Minerals Core Strategy

Technical Paper MCS-F

After Minerals - Restoration, aftercare and afteruse in Gloucestershire
Contact Details for Gloucestershire County Council

Minerals & Waste Planning Policy:
Tel: 01452 425704
m-wplans@gloucestershire.gov.uk
www.gloucestershire.gov.uk/mineralsandwaste

Council Direct:
Tel: 01452 505345
Section 1
Introduction

1. It is vitally important that the plans and proposals set out in the Minerals Core Strategy are founded on a robust and credible evidence base. Demonstrating how the evidence for the MCS was carefully considered and acted upon will be a key ‘test of soundness’ at the independent examination into the Core Strategy1.

2. This paper acts as part of the evidence base for the MCS and is concerned with mineral reclamation – which includes restoration and the after-care of mineral sites 2, and potential after-use opportunities in Gloucestershire.

3. The first part of the paper sets out the national, regional and local policies covering mineral reclamation. In particular it makes reference to the final, published version of Minerals Policy Statement 1 (MPS1) and Mineral Planning Guidance 7 (MPG7) – for the reclamation of mineral workings. It also refers to the submission draft of the South West RSS and identifies a series of other important spatial considerations such as the Regional Nature Map, Local Biodiversity Action Plans (BAPs), and Aerodrome Safeguarding.

4. The second part of the paper discusses the key spatial challenges facing the reclamation of worked-out mineral sites in Gloucestershire. These will need to be carefully considered with the preparation of the MCS.

5. The third and final part of the paper introduces the concept of holistic planning for mineral reclamation. It looks to develop clear links between the successful delivery of reclamation and after-use proposals and the wider aspirations and priorities for the future use of land in different parts of the county.

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1 Test vii of the ‘Test of Soundness’ set out in PPS12, states that strategies, policies and allocations must represent the most appropriate in all circumstances, having regard to the relevant alternatives and they are founded on a robust and credible evidence base.

2 As defined in the Town & Country Planning Act (1990) mineral reclamation is taken to mean – operations designed to return an area to an acceptable environmental condition and operations after extraction such as filling and contouring.
Section 2
Policy Context

6. Although mineral working is considered a temporary use of land, it can, in practice, extend over many years and without proper management can irreversibly damage the environment.

7. Therefore, it is imperative that land worked for minerals should not become derelict and out of use for any longer than is absolutely necessary. Furthermore, worked out sites can act as a vehicle for positive change with real opportunities for social, economic and environmental improvement and enhancement.

8. However, a balance still needs to be struck between ensuring appropriate extraction takes place and that the best possible reclamation outcome is achieved at each site. Careful consideration must be given to the matters of – maximising the extraction of available minerals, protecting amenity both during and following extraction, and securing the most appropriate and deliverable restoration scheme.

Nevertheless, seeking to combine these matters can also result in conflict between the length of working, the timeframe for restoring a site, and opportunities for delivering beneficial after-uses.

9. As a consequence, a sound policy framework is needed to ensure that the issues of mineral restoration and securing after-uses are appropriately integrated into the spatial strategy for minerals. This is addressed through national policies, translated through Regional Spatial Strategies (RSSs) and Local Development Frameworks (LDFs).

National Policy

Minerals Policy Statement (MPS) 1: Planning and Minerals

10. National policy for minerals is set out in Minerals Policy Statement 1 (MPS1). It provides a national objective for the reclamation of worked out mineral sites;

- To protect and seek to enhance the overall quality of the environment once extraction has ceased, through high standards of restoration, and to safeguard the long-term potential of land for a wide range of after-uses;

11. MPS1 advises that opportunities should be taken to enhance the overall quality of the environment and ensure wider benefits such as nature and geological conservation and public access through sensitive design and timely site restoration. It also states that reclamation at the earliest possible opportunity and to a high standard should be pursued to avoid the possibilities of site dereliction. MPAs are advised to offer
guidance on standards of reclamation, suitable preferred after-uses and a strategy for inactive sites that contain planning permissions but no clear proposals for working in the future.

12. In terms of specific restoration issues, MPS1 states that, where the public right of way network is affected by mineral working, it should be maintained or improved. It also requires restoration involving landfilling or the creation of wetland habitats to undergo consultation with civil and/or military aerodrome operators within a 13km radius, in order to assess the potential bird strike hazard.

13. MPS1 further confirms that the use of mineral waste in site restoration should be explored in order to minimise the potential impact on the landscape.

14. The Practice Guide to MPS1 offers more detail advice on the national policy for restoring mineral sites. It states that wherever possible, contributions should be made towards achieving biodiversity and geodiversity targets. Specific reference is also given to: - the restoration of land back to agriculture and the need to consider its potential quality alongside other sustainability considerations; and forestry and woodland opportunities based on regional forestry frameworks.

Minerals Planning Guidance Note (MPG) 7: The Reclamation of Minerals Workings

15. MPG 7 deals with policies, consultations and conditions relevant to the reclamation of mineral workings.

16. It advises that plans prepared by MPAs should offer guidance on appropriate uses of land in terms of reclamation within their area. However, this must take into account the characteristics of proposed and current working and other policy commitments of the authority.

