

INTERIM ADVICE NOTE 100/07

Environmental Design

DMRB 10.0.XX

Interim Advice

CONTENTS

- 1 Introduction
- 2 Background
- 3 Contents of a Cultural Heritage Asset Management Plan
- 4 Management Options by Asset Category
- 5 Sources of Further Information and Advice

Glossary
Bibliography

Interim Advice

1 INTRODUCTION

1.1 This advice will form a new part of the HA's Design Manual for Roads and Bridges (DMRB), Volume 10. It is intended to assist the Highways Agency's Area Managers, Managing Agents, Consultants and Contractors in their management of cultural heritage assets on the Highways Agency's estate through Cultural Heritage Asset Management Plans (CHAMPs). The process of preparing CHAMPs depends upon the population of the databases in the HA's Environmental Information System (EnvIS) as set out in IAN 84/07. The databases not expected to be populated until 2009.

1.2 This advice does not apply in the devolved administrations of Wales, Scotland and Northern Ireland.

1.3 The advice is intended to help to identify the scope of cultural heritage asset management, and to assess priorities, advise on the preparation of management proposals, and monitor the effectiveness of the process, in order to fulfil the HA's obligations towards the historic environment. These are contained in the *Protocol for the Care of the Government's Historic Estate* issued by the Department of Culture, Media and Sport in 2003. The *Protocol*, made mandatory in the *Common Minimum Standards for the Procurement of Built Environments in the Public Sector* (Office of Government and Commerce 2005) requires government departments and agencies to:

- Nominate a conservation officer,
- Use consultants and contractors with appropriate expertise,
- Commission regular condition surveys,
- Develop site specific management guidance,
- Implement a planned programme of maintenance and repairs,
- Protect buildings at risk,
- Safeguard historic buildings that are in the course of disposal,
- Comply with the non-statutory notification procedures for Crown bodies,
- Ensure that the design quality of any new work enhances the historic environment, and
- Prepare biennial conservation reports.

The Department for Transport co-ordinates the HA's input into this process, but the HA provides the database and the management structure that ensures that the requirements of the *Protocol* are met.

1.4 Trunk roads and their environs contain areas of considerable value for cultural heritage. Cultural heritage assets potentially affected by roads include buried remains, historic structures and historic landscapes through which roads pass.

1.5 Road improvements, management, maintenance, safety measures and traffic management can all have significant effects on this heritage, both adverse and beneficial. Road-related activities that may affect cultural heritage resources can range from major road building projects to the installation of electronic information systems or lighting. Trunk roads can also affect the settings of adjacent historic monuments and landscapes.

1.6 The objective of Cultural Heritage Asset Management Plans (CHAMPs) is to ensure that valuable historic assets within and adjacent to the highway estate are protected from roads maintenance and management activities, as far as is practicable and cost effective. The aims of CHAMPs are:

- To analyse the HA's inventory of cultural heritage assets within and adjacent to the highway estate, contained in the Highways Agency's Environmental Information System (EnvIS, see IAN 84/07).
- To identify priorities for management
- Prepare proposals for action to protect and enhance assets
- Implement the actions
- Monitor the process and feed information to EnvIS

1.7 CHAMPs will allow the Highways Agency to undertake maintenance and management while maintaining the key HA environmental objective: "To minimise the impact of the trunk road network on both the natural and built environment." (*Towards a Balance With Nature* HA Environmental Strategic Plan), and in accordance with IAN 84/07.

1.8 The principles underlying the preparation and implementation of CHAMPs are to:

- Develop cost-effective cultural heritage management practices for all aspects of the trunk road estate, aimed at maintaining and, where appropriate, enhancing, cultural heritage resources, in balance with other uses of the land
- Ensure a presumption in favour of the preservation *in situ* of cultural heritage assets
- Meet reasonable targets (both in terms of cost and appropriateness) for the preservation and enhancement of cultural heritage assets
- Establish partnerships with neighbouring landowners and relevant organisations, where appropriate, to optimise the value and efficiency of cultural heritage management
- Respect statutory and non-statutory designated assets adjacent to the trunk road, in order to manage the estate in these areas in a way that buffers and protects them as far as is practicable and cost effective
- Consider existing CHAMPs when undertaking road improvement schemes, maintenance and technical communications works
- Carry out mitigation where practicable of unavoidable negative impacts on cultural heritage assets
- Promote cultural heritage awareness within the HA and its agents
- Publish of the results of regular CHAMP reviews to monitor the progress towards achieving the Government's aims and objectives for cultural heritage.

1.9 The Traffic Operations Directorate of the Highways Agency will be the owner of the plans. Managing Agents will carry out the analysis of the inventory database (through EnvIS), identify priorities and prepare CHAMPs, bidding for funds to carry out the identified actions within the existing procurement procedures. The framework for undertaking the process may be route-based or area based, depending upon the situation of the assets, the response of the Managing Agent and other relevant considerations, such as balancing costs etc.

1.10 The main text of this Advice sets out the background and aims of CHAMPs, the methodologies for analysing the EnvIS database, the contents of a CHAMP, the procedures for preparing it, and the methods available for implementing it.

1.11 Useful documents related to conservation and heritage management are listed in the bibliography, and organisations that can offer specialist advice are listed in Chapter 5. The Countryside Agency guidance note *Preparing a Heritage Management Plan* for estate managers of property granted conditional exemption from capital taxation or in receipt of a Maintenance Fund has been consulted in the preparation of this HA advice. The Countryside Agency guidance is available at www.countryside.gov.uk/heritagelandscapes.

