approaching, parking, and leaving such sites so a pre-visit drive through will often be a pre-requisite for such assessments. Prior advice must be sought from the local Area Highway Office. (Peak traffic hours, traffic flow, additional safety requirements, signing etc) and the Councils Health and Safety Group where necessary. It may be necessary on such roads and roundabouts for competent Contractors in appropriate conspicuous etc vehicles, to deliver recorders to each site and collect them.

SAFE CROSSING OF LIVE CARRIAGEWAY - THE 3 SECOND RULE

A minimum of 3 seconds per lane to be crossed is needed. Multiply the number of lanes to be crossed by 150 to establish safe approaching vehicle distance. E.g. 2 (lanes) X 150 = 300m. The vehicles in the outside lane need to be at least 300m away as you begin to cross the first (inside) lane. Allow much more time for persons who are not especially young, fit and healthy. **N.B. There should be no time constraints placed on botanical recorders who should only cross when it is absolutely safe to do so. The 3 second rule is a bare minimum based on HSE Guidance for competent and trained Contractors.**

Assessment Date: Sept. 01

Assessment by: E&D and PSU Safety Group WSCC

Assessor(s): A. Griffiths and C.J.Eley

Signed by:

Review Date: During Sept. 02 and earlier as required

Review By: E&D with PSU Safety Group

APPENDIX 7

HIGHWAYS AGENCY POLICY.

The following is an extract from the Highways Agency policy version 2 Amendment number 2 of August 1999.

Volume 2 Part 1

Chapter 1.10 Grassed Areas

1.10 Landscape Maintenance (Grassed areas and scrub)

1.10.1 General

The requirements of this and the following chapter relate to the maintenance of all landscapes and ecological elements within the Highways Agency's responsibility, to trees within falling distance of the highway and to hard surfaced areas that are to be maintained free from vegetation. DMRB Vol. 10 provides advice on landscape and nature conservation issues. The Landscape Management Advice Note (DMRB vol. 10A) will give further advice on landscape maintenance when published.

Safety of the highway user is of prime concern but amenity, nature conservation and nuisance to others must also be considered. The design intention of landscape schemes, i.e. the landscape and ecological functions (formerly landscape objectives), must be taken into account and commitments made in Environmental Statements, at public consultation and at Public Inquiry must be honoured.

Expert advice from landscape managers should be sought to achieve the correct balance between safety, amenity, nature conservation and value for money. They will confirm when additional specialist advice is required. Where landscape management plans exist, they should be used to inform maintenance requirements as part of route management strategies. Where environmental databases exist they should be consulted before any work is carried out.

Named species and habitats are protected under UK and EC legislation and all highway works must comply. Where designated sites lie within or adjacent to the highway boundary, the soft estate should be maintained on the advice of English Nature or local wildlife trusts.

The Highways Agency is developing a BAP for the network to protect and enhance species and habitats. This will help to inform maintenance programmes in addition to delivering actions set out in the Government's species and HAPs and in local BAPs where they include highway verges.

Legislation requires that English Nature are informed where important habitats and species may be affected, such as removal of trees used as bat roosts. This should be done well in advance of the work to allow for seasonal factors.

Grassed areas and scrub.

Vegetation must not restrict visibility at junctions, access points and bends. Sight lines and minimum stopping distances must be kept clear and signs, lights and marker posts must not be obstructed. Visibility cuts may be required in accordance with the appropriate Technical Directives.

Overhanging vegetation must not obstruct users of the highway or highway personnel carrying out inspections or surveys. One or two cuts a year in the form of a swathe cut may be sufficient to maintain verges for safety, but amenity and nature conservation requirements must also be considered. Edging (siding) may be required on a cyclical basis.

Standards of maintenance should reflect the surrounding landscape. A higher standard of maintenance for amenity may be appropriate in built up areas where housing and businesses front the highway and on important “port of entry” routes into England. The cost of removing cuttings may be prohibitive when balanced against traffic management, but more frequent cutting can reduce costs where this is appropriate.

Highway verges that have developed botanical interest or nature conservation value, whether by design or through the development of the existing verge over time, should be managed to conserve and enhance the nature conservation value.

Weeds can cause problems if they spread prolifically and control methods may include the use of herbicides. The Control of Pesticides Regulations 1986 govern the use of pesticides and require that persons specifying and applying pesticides hold the appropriate certification.

The Highways Agency is committed to taking a proactive approach to controlling the **injurious weeds** which are covered by the Weeds Act 1959 and the Wildlife and Countryside Act 1981. Where injurious weeds on highway land are causing a nuisance to adjacent landowners, it is advisable to work with the adjacent landowner to ensure that weed control measures are undertaken simultaneously to avoid recontamination across the highway boundary.

Scrub species such as gorse and bramble can become a fire hazard as they mature and their removal may be necessary on safety grounds. Alternatively, where there is a nature conservation or amenity value, the plants may be cut back on a cyclical basis to maintain juvenile growth.

1.10.2 Inspection Requirements

Detailed Inspections

Grassed Areas - biannual inspections as a minimum.

1.10.3 Maintenance Requirements

Visibility cuts - one or two cuts per year.

Swathe cuts - one or two cuts per year.

Grassed areas (including weed control) - to be advised by landscape manager.