17. In addition, due regard should be given to the opportunity to return land to its original use, alternative uses, or a combination of the two, where there are benefits to the local and, or wider community.

18. National policy on returning worked out mineral sites back to agricultural use is specifically referenced in MPG7. It states that where minerals underlie the best and most versatile agricultural land (BMVAL), the long-term potential of the land as a national, high quality, agricultural resource should be preserved. Updated national policy on land designated as BMVAL is now contained within PPS7.

19. MPG7 also provides detailed advice on mineral reclamation, forestry, amenity and nature conservation. For areas of community forest, national forests and mineral areas identified within forestry strategies, careful consideration should be given to woodland after-uses. In terms of amenity and nature conservation, local authorities are encouraged to develop their own strategic 'spatial' framework to deal with any reclamation related matters. However, this must take into account other national guidance on the countryside & rural areas (now contained within PPS7), nature conservation (now contained within PPS9), sports and leisure (PPG17), and green belts (PPG2).
20. Opportunities for infilling of surface mineral workings is also referred to in MPG7. It recognises the potential contribution of infilling to create acceptable levels and new landscapes. However, care must be taken to ensure that extraction followed by infilling is carefully planned with consideration given to the overall impact of extraction and restoration. There should be no automatic preference to reinstate former contours and ground levels through material importation. Particular attention should also be paid to the protection of ground water and, or surface water, with advice from the Environment Agency in terms of waste licensing.

21. The draft RSS recognises the opportunities, through mineral restoration and aftercare, for significant biodiversity, geodiversity and amenity gains. It advises MPAs to promote environmentally beneficial reclamation and aftercare of mineral workings through Biodiversity Action Plans and Geodiversity Action Plans, where they are produced.

22. The draft RSS also provides development policies covering agricultural land, woodlands and forestry, which also incorporate minerals development. It advises that due consideration should be given to the protection of agricultural soils of BMVAL quality alongside other sustainability considerations. For woodlands and forestry it is committed to their expansion, where appropriate and recommended by the SW Regional Woodland and Forestry Framework (RWFF).

23. Nature conservation is also another important issue covered in the submission draft RSS. It is specifically recognised in terms of its potential gains from land restoration. Local authorities are advised to use the South West Nature Map (which is discussed in more detail later in this section) to help map out local opportunities for biodiversity enhancement in LDD’s. Policy priority should also be given to meeting habitat and species targets set out for the South West, through the regional expression of the UK Biodiversity Action Plan.

Local Policy

24. The MCS provides an opportunity to develop a clear and consistent approach to mineral site restoration and appropriate after-uses for Gloucestershire.


26. Policy M.4 of the Structure Plan states that where there is a need to make provision for minerals, among other considerations, reclamation to a state suitable for beneficial after-uses must be assured. The MLP policies are focused on the mechanics of mineral reclamation and set out criteria and conditions to help in its delivery. The full policy text for mineral reclamation in Gloucestershire can be found within Appendix A.
27. Under transitional arrangements, all local reclamation policies remain part of the County’s development plan. This means they are ‘saved’ policies and will remain in force for determining planning proposals, until they are formally replaced by the South West Regional Spatial Strategy (RSS) in the case of the Structure Plan policy, and the emerging Minerals and Waste Development Framework (MWDF) for the MLP policies.

Other Spatial Considerations

Planning Policy Statement (PPS) 7: Sustainable Development in Rural Areas

28. PPS7 provides the national policy for planning in rural areas. In relation to mineral restoration, it sets out specific advice on development upon Best and Most Versatile Agricultural Land (BMVAL) and Forestry.

29. In terms of BMVAL it states that development proposals on these designations, should be considered alongside other sustainability considerations such as – biodiversity; quality and character of the landscape; amenity value or heritage interest; accessibility to infrastructure; workforce and markets; maintaining viable communities; and the protection of natural resources. It also advises that, where possible, poorer quality land should be used in preference to higher quality land.

30. For forestry operations, PPS7 states that regard will need to be given to Regional Forestry Frameworks and forest areas of regional and sub-regional significance.

Planning Policy Statement (PPS) 9: Biodiversity and Geological Conservation

31. PPS9 sets out planning policies on the protection of biodiversity and geological conservation. It advises that regional and local policies should aim to maintain, enhance, restore or add to beneficial biodiversity and geological conservation interests. It also promotes the incorporation of biodiversity and geological features within new development proposals.

32. In relation to site restoration, PPS9 provides specific advice on the need to identify within LDFs any areas or sites for restoration or the creation of new priority habitats which contribute to regional biodiversity targets.

33. Consequently, the MCS will need to take into account beneficial biodiversity and geological conservation, particularly where there are clear opportunities through restoration to support the local expression of regional and national biodiversity targets.

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3 Transition arrangements are in place to help manage the change to the planning system. They involve the approval from the Secretary of State (SoS) to retain or ‘save’ existing adopted local planning policies until they are formally replaced by new style development plan documents. No local policies can be saved without SoS approval after Sept 2007 (three years from the new planning act) or after three years from the date of their original adoption within a particular local plan.
South West Regional Biodiversity Action Plan

34. The South West BAP sets out targets to conserve, restore, and create new wildlife habitats and re-establish species populations in the region.