2 BACKGROUND

2.1 The preservation and enhancement of the cultural heritage resource is generally considered to be desirable for the health and stability of human social groups. It contributes to the understanding and appreciation of our past and our relationship with the natural environment. The UK is a signatory to the UNESCO *Convention Concerning the Protection of the World Cultural and Natural Heritage* (1972), the *European Cultural Convention* (1954), the *Convention on the Protection of the Architectural Heritage of Europe* (1985), the *European Convention on the Protection of the Archaeological Heritage* (1992) and the *European Landscape Convention* (2000).

2.2 The review of English national cultural heritage policies, *The Power of Place* (2000), led to the government's recommendations that public bodies take full responsibility for the cultural heritage effects of their activities (*A Force for Our Future*, EH 2002). The recommendations are endorsed by the government's cultural heritage advisors, English Heritage (who are also the HA's statutory consultees), and supported by other heritage bodies. The government's policies for sustainable development are incorporated into transport policies intended to ensure that the impact on the environment is taken into account when undertaking road transport related activities.

2.3 The Department for Transport has signed the *Protocol for the Care of the Government Historic Estate* (DCMS 2003) (see para. 1.3). The HA's CHAMPs, coupled with the HA's Environmental Information System (EnvIS), will ensure that the requirements of the *Protocol* are fulfilled.

2.4 Cultural Heritage Asset Management Plans will use the EnvIS database of cultural heritage assets (identified as "elements" in EnvIS) within and adjacent to the highway to inform the proposals for their management and enhancement.

2.5 Preparing and implementing a CHAMP is an iterative process. The data gathered through EnvIS are analysed to form the baseline information for CHAMPs. When CHAMPs are implemented, any resulting changes to the assets will be recorded in the EnvIS database, with further proposals for on-going management, if appropriate. Each CHAMP will be reviewed every 4 years (in line with DfT historic estate quadrennial reviews) to ensure that any changes in the network, management, and perceptions of value are taken into account.

2.6 The development of a Cultural Heritage Asset Management Plan involves the following stages:

- Collect heritage data supplied by EnvIS,
- Analyse the EnvIS data to identify appropriate management actions,
- Prepare CHAMP,
- Submit Plan and bid for funding
- Implement management actions, and
- Review results and update EnvIS.

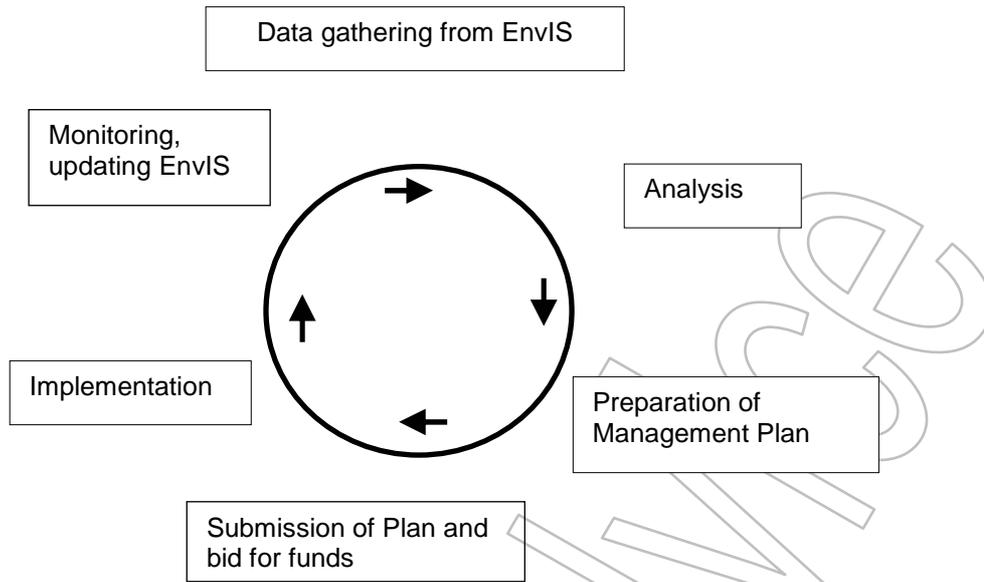


Fig. 1. The CHAMP process

3 CONTENTS OF A CHAMP

3.1 It is not intended that there should be a formulaic approach, but certain components are expected to be covered by all CHAMPs. The key contents of a CHAMP are sections describing:

- The purpose of the plan
- The objectives of management
- The asset (including its value and any relevant historical evidence)
- Its current condition
- Management issues (including the impact the asset experiences, potential impacts on it, and its vulnerability)
- The preparation of CHAMP, including work programme
- Arrangements for monitoring and review
- The procedures for updating EnvIS
- Appendices

Each of these components is discussed below in more detail.

3.2 **The purpose of the CHAMP.** A short introductory section explaining the purpose of the plan and summarising the description of the cultural heritage asset, its location, recommended actions, cross referenced to full descriptions of undertakings contained in the appendices. This section also identifies the parties to the plan – the HA's personnel and agents, the consultants and any specialists involved in its preparation, and statutory and other organisations with an interest. The date, status and author of the CHAMP should be clearly identified.

3.3 **The objectives of cultural heritage asset management.** This section sets out the broad policies for managing the HA's cultural heritage assets, related to government and other relevant organisational strategies, policies, aims and objectives. Some of these are mandatory, required by legislation or agreed commitments, while others reflect best practice and recognised advice. The Objectives set out in EnvIS for cultural heritage should be referenced.