Injurious weeds - one treatment per year, or as advised by landscape manager.

1.11 Landscape Maintenance (Hedges, trees and planted areas, wetlands and special ecological measures)

1.11.1 General

This chapter includes boundary hedges which remain the responsibility of the Highways Agency, individual street trees and planted areas. It also relates to the maintenance of wetlands for nature conservation and to special ecological measures.

Hedges, trees and planted areas.

Where hedges were planted alongside a motorway fence, it was intended that they should be laid and maintained to produce a stockproof barrier, to replace the fence. This has seldom been carried out and the options include gaining access from adjacent land to repair the fence or laying and maintaining the hedge.

The Highways Agency is currently exempt from, but acts in the spirit of, the Hedgerow Regulations 1997, and where hedgerows are affected by our work, they should be protected. Where a hedgerow or part of a hedgerow has to be removed, it should be replaced and those which would qualify as “important” under the Hedgerow Regulations should be replaced as essential mitigation.

Trees are important for amenity and nature conservation reasons and should be preserved but they can be a serious hazard to highway users and adjoining land users if they are allowed to become unstable. The HA is also responsible for ensuring that trees outside the highway boundary but within falling distance are safe; all trees within falling distance are collectively termed “highway trees”. Section 154 of the Highways Act 1980 empowers the HA to deal with hedges, trees and shrubs growing on adjacent land and which overhang the highway.

Inspections by highway maintenance personnel during the normal course of inspections can reveal evidence of damage to trees or signs of ill health and expert arboricultural advice should then be sought. All highway trees require an arboricultural inspection every five years but this period may be reduced on the advice of an arboriculturalist.

It is important that arboricultural advice is obtained to advise on the appropriate frequency of inspections and works required for each individual street or mature tree. Trees which have to be removed should be replaced as close as possible to the original location. Whilst the HA is currently exempt from tree preservation orders (TPOs), some highway trees may be protected by a TPO and it is advisable to inform the local authority tree officer of intended works.

Planted areas may comprise native trees and shrub species on the inter-urban network, or non-native species in urban areas. Appropriate management techniques including thinning, coppicing and pruning will be required to achieve the desired intention.

For older plots of trees where the original design intention is unknown, expert advice will be required to determine the most appropriate management techniques for the age and species mix of the plot, taking measures to minimise any adverse impacts on adjoining landowners and occupiers. In particular, thinning must be carried out with care where plots perform a screening function or have nature conservation value.

Legislation requires that English Nature are informed where important habitats and species may be affected, such as removal of trees used as bat roosts. This should be done well in advance of the work to

allow for seasonal factors. It is also advisable to inform the local authority or local residents in advance of works to remove trees. In some cases there may be other authorities which require notification before any work takes place.

Pest control.

New planting schemes may be vulnerable to animal damage and will require protection. It is important that protection measures are maintained for as long as they are required. Rabbits are of particular concern to farmers on adjacent land. The Highways Agency is not covered by legislation, notably the Pests Act 1954, but the HA should take a proactive approach and work with adjacent landowners to carry out control methods simultaneously. The Highways Agency is not obliged to provide fencing to prevent rabbits moving onto adjacent land or to prevent recontamination across the highway boundary and the correct solution will be determined by site-specific requirements and value for money.

Plant diseases can cause extensive damage and expert advice will be required to determine the appropriate methods of control. Diseased plant material must be disposed of in accordance with horticultural best practice and, when a disease is notifiable, in accordance with MAFF's recommendations.

Wetlands.

Drainage ditches and balancing ponds are increasingly being developed for their nature conservation value and maintenance must be carried out using techniques timed to be least damaging to the flora and fauna. Expert advice from an ecologist should be sought to determine the correct methods and timings of the works. Even where nature conservation was not a design objective, water bodies may develop nature conservation value. In cases where there has been no ecological survey since the last maintenance operation was carried out, or there has been no regular ecological inspection, the advice of an ecologist should be sought.

Special ecological measures.

The HA has installed fencing to prevent deer and other animals crossing the highway, it has also provided measures such as badger tunnels and bat boxes, often as essential mitigation. These measures must be maintained so that they continue to be effective and meet the HA's commitments. Expert advice from an ecologist should be sought to determine the correct techniques and the timing of maintenance works. Where the HA is committed to monitoring special ecological measures, monitoring must be carried out by ecologists with the correct specialist knowledge.

Hard surfaced areas.

Vegetation should be removed from areas of the highway such as hard central reserves by methods which are appropriate for the location, in accordance with the Control of Pesticides Regulations 1986. In areas where mechanical methods cannot be used for reasons of safety, herbicide applications may be the most cost effective method of control.

1.11.2 Inspection Requirements

Hedges, trees and planted areas - twice a year as a minimum, inspections of highway trees should be annual with arboricultural inspections at least every five years.

Wetlands - twice a year, or as advised by ecologist.

Special ecological measures - twice a year, or as advised by ecologist.

1.11.3 Maintenance Requirements

Pest control - as advised by landscape manager.

Hedges and trees and planted areas - as advised by landscape manager; highway tree works to be advised by arboriculturist.

Wetlands - as advised by ecologist.

Special ecological measures - as advised by ecologist.

APPENDIX 8

ROAD VERGE HAP LEAD AND WORKING GROUP

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