35. Mineral restoration can provide opportunities to create or re-establish wildlife habitats and species populations. It is therefore important that the MCS takes account of BAP targets relevant to current and, or potential areas of mineral extraction across the county.

36. Detailed information on local biodiversity targets specific to Gloucestershire are found within two Local Biodiversity Action Plans. The first covers the entire county, while the second is a focused plan for the Cotswold Water Park area of Gloucestershire and Wiltshire.

Local Biodiversity Action Plans for Gloucestershire

The Biodiversity Action Plan for Gloucestershire

37. The Biodiversity Action Plan for Gloucestershire was launched in April 2000 and is supported by a range of local stakeholders including the County Council as a key partner. It is divided into a series of Habitat and Species Action Plans, which include objectives and targets to conserve and enhance biodiversity across the county.

38. The BAP covers four key Natural Areas (NAs) – Dean Plateau & Wye Valley; Severn and Avon Vales; Cotswolds; and Thames and Avon Vales.

39. Natural Areas were first introduced by English Nature (Now part of Natural England) in 1995 as a means of defining areas across the county based on – geological foundation; characteristic landscapes; flora and fauna; and the interaction with land use and human impact. NAs were designed so as to clearly define areas with a ‘sense of place’ by taking account of wildlife and natural features of landscape, alongside the views of the people who live and work within them.

40. The aspiration of NAs is to provide a consistent, ecologically coherent framework to focus national targets to a level that can be used locally.

41. Appendix C sets out the spatial configuration of the four Natural Areas designated within Gloucestershire.

Cotswold Water Park Biodiversity Action Plan

42. The Cotswold Water Park Biodiversity Action Plan (1996-2007) seeks to focus resources on the conservation and enhancement of biodiversity over the Water Park area. It is a cross-border BAP, which covers the Gloucestershire and Wiltshire administrative areas of the Water Park. The CWP-BAP is divided into eight Habitat Action Plans and nine Species Action Plans. Similar to the countywide BAP, each Action Plan sets out a number of objectives and targets for managing local biodiversity over the plan period.
43. A review of the CWP-BAP is now underway. It is timetabled for completion during 2008 and is proposed to be in place until 2017.

44. The County Council is a key partner in both local BAPs for Gloucestershire. As a result the MCS has a responsibility to consider future biodiversity opportunities borne out of mineral site restoration. This will be of particular relevance for the county’s key mineral resource areas, where the size, scale and intensity of mineral working in the future represents a significant potential for meeting biodiversity targets.

45. The habitats and species identified within the two local biodiversity action plans for Gloucestershire are set out in Appendix B. Detailed background information on biodiversity has also been produced to support the preparation of the MCS, within Technical Evidence Paper WCS-MCS 5 ‘Biodiversity’.

Gloucestershire Local Geodiversity Action Plan (LGAP) – The Cotswold Hills

46. Local Geodiversity Action Plans (LGAPs) are designed to raise the awareness of geological resources at the local level. This should help to support future conservation and enhancement of local features; provide guidance on preparing sustainable spatial policies in a geological context; and increase the appreciation and understanding of local geological heritage.

47. The local Geological Trust published the county’s first Geodiversity Plan in 2005. The LGAP covers the Gloucestershire section of the Cotswolds Hills and provides a substantial geological audit of the area. It also as includes a 10-year action & implementation plan.

48. As with the local biodiversity action plans, the MCS has a responsibility to take into account opportunities for conserving and enhancing geological resources. However, this must be achieved in the context of wider sustainability issues, and where it is deliverable and practicable to do so.

South West Nature Map

49. The South West Nature Map was published in 2006 and was prepared to support the emerging RSS environmental policies. Its key purpose is to help identify key opportunities for meeting regional BAP targets. The map works by headlining a number of Strategic Nature Areas (SNAs) across the South West. These areas are considered to be priorities for maintaining and, or expanding (through restoration and, or re-creation) wildlife habitats at a landscape scale.

50. Appendix B sets out the Gloucestershire section of the South West Nature Map. It includes the delineation of SNAs for the county.

51. Since 2006 the South West Nature Map has been subject to a local review, which has included a careful assessment of each SNA in Gloucestershire. Between March and August 2007 a suite of revised SNAs were published for consultation with key stakeholders. It is anticipated that the final Nature Map for Gloucestershire, including SNAs will be published in early 2008.
Strategic Review & Implementation Plan for the Cotswold Water Park

52. The Strategic Review & Implementation Plan for the Cotswold Water Park commenced in 2006. Its purpose is to provide an overarching masterplan for the whole of the Cotswold Water Park area and guide future development and regeneration opportunities over the coming years. The plan is supported by the Cotswold Water Park Joint Advisory Committee (CWP-JAC) in conjunction with the South West Regional Development Agency (SWRDA).

53. Mineral working and its subsequent restoration is a key driver for change within the Water Park area. Consequently, the outcomes and recommendations of the masterplan will be of significance when delivering the spatial strategy of the MCS and, in particular, for considering mineral reclamation and after-use opportunities. A draft version of the masterplan is due to be published in early 2008 following a technical scoping exercise which was undertaken during Spring / Summer 2007.