3.4 **Description of the asset.** This section includes information on the location and extent of the cultural heritage asset, a brief description including its setting, a summary of its value and a brief history of the asset. Judgements of value should be based on the advice in *DMRB volume 11 Part 3 Section 2: Cultural Heritage*. Descriptions should be cross-referenced to the EnvIS GIS-based mapping. Any detailed reports arising from the work to prepare the CHAMP should be placed in the CHAMP appendices.

3.5 **Condition.** The EnvIS Environmental Management Information (EMI) file will include an assessment of the condition of each cultural heritage asset, expressed as Red, Amber or Green. These Red, Amber or Green condition assessments are used to establish priorities for management actions. A condition Red indicates the asset is poor condition and not meeting the objectives set out in EnvIS, and urgent corrective action is required. Amber indicates that the asset is satisfactory in terms of the EnvIS objectives but that it is not fully meeting its potential, and action is required to bring it up to the required condition. Green indicates that the asset is in good condition and no remedial work is needed.

3.6 The factors to be considered in assessing Condition are the physical state of the asset, its setting, its value as established in the Description, and its vulnerability. The assessment of an asset's physical state should take into account of:

- Completeness,
- The state of its setting,
- The survival of features of historic interest, and
- Comparison with others of its type.

An assessment of an asset's vulnerability should review the rate of change currently being experienced by the asset ---for instance, is it deteriorating rapidly or is it relatively stable? -- and the predicted changes that will be caused by, for instance, proposed changes in management regimes or by proposed road schemes. Advice on assessing setting can be found in Interim Advice Note IAN 92/07 (forthcoming *DMRB Vol 11 Part 3, Section 2: Cultural Heritage*).

3.7 Field survey is used for observing the impacts of past events and prevailing conditions, and close liaison with those responsible for maintenance and repair is essential for predicting future impacts. It is important to appreciate the potential impacts caused by changes to regulations, procedures, or standards, or even changes of service provider. Particular note should be taken of the effects on cultural heritage assets caused by historic boundary maintenance, hard estate resurfacing and repairs, structure maintenance and repairs undertaken under routine arrangements.

3.8 **Management Issues.** This section considers the main management issues that arise in relation to cultural heritage assets. These may include:

- Conflicts between roads priorities and other uses
- Conflicts between conservation and economic objectives
- Impacts arising from roads use or previous or existing management regimes
- Implications of compliance with safety legislation, regulations or highways standards,
- Options for limited resource allocations
- Impact of or maintenance regimes

3.9 All historic materials change through time, through decay, damage, disturbance, repair, erosion and so on, but avoidable damage to assets can occur through a wide range of agencies. Key sources of impact include:

- Road users (eg collision damage, vandalism etc.)
- Air pollution
- Natural agencies (eg erosion, flooding etc)
- Verge maintenance works (eg tree and scrub management, grassland management, line-of-sight vegetation clearance etc.)
- Planting and aftercare
- Maintenance of drains and boundaries
- Maintenance of structures, utilities and surfaces
- Traffic control and safety measures
- Ecological management (eg. control of rabbits)

This is a not an exhaustive list and sources of impact should be considered on a case by case basis.

3.10 As well as physical impacts on assets there may be impacts on their setting, such as the unsympathetic treatment of road side features, like kerbs or boundaries. The way the asset is being managed at the time of the survey should be established, noting the effects of any recent changes, and any relevant current and proposed arrangements for repairs, conservation etc.

3.11 The study should identify any constraints or conflicts arising from resource allocation, existing management plans, highways standards, legislation, or other sources and set out how these are to be resolved. This should take into account the value of the asset, to ensure that proposed arrangements are reasonable, cost effective and appropriate. Opportunities for future management, both short term and long term, should be discussed, with the assessment of the likely outcomes and a programme for their implementation.

3.12 Historic boundaries can include structures, such as walls and “Cornish hedges”, as well as historic hedgerows and ditches. Historic hedges are protected by statute, and although other historic boundaries are not currently protected in the same way, they are frequently important elements in historic landscapes. Maintenance operations should take into account the historic value of these features, and proceed accordingly, for instance, repairing dry stone walls using appropriate materials and construction methods. Maintenance of ditches can reveal archaeological material, and contractors may need to be made aware of potential finds, particularly near known sites.

3.13 Any information revealed by surveys carried out in connection with road schemes should be incorporated in the EnvIS database for the area and consulted in the preparation of CHAMPs.

3.14 A consideration of the Condition and the Impact will indicate of the asset's Vulnerability. This is independent of its value, which is taken into account when establishing priorities for action. Vulnerability is described as *Robust*, *Adequate* or *Fragile*. These terms are used to describe the situation of the asset, both current and predicted. Assets in condition Green, where the impact is low would be at the Robust end of the scale, and features in condition Red in a high impact situation would be at the Fragile end of the scale. The Value and Vulnerability assessments are subsequently combined to establish the Priority for management action, as set out in below.

3.15 **Management Actions.** This section of the CHAMP sets out the detailed actions required to implement the undertakings and the Plan aims. The actions should be **S**pecific, **M**easurable, **A**greed, **R**ealistic and **T**imetabled (SMART). The general options likely to be available for the different categories of asset are set out in Chapter 4, and the CHAMP should detail the application of the agreed actions, as they apply to the particular asset, together with a timetable for their implementation.

3.16 The Priority Matrix (Table 1) is used to assign a Priority rating to each cultural heritage asset, and the rating is then used to identify a timescale for action. The Value column should rank assets as Very High, High, Medium, Low or Negligible. The Vulnerability ratings of Robust, Adequate or Fragile, are derived from the assessments of Condition (Green, Amber or Red) made during the data search and field survey, combined with the level of Impact, either from current or predictable future events. Value and Vulnerability combine to indicate a Priority ranking as High, Medium, or Low, as shown by the matrix in Table 1.

Table 1. Priority Matrix

		VULNERABILITY		
		ROBUST	ADEQUATE	FRAGILE
VALUE	HIGH	Medium	High	High
	MEDIUM	Low	Medium	High
	LOW	Low	Low	Medium

PRIORITY

3.17 The timetable should be related to the priority rating. CHAMPs should recommend actions in a four year rolling programme to undertake works in accordance with the Priority rating of the asset. The timetable for actions recommended for each of the Priority ratings is as follows:

- High Priority action needed in next 12 months
- Medium Priority action needed in the next 24 months
- Low Priority review condition in 4 years.

3.18 Each CHAMP should set out the recommended actions and their time scales, and a report should be produced every four years. In this time all the recommendations in the original CHAMP should have been actioned, and a review should be undertaken, and a report prepared.

3.19 Actions should take note of legislative constraints, the results of consultation with relevant authorities, and appropriate conservation principles as regards materials and techniques. Any proposed demolition, alteration, excavation, change of use, disposal or new build that would affect the asset should be taken into account, and if proposed management arrangements involve these activities, they should be clearly identified and justified, through cross referencing to the asset's condition, value, impact and vulnerability assessments.

3.20 A work programme should identify the actions intended to be undertaken in the framework of the Priority timetable, ie 12 months, 24 months and 4 years. It should include routine maintenance as well as actions targeted at specific problems. A work programme is essential for the effective monitoring and review of the work.

3.21 **Submit CHAMP proposal and bid for funding.** The CHAMP proposal should be submitted to the relevant HA's Area Manager, together with the costings to carry out the proposed works. These costs should form part of the Managing Agent's bid for undertaking the maintenance and management of the network for which they are responsible.

3.22 **Monitoring and Review.** The CHAMP is a statement of intent, backed up by a system of monitoring and review. This section of the Plan sets out the arrangements to review the progress of the actions, access arrangements for monitoring by statutory agencies and other interested parties, and Plan reviews. Reviews of the Plan should not normally entail complete rewriting, rather they are opportunities to refocus and re-assess as new information is forthcoming during the course of works.

3.23 Update EnvIS. The EnvIS database should be updated with the results of implementing the CHAMP. The detailed procedure for undertaking this is set out in IAN 84/07.

3.24 Appendices. To keep the CHAMP itself concise, all detailed supporting information should be placed in appendices. These should include any baseline survey reports, including desk top information, photographs, condition survey reports, relevant documents such as Scheduled Monument or Listed Building descriptions, and other relevant plans, proposals and information. The appendices should be included in the GIS based EnvIS database.

4 MANAGEMENT OPTIONS BY FEATURE CLASS

General Management Issues.

4.1 An environmentally integrated approach to management should be adopted. Many historic structures, for instance, support rare flora and fauna. The management of these features may need to balance an adverse effect on ecology against the protection of cultural heritage assets or vice versa. Frequently, however, an ecologically sound approach will prove to be equally appropriate for the conservation of the cultural heritage value. Early identification of relevant environmental factors should be possible through the integration of the cultural heritage information with other environmental aspects in the EnvIS database.

4.2 An underlying principle for the management of all cultural heritage assets is to minimise the amount of disturbance to valuable assets. Any recommendations for the management of designated assets will need to comply with the regulations and standards governing them.

4.3 Work affecting Scheduled Monuments requires Scheduled Monument Clearance (SMC) from the Secretary of State for Culture, Media and Sport, advised by English Heritage. English Heritage should be consulted well in advance, as obtaining SMC can take many months, and will normally require a detailed description, explanation and justification of the works to be undertaken. Works affecting the setting of a Scheduled Monument do not need SMC, but setting is a relevant planning issue and EH should be consulted early in the process.

4.4 Listed Buildings can include structures such as bridges, milestones, tollhouses, gates, walls and many other features. Consent is required to alter or demolish listed buildings, including making changes within their curtilage. Changes that would affect their settings do not require consent, but the setting of listed buildings is a relevant planning issue, and the local planning authority or English Heritage should be consulted if the setting of a listed building is an issue. There may also be local planning policies that cover the treatment of the asset. PPG15 contains the government's guidance on the treatment of Listed Buildings.

4.5 The local planning authority controls certain works within Conservation Areas, and effects on the setting of a Conservation Area can also be a material consideration in planning issues. World Heritage Sites, Registered Historic Parks and Gardens and Registered Historic Battlefields, do not have statutory protection. Works affecting them, and their settings, however, are material considerations in planning decisions, and service providers should take this into account in drawing up CHAMPs for areas that include such sites

4.6 The character of cultural heritage assets, and their situations, vary widely, and management proposals will also vary depending upon the form, material, extent, survival and vulnerability of the asset. Cultural heritage assets are grouped below in terms of their physical characteristics, rather than statutory or other categories, in order to describe the appropriate responses to highways works that may impact on them and indicate the range of external specialists whose input may be required. The effects of the same highways works on different classes of feature are likely to be different and require different specialist assessment and management actions. All relevant classes should be noted even if they relate to the same feature, so that the appropriate range of responses can be considered.

4.7 Six broad cultural heritage classes of feature are suggested:

- Standing structures,
- Earthworks,
- Buried material,
- Historic landscape,
- Industrial remains, and
- Underwater archaeology.