AONB Management Plans

54. Management plans must be prepared for designated Areas of Outstanding Natural Beauty (AONBs). The purpose of these plans is to highlight the special qualities of each designation and present an integrated vision for their future. The plans must also set out specific objectives and policies to help secure the vision and identify their delivery mechanism.

55. AONB Management Plans are likely to play a significant role in the future spatial planning of the county as just over 50% of Gloucestershire is designated as an AONB. There are three designations in the county: Cotswolds; Wye Valley and Malverns Hills. All of these AONBs have adopted Management Plans.

56. In terms of mineral working and restoration, the AONB Management plans recognise the potential opportunity of this activity for enhancement. Through various strategies and plan policies, each management plan supports the restoration of sites, which demonstrate high-quality practice and takes into account – landscape character; biodiversity; nature conservation and sustainable tourism. Particular attention is also paid to specific BAP targets identified within each AONB area.

57. Detailed information to support the MCS has also been produced on county’s wider landscape character and AONB designations. It is included within Technical Evidence Paper WCS-MCS 4 ‘Landscape and AONB’.

Aerodrome Safeguarding

58. Aerodrome safeguarding is contained within ODPM Circular 01/2003. It provides details of the system of safeguarding for civil and military aerodromes.

59. Its purpose is to set out a consultation framework for alerting aviation operators of buildings, structures or works, which may: - infringe upon protected areas; obscure

4 The Cotswold AONB, Wye Valley AONB, and Malvern Hills AONB Management Plans were adopted in 2004 and sought to plan for the five-year period to 2009. Each plan is currently under review with a proposed publication by 2008.
runway approach lights; impair performance of navigation and telecommunication systems; distract pilots; and or increase the number of birds or the bird hazard risk.

60. The circular includes the provision of safeguarding maps, which delineate areas up to 13-kilometre radius in the case of civil aerodromes and 8 miles (about 12.87 kilometre radius) for military aerodromes, wherein development may attract birds.

61. In assessing the likelihood of attracting birds, local authorities are advised by the circular to look at a number of factors that may go beyond individual proposals. Cumulative effects must be carefully looked at; such as existing and nearby bird attraction features, existing land-uses, and possible bird flight lines across flight paths.

62. This is a key issue for the reclamation strategy within the MCS as the sand and gravel resources of the Upper Thames Valley fall within a military aerodrome-safeguarding zone. This may well have impacts upon the types of reclamation that could be delivered, balanced against any increase in bird strike risk.

Catchment Abstraction Management Strategies (CAMS)

63. CAM strategies are six-year plans, prepared by the Environment Agency for the management of local water resources.

64. The purpose of CAMS are to – inform on water resources and licensing practice; provide a consistent approach to local water resources management; help balance the needs of water users and the environment; and involve the public in managing water in their area. Gloucestershire has four local CAMs, which are at varying stages of preparation – Cotswold; Bristol & Avon; Severn Vale; and Wye.

65. In terms of mineral restoration and potential after uses, the management of surface and ground water could prove to be an important issue. The likelihood of receiving a water abstraction license may have an impact on delivering certain types of mineral restoration and support for after-uses. Consequently, the final recommendations headlined within each local CAM will need to be carefully monitored through the remaining stages of the MCS and for future mineral site allocation documents.

Gloucestershire Landscape Character Assessment (LCA)

66. The Gloucestershire Landscape Character Assessment (LCA) comprises three reports covering the Forest of Dean, Cotswolds AONB, and the remainder of the county. It provides a comprehensive baseline for the County Council and its planning partners such as the district councils. It also helps direct the management of landscape change to ensure that the pattern, character, and local distinctiveness of Gloucestershire’s landscape is celebrated, protected and enriched. The LCA’s main purpose is to – observe; analyse; describe and classify variations and distinctive patterns in the county’s landscape.

5 The third Gloucestershire LCA report specifically covers the areas of – Severn Vale; Upper Thames Valley; and the land on the northern fringe of the Cotswolds AONB within the Vale of Moreton and Vale of Evesham.
67. The findings of the LCA indicate that there are 38 different landscape character types in Gloucestershire. This is an unusually high number for the size of the county.

68. It is important that the MCS recognises the findings of the LCA. In particular, the future strategy for restoration and support for potential after-uses will need to take account of the respective LCA character types for different parts of the county and their management opportunities.

Mine Waste (European) Directive 2006/21/EC

69. The 'Mine Waste Directive' covers waste generated from the prospecting, extraction and processing of mineral resources, such as overburden and topsoil, waste rock, and tailings.

70. The Directive proposes that mineral workings must operate under a permit, obtainable through the submission of a waste management plan for minimising the generation and harmfulness of waste. The provisions are directed at the management of mineral waste at storage areas, ponds and heaps but not excavation voids. The Directive also proposes that permit holders should be required to hold financial guarantees for the rehabilitation of land affected by their activities.

71. The impact of the Mine Waste Directive on mineral restoration is as yet unknown. Currently, Member States have until May 2008 to decide how they are going to implement the Directive.