The following suggestions for management procedures are for guidance and are not exhaustive; the range of management options available for each asset should be considered on its merits.

Standing Structures.

4.8 Standing remains are usually visible and so should not usually be overlooked in surveys, although overgrown vegetation may obscure more subtle items. Despite their visibility, their historic significance may not always be appreciated. This may be the case particularly with modern remains. Many highways structures, such as bridges, tollhouses, and mileposts, are themselves of historic value, and maintenance and repairs to them should take this into account. The conservation of bridges, including historic examples, is dealt with in a manual prepared for the Highways Agency (Giffords, HA 2000).

4.9 If changes to the highway affect valuable historic buildings or their settings, then they may be at risk. Upstanding monuments, ruins and derelict structures are vulnerable to lack of maintenance and neglect, vandalism, vegetation, water damage, inappropriate use and the removal of the building materials for salvage. The risks posed by these processes should be assessed.

4.10 Standing buildings capable of economic use are usually best kept in occupation to safeguard their future. Although occupied buildings are unlikely to be encountered within the roads network, roads may affect historic buildings outside but close to the road boundary. Management options may need to consider measures to mitigate the effects of changes related to the highway that would affect the viability of these buildings, for instance, through the creation of bunding, false cuttings, screening, double glazing, planting or quiet running surfaces. These would normally be considered in relation to new road construction, but the setting of historic structures can be affected by more subtle changes to highways, such as lighting or signage.

4.11 The value of any ecology dependent on the structure, such as lichens, invertebrates and specialised flora, should be considered when addressing management procedures. Protected species, such as bats or badgers, may be present and if so all legislative and regulatory requirements must be observed. Scrub, ivy, tree roots and bracken can be damaging and it may be appropriate to remove them, after taking specialist advice. Ruins may need to be consolidated to make them safe and to prevent further rapid decay, using conservation grade materials and techniques as advised by specialists.

Summary.

STANDING STRUCTURES	
Impacts	Possible Management Actions
Neglect	Bunding, screening, planting, low noise road surfaces.
Inappropriate alterations	Conservation and consolidation of structure.
Damage or demolition	Use of appropriate conservation grade materials and techniques.
Vandalism	Assessment and monitoring by specialist.
Vegetation	Consideration of statutorily protected flora and fauna.
Water damage or air pollution	Enhance access or presentation.
Setting	

Earthworks

4.12 Historic earthworks may be present in the roadside verge, or in adjacent fields or woods. They may be prominent and easily seen or they can be very subtle, requiring a trained eye to identify them. Some earthworks may be part of extensive complexes, continuing outside the highway boundary. Rapid survey work may need to assess the significance of any portions that lie within the highway boundary.

4.13 The risks should be assessed and damaging processes controlled or prevented if possible. Earthworks can be vulnerable to road re-alignment, to vehicular damage, services, scrub invasion, burrowing animals and tree planting.

4.14 Where operations are being carried out that could affect earthworks, markers should be used to define their extent, and working methods agreed for their protection. Where this is not possible then recording prior to any physical damage, including excavation, may be appropriate. Scheduled Monument Clearance is required for works that affect Scheduled Monuments. For many earthworks the best long-term management regime may be appropriately managed grassland.

Summary

EARTHWORKS	
Impacts	Management Actions
Vehicular damage	Define extent with ground markers during works.
Utilities and drainage works	Recording
Scrub invasion	Excavation.
Agricultural use	Manage grazing.
Faunal burrows (rabbits, badgers)	Swathe management/mowing.
Planting	Protective fencing.
	Enhance access or presentation.

Buried material

4.15 A wide range of historic material can survive below ground, and in some conditions this survival can be very good, for instance waterlogged deposits may contain preserved organic remains such as wood, leather, seeds, pollen, human and animal tissues and so on. For some periods buried material is the only evidence we have of the past. Buried material can be filled-in ditches, pits, gullies and other cut features, together with the remains of collapsed structures, such as walls, hearths, and layers of man-made material.

4.16 Buried remains are not usually visible on the surface unless crop or soil marks betray their presence. This makes them particularly vulnerable if they have not been adequately identified and marked on the ground. Some buried features may be identified from the study of aerial photographs (APs). Some Sites and Monuments Records/Historic Environment Records (SMR/HERs) have plotted APs onto maps and English Heritage is undertaking a National Mapping Programme of APs for the whole country. Aerial photograph plotting may still need to be carried out by the service provider's archaeologists in parts of the country where up-to-date AP plots are not available.

4.17 Geophysical survey may also reveal buried features, but this is not usually undertaken as a matter of routine, and the compiler of the Plan will normally only have available the results of previous studies of limited areas.

4.18 Another source of information regarding buried archaeology is geotechnical survey work, when boreholes and test pits may reveal archaeological areas of potential. The study of geotechnical logs can sometimes alert archaeologists to the potential of an area, for instance the presence of peat or colluvial deposits of archaeological interest. The standard geotechnical log, however, does not usually distinguish archaeological deposits beyond the

identification of "made ground" or "fill" with sometimes a note of inclusions of brick or other anthropogenic material. If an area is particularly sensitive then an archaeological presence on site may be useful during the excavation of test pits.

4.19 The results of searches in these records should be included in the EnvIS database.

4.20 Waterlogged features constitute a special set of buried remains, both because they can be an archaeological research priority and also because they are particularly vulnerable to some of the effects of road construction. If the hydrological status of the deposits is changed then the condition of archaeological materials can deteriorate, even if there is no other disturbance of the deposit. Palaeoenvironmental deposits may be localised or very extensive, and road activities may affect only a small proportion of a wide-ranging layer or threaten the loss of an entire deposit. Management procedures may differ in each case

4.21 The threat to buried remains is their physical destruction through earthmoving activities, compaction by machinery or overburden, or the effects of changes to the hydrology through drainage, de-watering, impeded drainage, or even piling through impervious layers. Vehicular rutting, topsoil stripping, drainage ditches, fencing, piling, the construction of haul roads and compounds and laying services can all impact on buried remains, and a key to management is informing those responsible for designing and executing such activities about the unseen potential of their site.

4.22 Preservation in situ is the preferred option if possible, but sampling extensive deposits where only a small proportion is under threat may be acceptable mitigation. A thorough research justification should always be applied where destructive procedures are proposed.

4.23 Careful design may offer ways of protecting buried material, for instance, an embankment constructed without stripping the topsoil, and using a geotextile, may avoid damage to below-ground features, although the effects of compression should be calculated and taken into account. DMRB Vol, 10 and 11 set out procedures for evaluating, avoiding and mitigating the effects of highways activities on archaeological remains.

Summary

BURIED MATERIALS	
Impacts	Management Actions
Earthworks	Follow DMRB vol 10 advice.
Fencing	Protective fencing .
Haul routes/off site activities	Assess impact depths.
Utilities and drainage works	Define extent with ground markers during works.
Structures and piling	Maintain hydrological regime.
Dewatering	Sampling programme.
Faunal burrows	Assess impact depth.
Planting	Excavation and recording

Historic landscapes.

4.24 Components of extensive historic landscapes (field systems, parks, relict landscapes, battlefields etc) are frequently affected by road schemes, and the road is itself a component in the historic scene. The very extensiveness of historic landscapes can make them hard to appreciate unless they are formalised in some way, like a park, or contain specialised features, such as might be found in a relict mining area. The character of the historic landscape imparted by these components can be affected by changes to the highway and its maintenance.

4.25 There are several specialised types of historic landscapes that have been separated out for particular attention in government policies. Important Historic Parks and Gardens, and Historic Battlefields are the subject of non-statutory designation by English Heritage,

and Conservation Areas have statutory protection. PPG15: Planning and the Built Environment sets out the government's planning policies related to them. Other historic landscapes are not designated in England. It is expected, however, that the country will eventually be wholly covered by Historic Landscape Character descriptions, and many counties have produced Historic Landscape Character maps. Guidelines for the characterisation of historic landscapes have been published by English Heritage (Fairclough 2000). DMRB volume 11 also sets out methods for assessing historic landscapes in environmental assessments. The EnvIS database should note any Historic Landscape Character descriptions available for the areas through which the trunk road network passes.

4.26 Valuable historic landscapes, other than Parks and Gardens and Battlefields, may not be covered in SMRs or other cultural heritage databases, so identifying them can be a challenge. Conservation Areas often contain a historic landscape justification, within the built environment, and National Parks and Areas of Outstanding Natural Beauty may also include historic features described in their designations that contribute to their status.

4.27 Archaeological databases may list some of the elements that combine to create an important historic landscape but these may not be integrated to form defined historic landscape character areas. The National Trust database, currently under construction (2007), identifies its historic estates, and any road scheme passing through or adjacent to National Trust land will eventually have a detailed historic landscape description that should be consulted. Some important features of the landscape, such as historic hedgerows, although protected by statute, may not be identified until a threat to them has materialised, although some planning authorities are preparing maps of important hedgerows in their jurisdictions. Other historic boundary features, such as dry stone walls or field banks, currently do not benefit from the Hedgerow Regulations' protection, so these may not appear on local cultural heritage databases, and may need to be surveyed and assessed for the EnvIS database to inform CHAMPs .

4.28 The management of the road in relation to historic landscape depends upon the elements - earthwork, structure, etc. - and their contribution to the historic character of the landscape. Preservation is the preferred option but there may also be scope for enhancement in that the impact of roads may be mitigated to the benefit of the historic landscape character. It may be possible, for instance, to reconstruct or repair features previously lost or damaged, such as drystone walls.

4.28 A road is likely to affect directly only a small proportion of a valuable historic landscape character unit but it may have a disproportionate effect. Often management is not only a matter of protecting the limited number of individual features that may be directly affected, such as boundaries, tracks, plantings etc, but also of considering the overall impact on views, severance, setting and scale of the resource.

Summary

HISTORIC LANDSCAPES	
Impacts	Management Actions
Inappropriate planting, boundaries, earthworks, materials and structures design/alterations	Maintain accurate HLC mapping and description. Follow DMRB Vol 10 advice Sympathetic design
Loss of key elements of historic pattern	Use of appropriate materials and techniques Recreate lost elements
Visual severance	Enhance visual effects

Industrial Remains

4.29 For the purposes of CHAMPs the term "industrial" is taken to mean roughly from the period of the English industrial revolution of the late 17th and early 18th centuries up to the most recent past. Industrial remains are separated out from the other cultural heritage categories only because they usually require specialist interpretation and identification. Industrial remains are immensely varied in type, size, and character. They may be buried deposits, standing structures, earthworks, landscapes or portable objects. For the purposes of CHAMPs relict military features are categorised as industrial. The national Industrial Archaeology Database and the Defence of Britain database should be consulted in addition to the SMR sources.