72. The Department for Communities and Local Government (DCLG) is currently undertaking consultation on how the Directive should be implemented in the UK.

Environment Protection (Waste Licensing) Regulations 2005

73. The restoration of worked out mineral sites can often require the importation of materials for infilling, face stability and / or other engineering requirements. Certain waste types can provide a suitable and viable source of restoration material, where it is not already available on-site.

74. However, the management of waste is covered by a strict licensing regime, administered by the Environment Agency (EA). Consequently, before any waste can be used for mineral restoration purposes it must meet all relevant licensing requirements as set down by the EA or be considered exempt from their control.

75. Current waste management exemptions can be found under the Environment Protection Waste Licensing Regulations (2005). These allow for the use of certain wastes for agricultural benefit or ecological improvement, particularly where the fertility of land is being improved. In this category waste from soils (excluding from contaminated sites), stones, and dredging spoil can be used on farmland, forests, parks, and miscellaneous sports-grounds. Limits on this exemption are equal to 1,250 tonnes of stored material, landtake of up to 50 hectares and a total of 250 tonnes of material per hectare, except for dredged soils, where 5000 tonnes per hectare can be used.
A further exemption category is concerned with the reclamation or improvement of land, where it is being returned to use. Similar to the first exemption, the waste types covered include: soils (excluding from contaminated sites), stones, and dredging spoil used on farmland, forests, parks, and miscellaneous sports-grounds. However, the exemption is limited to six months of on-site storage and a total coverage of no more than 20,000 cubic metres per hectare to a maximum depth of 2 metres.

Albeit that the requirement of a waste management license does not necessarily prevent the use of waste materials for mineral restoration, it does represent an influential factor in terms of the deliverability of potential after uses. This is due to differing requirements for infill materials and the relative availability of source materials.

A key issue here is the relationship with the hydrological system associated with particular mineral resources. Generally this has resulted in the bulk of Gloucestershire’s mineral workings not being suitable for restoration schemes that require notable quantities of waste / inert materials (whether through exemption or not). The exception has been mineral workings within the Severn Vale area of the county, where sand and gravel has been worked to reveal significant clay layers capable of taking waste / inert materials for restoration.

Emerging MCS – Issues & Options

Issues & Options provided stakeholders with two broad options for a future local policy on the restoration and after-use of worked out mineral sites. The first option was a continuation of the Mineral Local Plan policies whilst the second option was a more spatial approach that would offer more proactive advice on restoration and opportunities to support particular after uses. The second option was the most popular amongst stakeholders.

In addition, the Issues & Options consultation encouraged stakeholders to offer their views and comments on the future restoration of mineral sites and support for after-uses in Gloucestershire. The following matters where raised:

- A more strategic approach to restoration is need;
- More consideration should be given to local enhancement and after-use opportunities from the start of mineral working;
- Attention should be given to biodiversity targets; and
- Strict controls on infilling and landfilling are needed with restoration.

Emerging MCS – Initial Sustainability Appraisal & Appropriate Assessment

The initial Sustainability Appraisal looked at restoration and after-use policy options as set out within the Issues & Options consultation for the MCS.

The SA did not identify an overall favoured or preferred option. However, it noted that both the Minerals Local Plan policies and the alternative - a more proactive approach, were mostly positive when scored against the 15 SA objectives. In particular, major
positive scores were recorded for the Minerals Local Plan policies over the short, medium and long term, when assessed against the objectives for – promoting sustainable development, protecting health and well-being; contributing towards education, employment and recreational resources; protecting, conserving and promoting biodiversity; and enhancing and maximising environmental benefits.

83. Nevertheless, a small number of appraisal uncertainties, were also recorded with both policy options. For the existing Minerals Local Plan policies these related to the objectives for – affordable housing, flood prevention and reducing landfill. While for the alternative approach, these were concerned with the longer-term impact of the option on all SA objectives.

84. An Appropriate Assessment (AA) of protection European sites was also carried out at the Issues & Options stage of the MCS.

85. The purpose of AA is to screen for potential impacts upon the protected European designations in and around the county so as to ensure that their future protection is integrated into the local planning process. A total of 10 European sites have been designated in and around Gloucestershire. These include – Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar Sites.

86. In light of the strategic nature of mineral restoration and after-use options presented at the Issues & Options stage, the AA was unable to single out any likely significant effects on particular European sites. It also concluded that due to the type of options being proposed neither would likely result in significant effects on the county’s designated European sites.
Section 3
Gloucestershire’s Mineral Reclamation Challenge

87. There is potential within Gloucestershire to successfully deliver the reclamation of worked-out mineral sites. The diversity of mineral operations within county, in terms of their size, scale, intensity, longevity and working technique, means that a wide of different after-uses can feasibly be supported.

88. However, successfully achieving mineral reclamation still represents a significant spatial challenge, for which this section of the report seeks to explore in some detail. The proceeding paragraphs sets out the key challenges facing the county and the preparation of the MCS.

‘Two-tier planning areas...’