4.30 The physical risks to industrial relics are similar to those set out above for the various categories of material remains. Economic re-use of redundant industrial buildings is often not a realistic option. Other risks peculiar to industrial sites can arise from adverse associations, political attitudes or concerns about contaminated land. Relict industrial sites, for instance, may not conform to expectations of "attractive" historic landscapes or structures, and the destruction of historic industrial sites has frequently been carried out for the express purpose of "cleaning up" areas and rehabilitating communities blighted by changes in economic status. The pressure for the remediation and re-use of brownfield sites for redevelopment can affect important relict industrial areas.

4.31 A difficulty in managing historic industrial sites can be their sheer size, for instance, many metres thickness of spoil or slag covering hectares of ground. Alternatively, small historic industrial artefacts can easily be overlooked or disposed of without thought because of their familiarity or portability. Management will consist of variations of the procedures described above for the other categories.

Summary

INDUSTRIAL REMAINS	
Impacts	Management Actions
Specialist area of feature classes: standing remains, earthworks, buried material, and historic landscapes.	As per feature classes. Includes military material. Consult relevant databases. Contact specialist to advise on significance and mitigation.

Underwater Archaeology

4.32 Underwater archaeology relates to remains that are permanently or frequently underwater, including those in the tidal zones of beaches and estuaries. The range of underwater historic features includes not only remains such as boats, wharfs, fishing structures and so on, but also terrestrial artefacts lost or deposited in the water, and even drowned settlements. Underwater situations can also contain valuable palaeo-environmental resources, ranging from well-preserved objects to drowned forests, peat and alluvium. This is considered as a separate category here because the techniques needed to locate, map, assess and manage historic underwater material require specialist experience and skills.

4.33 Situations where roads may affect underwater archaeology are at bridges, causeways, and routes adjacent to the coast or on riverbanks. The construction, repair or modification of bridges may affect the waterside or bed of the watercourse being bridged. The caissons and piers of bridges and viaducts may damage river bottom deposits, and if the bridge is an ancient route there may be traces of earlier crossings and lost or deposited objects on the bed. Works at the bridgefoot can reveal earlier phases of riverbank development or previous bridges or fords. In urban and dockside situations wharfs have often encroached on the river itself, leaving earlier revetments, beach deposits and possibly wrecks buried behind new embankments, which may themselves be constructed out of re-used boat timbers.

4.34 The location and mapping of underwater archaeology can be a challenge. The local authority SMR may record a pattern of finds from a riverbed, or early maps may indicate the location of previous river crossings, and so provide clues as to the potential of sites. Specialist marine charts and wreck databases may be relevant. It is probably sensible to assume that all river crossings hold some potential for underwater discoveries unless there are good reasons to believe the contrary.

4.35 The best management of the resource is to try to avoid disturbing it if possible, through the design of roads where they cross or encroach on water bodies. Maintenance of structures in these situations should be planned with the potential for underwater archaeology in mind, and disturbance avoided where possible. If disturbance is unavoidable then targeted surveys by specialists may be necessary, followed by appropriate mitigation.

Summary.

UNDERWATER REMAINS	
Impacts	Management Actions
Earthworks	Assess depth of impact
Utilities and drainage	Consult specialist survey databases
Structures/piling	Contact specialists to advice on significance and mitigation
Dewatering	

5. SOURCES OF FURTHER INFORMATION AND ADVICE

Advice and information on the cultural heritage resource and its significance, recording and management can be sought from the following agencies and groups:

English Heritage Regional Offices

North East Region

English Heritage
Bessie Surtees House
Sandhill
Newcastle upon Tyne
NE1 3JF
0191 261 1585

Yorkshire and Humber Region

English Heritage
37 Tanner Row
York
YO1 6WP
01904 601901

North West and Merseyside

English Heritage
Suites 3.3 and 3.4 Canada House
2. Chepstow Street
Manchester
M1 5FW
0161 242 1400

East Midlands Region

English Heritage
Hazelrigg House
33 Marefair
Northampton
NN1 1SR
01604 730320

West Midlands Region

English Heritage
112 Colmore Row
Birmingham
B3 3AG
0121 625 6820

South West Region

English Heritage
29/30 Queen Square
Bristol
BS1 4ND
0117 975 0700

South East Region

English Heritage
4th Floor Berkley House
London Square
Cross Lanes
Guildford
GU1 1YA
01483 304869

East of England Region

English Heritage
62-74 Burleigh Street
Cambridge
CB1 1DJ
01223 582700

London Region

English Heritage
23 Savile Row
London
W1X 1AB
020 7973 3000

Specialist Societies and Groups

Ancient Monuments Society
St Anne's Vestry Hall
1 Church Entry
London
EC4V 5HB
0120 7236 3934

Georgian Group
6 Fitzroy Square
London
W1P 6DX
01207 387 1720

Association for Industrial Archaeology
AIA Office School of Archaeological Studies
University of Leicester
Leicester
LE1 7RH
0116 252 5337

Society for the Protection of Ancient Buildings
37 Spital Square
London
E1 6DY
01207 377 3857

Association for Studies in the Conservation
of
Historic Buildings
C/O Institute of Archaeology
31-34 Gordon Square
London
WC1H 0PY

Twentieth Century Society
70 Cowcross Street
London
EC1M 6EJ
01207 250 1644

Garden History Society
Station House
Church Lane
Wickwar
Wootton under Edge
Gloucestershire
GL12 8LE
01454294888

Victorian Society
1 Priory Gardens
Bedford Park
London
W4 1TT
01208 994 101

GLOSSARY

Actions. The steps needed to achieve the aims of the CHAMP, including works, a timetable monitoring and review.