89. Gloucestershire operates as a two-tier planning area with a County Council and six District Councils. These councils have discrete planning duties. The County Council is charged with the planning responsibility for minerals, waste and the council’s own developments, whilst each of the six District Councils are concerned with planning control for all other types of development within their respective area.

90. In relation to successful mineral reclamation, the two-tier planning model poses a significant administrative challenge. It requires close-working relationships to be secured, which will establish clear and coherent approaches to the delivery of desirable land uses following mineral working. In all cases, different geo-political priorities, interests, and timescales for the decision-makers must be reconciled. However, this matter takes on heightened importance, where more substantial after-use proposals are under consideration, as these will require the separate planning approval of the respective District Council^6^.

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^6^ MPG7 confirms that mineral after uses other than agriculture, forestry, nature conservation and informal recreation, which...
91. The administrative boundaries of Gloucestershire rarely reflect its underlying geology and distribution of mineral resources. As a result the county's mineral deposits often occur within adjoining authority areas. The sand & gravel deposits of the Upper Thames Valley area provide a good example of this, with workable resources extending southwards into Wiltshire and Swindon, and eastwards into Oxfordshire.

92. The presence of cross-boundary mineral resources represents a similar spatial challenge to that of two-tier planning areas. To secure successful mineral reclamation, a clear and consistent land-use strategy that reflects the different geo-political priorities, interests, and timescales of all decision-makers in the process must be achieved. Furthermore, the presence of cross-boundary mineral resources creates greater complexity for the decision-making process. It introduces an additional planning influence on where and when mineral working should take place in the future, as well as how mineral working sites, should be reclaimed.

93. There is a growing realisation that well planned mineral restoration can provide for a wide range of beneficial after-uses. However, delivering the ‘right’ scheme for a particular site or area can prove a complex spatial challenge. There is increasing competition to deliver particular after-uses. Furthermore, the delivery of certain after-uses can also result in conflict with existing land uses and other previously agreed after-use proposals.

94. In Gloucestershire, sand & gravel working in Upper Thames Valley demonstrates both competing and conflicting after-use issues. Mineral working in the area has frequently resulted in water-based restoration, which is an attractive tourism, recreation and nature conservation resource. Although these different land uses can be managed together, they are often in competition for both space and prominence.

95. In terms of conflicting after-uses, water-based restoration in the Upper Thames Valley can also caused concern with the existing military airbase; RAF Fairford. The introduction of new and extended bodies of water through restoration has attracted new bird populations, which is successful in terms of biodiversity and nature conservation interests. However, this circumstance has also heightened concern over the risk of bird strike for aircraft using the airbase.

96. The successful restoration of worked-out mineral sites in Gloucestershire often requires the importation of infill material such as inert waste. This material may be necessary to support desirable landforms and levels and for civil engineering requirements such as slope instability.
However, evolving waste policies\(^7\) and an increasingly stringent waste management system, is beginning to affect the availability of inert wastes for restoration purposes. It is also influencing the operators of mineral sites, in terms of their readiness to use inert waste. This matter was reinforced at a recent waste forum held by the County Council, which was attended by local minerals and waste operators\(^8\). In particular concern was raised as to the increasingly prohibitive local controls being placed upon the management and use of inert waste around the county.

At the local planning level, resolving all of these matters may prove difficult, as they represent wider policy consequences that are being promoted and supported by other external agencies such as the Environment Agency (EA) and national government. However, developing a more holistic strategy for mineral reclamation, with a clearer vision for after-use opportunities, may help to promote the appropriate use of infill materials such as inert waste at the local level.

99. A review of the following background technical papers for the emerging WCS, may be of assistance at this stage for understanding the dynamics of Gloucestershire’s evolving waste management system: -

- WCS-A ‘data’;
- WCS-C ‘Broad locational Analysis’
- WCS-F ‘Making Provision’;
- WCS-G ‘Waste Facilities Types’

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\(^7\) Evolving waste policy in this context relates to Planning Policy Statement 10 (PPS 10): Planning for Sustainable Waste Mgmt and the National Waste Strategy (2007), which collectively seek to support the overall reduction in the amount of waste being generated and where this cannot occur, to maximise the amount of value generated from it, before disposal.

\(^8\) In 12\(^{th}\) June 2007 Gloucestershire County Council held a forum for independent Construction & Demolition (C&D) waste operators with an interest in Gloucestershire. More detailed of the event can found in the WCS Evidence Paper ‘Waste Industry Involvement’.
Section 4
Spatial Priorities and
Mineral Reclamation in
Gloucestershire

100. Mineral reclamation can offer a wide range of options to realise new and beneficial after-uses. At its basic level, reclamation can help to return land to its original use. However, alternative and innovative reclamation schemes can also support a range of new after-uses. These may result in amenity and economic benefits to the local community and help to improve the environment.

101. In Gloucestershire, deciding which after-use proposals should be supported, has traditionally taken place at the site-specific level. Detailed engineering matters; the availability of restoration materials; timing and development control issues such as public amenity and environmental protection, have largely influenced after-use proposals. In terms of local policy, support for beneficial after-uses has also been focused on the achievement of high standards of restoration and specific site considerations, rather than the identification of specific after-uses (see appendix A).