Aims - Intentions underlying the management of assets and the balance to be struck between its use and other interests

Baseline record – a record of the location, extent, condition and existing management arrangements at the start of the preparation of a CHAMP

Conservation — the process of managing change to sustain the significance of inherited historic assets, for current and future use and enjoyment

Conservation Area – Statutorily protected area defined by Local Authorities to denote areas which are significant because of their particular character, generally arising from built heritage. This character may arise from the historic layout of roads, characteristic building materials or styles, or a particular mix of uses or space. It gives broader protection than listing individual buildings.

Desk-based survey - A data collection exercise utilising existing sources of cultural heritage data (such as Sites & Monuments records, Listed Building data, historic maps etc). The purpose is to identify any known cultural heritage resources.

English Heritage - The working name for the Historic Buildings and Monuments Commission.

Enhancement – works beyond that required for maintenance, conservation or repair, in order to improve the condition, completeness or legibility of assets. Most clearly an option where authenticity is not an issue, for instance where the reconstruction of collapsed dry stone walls would appropriately enhance an historic landscape character area.

EnvIS – The Highways Agency's Environmental Information System, a GIS based database and management tool (see IAN 84/07) that forms the basis of the Baseline Record. It is the source for initial cultural heritage information and is updated by surveys and actions undertaken in connection with a CHAMP.

Field Survey – Site visit to confirm the desk-based information, locate new assets and record their condition etc.

Geophysical Survey – A non-intrusive archaeological prospecting technique, used to identify sub-surface features.

Listed Building - A statutory designation assigned to a built structure (not limited to buildings) of special architectural or historic interest. English Heritage holds the national archive of Listed Buildings in England and is responsible for designation. Local authorities hold the lists for their areas.

Maintenance – Routine work necessary to keep the fabric of historic assets in their existing condition, preventing or inhibiting the development of decay, but not involving repair.

Objectives – overarching policies and intentions to which Aims contribute

Reconstruction – goes beyond repair or restoration in re-creating what no longer exists. It is speculative to the extent that physical and documentary evidence has to be supplemented with logical deduction or intelligent guesswork, often based on known parallels.

Register of Historic Battlefields - A non-statutory designation used by English Heritage to identify historically important battlefields.

Register of Parks and Gardens of Special Historic Interest in England- A non-statutory designation used by English Heritage to identify parks or gardens of particular historical value.

Repair – reversing changes caused by decay, damage or use, taking an asset back to a readily known condition before the defect occurred but not involving restoration.

Restoration – makes an historic asset conform to its known design or appearance at an earlier time. It is achieved by altering or replacing what has decayed, lost, damaged or inappropriately repaired or added.

Scheduled Monument - the designation by the Department of Culture, Media and Sport in England, Cadw in Wales, Historic Scotland and the Environment and Heritage Service for Northern Ireland, of a site or area as worthy of protection under the terms of the Ancient Monuments and Archaeological Areas Act 1979. Scheduled Monuments are nationally important, but not all nationally important sites are scheduled.

Sites and Monuments Record/Historic Environment Record (SMR/HER) - Database of cultural heritage resources. In England, each County/Unitary Authority maintains its own SMR. Some details from some individual SMR/HERs are fed into the National Monuments Record (NMR), held by English Heritage.

World Heritage Site – The designation by UNESCO of an area or site considered to be of outstanding universal value.

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- Fairclough G. 1999 *Yesterday's World, Tomorrow's Landscape* EH
- Gifford, J Walsgrove 2000 *Conservation of Bridges* Highways Agency, Gifford, Donald Insall
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- Rippon S, 2004 *Historic Landscape Analysis*, CBA
- Walsgrove J, Gifford 2001 *Conservation of Bridges*

Legislation

- Ancient Monuments and Archaeological Areas Act (1979)
- National Heritage Act (1983, amended 2003)
- Burial Act (1857)
- Planning (Listed Buildings and Conservation Areas) Act 1990
- Hedgerow Regulations (1997) Protection of Military Remains Act (1986) Protection of Wrecks Act (1973)
- The Treasure Act (1996)
- Highways Act (1980)

Official Policy and Guidance Documents

DCMS *Protocol for the Care of the Government Historic Estate* (DCMS 2003)
<http://www.culture.gov.uk/NR/rdonlyres/E0665AB1-B348-4FBB-9955-07954F3D7386/0/BCRprotocol.pdf>

DETR *New Approach to Appraisal* (NATA) 1998

DETR *Guidance on the Methodology for Multi Modal Studies* (GOMMMS) 2000
(superseded by WebTAG)

DoE *Crown land and crown development*. Circular 18/84

DoE PPG15 *Planning and the Historic Environment* 1994

DoE PPG16 *Planning and Archaeology* 1990

EH *Power of Place* (2001)

EH *A Force for Our Future* (2002)

UNESCO *Convention Concerning the Protection of the World Cultural and Natural Heritage* (1972)
<http://whc.unesco.org/archive/convention-en.pdf>

European Cultural Convention (1954)
<http://conventions.coe.int/Treaty/Commun/QueVoulezVous.asp?NT=176&CM=8&DF=7/6/2006&CL=ENG>

Convention on the Protection of the Architectural Heritage of Europe (1985)

European Convention on the Protection of the Archaeological Heritage (1992)

Highways Agency Documents

Design Manual for Roads and Bridges, vols 10 and 11

Commentaries/General

EH 2000: *A review of the Monuments protection Programme, 1986 - 2000*

EH 1995 *Easy Access to Historic Properties*