102. Nevertheless, a range of potential after-uses has also been provided in the MLP\(^8\), with the scope for delivery by the County Council as the MPA.

103. This local approach to mineral reclamation has successfully secured its importance and prominence in the decision-making for minerals development. It has also given operators and developers sufficient flexibility to devise innovative solutions for beneficial after-uses.

104. However, the advent of a new spatial planning system presents an opportunity to introduce a new holistic strategy for beneficial after-uses of worked-out mineral sites. This strategy may help to develop links between after-use opportunities and the wider aspirations or spatial priorities for utilising land within Gloucestershire, in the future.

105. This section of the study exemplifies the links that may exist between after-use opportunities and the county’s spatial priorities for land. It is specifically focused on Gloucestershire’s priority nature conservation and biodiversity interests.

106. To help show how links have evolved, a table of information is provided on the over the page, which shows the county’s mineral resource areas that are likely to be worked

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\(^8\) Paragraph 8.3.2 of the Adopted Minerals Local Plan identifies a suite of generic after-uses opportunities, which may prove appropriate for worked-out mineral sites in Gloucestershire.
in the foreseeable future\textsuperscript{10}. The table also includes examples of spatial priorities for nature conservation land uses identified within each resource area.

107. It is important to note that the delivery of these spatial priorities is within the scope of the County Council as the MPA for the area. However, a wider range of spatial priorities will require joined-up working with all appropriate bodies.

108. In the event that a holistic strategy for beneficial after-uses can be taken forward within the MCS, a detailed assessment of priority land uses for each of the county's mineral resource areas will be required. This exercise represents a significant expansion of the table of information provided and further investigation of evidence base for the MCS. It would need to consider a wide range of potential new land-uses such as community facilities; infrastructure; residential and commercial development; and tourism & recreational resources.

\textsuperscript{10} A total of four Mineral Resource Areas have been defined for Gloucestershire, which are detailed within Technical Evidence Paper MCS-G ‘Mineral Resources and Safeguarding’. These areas are: The Forest of Dean, The Severn Vale Corridor; The Cotswolds; and the Upper Thames Valley. Each area includes known mineral resources, which are currently being worked and, or have been secured / planned for working in the future.
Table 1: Example links that may exist between the after-use opportunities of the county’s key mineral resource areas and spatial priorities for utilising land in the future, from within each area

<table>
<thead>
<tr>
<th>Mineral Resource Area</th>
<th>Spatial priorities for utilising land in the future</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Upper Thames Valley</td>
<td>Nine Strategic Nature Areas (SNAs) have been designated within the Cotswold Water Park, which lies within the wider Upper Thames Valley mineral resource area. The goal for each SNA is to achieve at least 30% lowland meadow.</td>
</tr>
<tr>
<td></td>
<td>The draft revision of the Cotswold Water Park Biodiversity Action Plan (BAP) 2007 – 2016, which covers part of the wider Upper Thames Valley mineral resource area, targets the creation of: - up to 20ha of species-rich grassland; 150ha of wet grassland for waterbirds; 20 ponds for amphibians; a large reedbed (20ha+) for the eastern and western part of the Water Park area; a further 150ha of reedbed habitats; at least 50ha of new boundary features; and wildlife corridors to enable the safe passage of species between rivers and lakes.</td>
</tr>
<tr>
<td>The Forest of Dean</td>
<td>Thirty-five Strategic Nature Areas (SNAs) have been designated within the Forest of Dean area. Ten SNAs propose woodland priority habitats, whilst twenty-five SNAs seek to create new grassland habitats.</td>
</tr>
<tr>
<td></td>
<td>The Gloucestershire Biodiversity Action Plan sets an aspirational target of 780ha of restored woodland habitats by 2015 for the designated Dean Plateau and Wye Valley nature area (see appendix C), which encompasses the Forest of Dean Mineral Resource Area. The BAP also targets the creation of: - 60ha of new heath land; 50 ha of open acid grassland; up to 400ha of re-created limestone grassland; and a local contribution towards 25kms of new hedgerows.</td>
</tr>
<tr>
<td>Severn Vale Corridor</td>
<td>Twenty-one Strategic Nature Areas (SNAs) have been designated within the Severn Vale area. The aim for each SNA is to achieve up to 60% high quality floodplain grazing marsh.</td>
</tr>
<tr>
<td></td>
<td>The Gloucestershire Biodiversity Action Plan sets a 50ha target for new salt marsh habitats over the designated Severn and Avon Vales natural area (appendix C). This nature area includes all of the Severn Vale Corridor Mineral Resource Area. The BAP also includes an aspirational target of 20ha for restored woodland and a local contribution to 25kms of new hedgerows.</td>
</tr>
<tr>
<td>The Cotswolds</td>
<td>Over 100 Strategic Nature Areas (SNAs) have been designated within the Cotswolds area. The vast majority of these SNAs look to promote new limestone grassland habitats. There are also five specific SNAs concerned with woodland habitats.</td>
</tr>
<tr>
<td></td>
<td>The Gloucestershire Biodiversity Action Plan sets a target of up to 400ha of re-created limestone grassland by 2010 for the Cotswold nature area (see appendix C). The BAP also includes an aspirational target of 220ha of restored woodland and a local contribution towards 25kms of new hedgerows.</td>
</tr>
</tbody>
</table>
Appendix A
Gloucestershire
Adopted Minerals Local Plan
- Restoration Policies

Policy R1
Proposals for mineral development will only be permitted if they are accompanied by a reclamation scheme that provides for the following matters to be taken into account:

1. The site will be operated to ensure that the proposed reclamation scheme will be successful,
2. Waste materials arising from the extraction of minerals on site are utilised to restore the site,
3. The restoration is completed at the earliest opportunity and, where practicable, progressive restoration is carried out,
4. Other measures to minimise the disturbance to adjacent land-uses are included,
5. Harm arising from traffic generated by the reclamation is minimised,
6. The surrounding topography is considered to ensure that the site is sensitively reclaimed in keeping with the character of the local area,
7. Where appropriate, measures to protect local, regional and national sites of acknowledged importance are included, and the reclamation of the site provides for environmental and landscape enhancement as guided by Policy R2 of this Plan.

Policy R2
Mineral operators will be required to facilitate realistic proposals for after-use as part of the reclamation scheme. Proposals will, where appropriate:

1. Enhance the local character of the area,
2. Benefit the local community,
3. Support and diversify the local economy,
4. Improve the local environment by providing increased public access to the countryside and recreation and creating public open space,
5. Support and enhance national, regional and local biodiversity,
6. Restore best and most versatile agricultural land back to grade,
7. Be innovative.

All after-use proposals must be acceptable in terms of traffic impact, both on the highway and on local communities.

Policy R3
Worked out mineral sites will be reclaimed at the earliest opportunity to an approved beneficial after-use, and wherever practicable progressive restoration will be required.

Policy R4
Reclamation proposals, which will significantly enhance the environment of worked-out mineral sites that have not been reclaimed to a standard satisfactory to the Minerals Planning Authority, will be permitted, where the proposal accords with all other relevant policies of this Plan.
Appendix B
South West Regional Nature Map & BAP Targets for Gloucestershire

South West Regional Nature Map – Gloucestershire Version
Gloucestershire BAP

Habitats Action Plans

ESTUARIES, SALTMARSH AND MUDFLATS
ORCHARDS (REVISED VERSION APRIL 2005)
CANALS
WET GRASSLAND
STANDING OPEN WATERS
LIMESTONE GRASSLAND
UNIMPROVED NEUTRAL GRASSLAND
AND/OR ANCIENT HEDGEROWS
CEREAL FIELD MARGINS
PAVEMENT
WOODLANDS
WOODPASTURE, PARKLAND AND VETERAN TREES

RIVERS AND STREAMS
REEDBEDS
DRY ACID GRASSLAND
URBAN HABITAT
HEATHLAND
OLD
LOWLAND
UNIMPROVED
SPECIES RICH
LIMESTONE

Species Action Plans

Vertebrates

Great crested newt
Bittern
Farmland

Birds (including skylark, linnet, Woodlark
Brown hare
reed bunting,
corn bunting, tree sparrow,
Spotted flycatcher
grey
Dormouse
Water vole
Allis and Twaite shad
European otter
Nightjar

Bats (including barbastelle, bechstein’s bat, pipistrelle, greater horseshoe bat, lesser horseshoe bat)

Invertebrates

Various species of Ants and bees
Various species of Flies
High brown

Stag beetle
Various species of Beetles
Marsh fritillary

Butterfly
Various species of Moths
The Lauria

Pearl-bordered fritillary butterfly

Various species of Freshwater mussels
White clawed crayfish

Flora, Fungi & lichens

Devil’s bolete
Hygrocybe calyptropermis wax cap
Bacidia

incompta lichen

Tower mustard
Various

Round-leaved feather moss
True fox-sedge
Juniper

species of Arabid wildflowers
Perfoliate pennycress
Tassel

Prickly sedge
Starry stonewort
Great tassel

Early gentian

Lesser bearded stonewort

Stonewort
### Cotswold Water Park BAP

#### Habitats Action Plans

<table>
<thead>
<tr>
<th>Category</th>
<th>Habitat</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing Open Water and its Margins</td>
<td>Marsh and Swamp</td>
<td>Lowland</td>
</tr>
<tr>
<td>Neutral Grassland</td>
<td>Canals</td>
<td>Boundary</td>
</tr>
<tr>
<td>Rivers and Streams</td>
<td>Cereal Field Margins</td>
<td>Woodland</td>
</tr>
</tbody>
</table>

#### Species Action Plans

<table>
<thead>
<tr>
<th>Species</th>
<th>Habitat</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water vole</td>
<td>Otter</td>
<td>Bittern</td>
</tr>
<tr>
<td>Pochard</td>
<td>Gadwall</td>
<td>Freshwater</td>
</tr>
<tr>
<td>White-clawed crayfish</td>
<td>Lesser bearded stonewort</td>
<td>Tufted duck</td>
</tr>
<tr>
<td>Reed bunting</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C
Natural Areas for Gloucestershire