Minerals Core Strategy

Technical Paper MCS-A

Sand & Gravel Provision and Strategic Locations Report

Version I - July 2007
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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 Strategy. Consequently this report acts as part of the evidence base for the emerging spatial policy on aggregate provision for Gloucestershire. Its focus is upon the future provision requirements for sand & gravel to meet the regional guidelines for the South West (2001-2016).

3. The first part of this report sets out the national, regional and local policy context concerning the future planning of sand & gravel. It makes specific reference to the final, published version of Minerals Policy Statement 1 (MPS1) and the submission draft of the South West RSS.

4. The second part provides the spatial context for sand & gravel in Gloucestershire and headlines updated information on resources, reserves, and market supply trends for the County up to 31/12/2005.

5. The third and fourth parts of the report, discusses the detailed methodology behind making appropriate provision for the supply of sand & gravel in Gloucestershire. It also headlines how provision requirements might be delivered by the MCS by introducing a series of draft options for discussion.

6. The draft options look to progress the development of the MCS by providing clear and deliverable policy options for consideration at the next preparation stage – Preferred Options.

7. These options are based on an assessment of national and regional policies against local circumstances and characteristics. They also seek to embrace the views already provided by stakeholders during the earliest stage of the MCS – Issues & Options, the initial Sustainability Appraisal and Appropriate Assessment.

8. Your views on the contents of this evidence paper are encouraged, as the information provided within the paper will be central to the future preparation of the MCS.

9. However, there will still be an opportunity to formally comment on your “favoured” options at the Preferred Options stage.

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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.
Section 2
Policy Context

10. Sand & gravel is essential to built development, other construction, and the maintenance of national infrastructure such as roads, bridges and flood defences. It contributes greatly to delivering sustainable communities through growth and regeneration. However, there are notable imbalances across the country between the location of suitable resources and areas where it is needed. Furthermore, where favorable sand & gravel resources are available, they are often overlain by high quality agricultural land, designated for their environmental value, or subject to significant development pressures.

11. A sound policy framework is therefore needed to balance competing interests and to safeguard appropriate resources to ensure steady supplies from areas of surplus to areas of demand and deficit. This is addressed through national and regional guidelines for aggregate provision and the translation of these policies in Regional Spatial Strategies (RSSs) and Local Development Frameworks (LDFs).

National Policy

12. National policy for minerals is set out in Minerals Policy Statement 1 (MPS1). However, Annex 1 to MPS1 highlights specific objectives concerning future land-won sand & gravel extraction. These objectives are as follows:

- To encourage the use, where practicable, of alternative aggregates in preference to primary aggregates; and
- To make provision for the remainder of supply to be met from land-won sand and gravel and crushed rock.

13. Whilst the focus of this report is upon the latter of the two objectives, a separate evidence report on recycled and secondary aggregate opportunities is planned for publication in the near future.

14. Annex 1 to MPS1 provides the policy mechanism for making provision for land-won aggregates through published national and regional guidelines for aggregate provision in England. These guidelines intend to assist regional planning bodies (RPBs) in the preparation of RSSs and mineral planning authorities (MPAs) in their production of local development documents (LDDs). Their purpose is to address geographic imbalances between the supply and demand for aggregates at a national level by encouraging a mixture of sites that contribute to meeting local, regional and national demands.
15. In June 2003, the Government published the current National & Regional Guidelines for Aggregate Provision in England (2001-2016). These guidelines require the English regions to make provision for up to 1068 million tonnes of sand & gravel between 2001 and 2016 inclusive. For South West, the regional guidelines highlight a sand & gravel requirement of 106 million tonnes. The full National & Regional Guidelines for Aggregate Provision in England (2001-2016) are set out in Appendix B.

16. The need for MPAs to maintain a landbank of permitted reserves is a further national policy detailed in Annex 1 to MPS1. A landbank is defined as the sum of all permitted reserves of a particular mineral type, within active and inactive sites, at a given point in time, and given area. It is a widely used mechanism for securing and maintaining steady supplies of mineral by reflecting the time taken to obtain planning permission and bring a site into full production. The landbank also works as an important indicator for when new planning permissions are likely to be needed. In this context, MPAs are required to take account of the length of the landbank in their area when making future provision for aggregates. The minimum length of the landbank for sand & gravel is at least 7 years.

Regional Policy

17. Regional Planning Bodies (RPBs) are required to set out how much provision should be made for each local area in the region in order to satisfy the regional guidelines through to the end of 2016. The provision set out for each area is known as the ‘sub regional apportionment’ or ‘local apportionment’. The process for working out local apportionments must take into account technical advice from the Regional Aggregate Working Party (RAWP) and be subject to sustainability appraisal. In preparing the RSS, the RPB must apply the regional guidelines and headline the agreed local apportionments for each local area.

18. For Gloucestershire, the emerging RSS identifies a local apportionment of sand & gravel equal to 18.18 million tonnes over the guideline period 2001 to 2016 inclusive. The local apportionments for sand & gravel for all the areas in the South West region are set out in Appendix B.

19. During the local apportionment process the RPB recognised some potential long-term provision issues in delivering the regional guidelines. These issues included a shortfall in crushed rock provision from Gloucestershire and shortfalls in sand & gravel provision for Gloucestershire, Wiltshire and Dorset.

20. An assessment of the regional shortfalls was commissioned by the RPB through a technical and strategic report of supply options in the South West. The conclusion to this report highlighted the potential for collaborative working between the MPAs with shortfalls in sand & gravel provision. The submission draft of the RSS carries forward the advice from the technical report.

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2 In June 2005 the South West Regional Assembly (SWRA) as the Regional Planning Body (RPB) published a technical report on aggregate reserves and the potential use of secondary and recycled aggregates in the South West for the emerging RSS. Capita Symonds Ltd prepared the report for SWRA. The project reference for the report is SWRA/Aggregates/0894.
and encourages collaborative working between the relevant MPAs. The draft regional aggregate policies are set out in Appendix C.

21. Consequently, the MCS should consider the alternative options of maintaining sand & gravel provision in line with the local apportionment of the regional guidelines and the potential requirements of the other shortfall MPAs as set out in the emerging RSS.

Local Policy

22. The MCS should seek to maintain provision for sand & gravel through taking account of the local apportionment of the regional guidelines as set out in the emerging RSS. However, in considering the apportionment, appropriate tests of practicality and environmental acceptability must be carried out. It is important that the regional guidelines are assessed at the local level and must not be seen as inflexible. Furthermore, the provision options borne out of the local apportionment must be subject to sustainability appraisal at the earliest possible stage.

23. Strategic and local policies concerning sand & gravel extraction in Gloucestershire are currently set out within the Structure Plan 2nd Review (1999) and Minerals Local Plan (1997-2006).

24. Policies M.7 and M.8 of the Structure Plan provide the overall strategy for sand & gravel in Gloucestershire. Policy M.7 seeks to ensure that appropriate provision is made for aggregates based on the regional guidelines. It also supports the maintenance of an appropriate landbank of permitted reserves. Policy M.8 provides the spatial context and identifies the deposits of Upper Thames Valley resource area for future working.

25. Chapter 3 of the Gloucestershire Minerals Local Plan (1997-2006) sets out specific local policy for sand & gravel. It identifies an annual provision rate of 1.29 million tonnes over the plan period and supports the maintenance of at least a 7-year landbank of permitted reserves at the end of the plan period. To meet future provision requirements the plan also highlights four preferred areas for sand & gravel extraction. These are Dryleaze Farm, Cerney Wick, Horcott / Lady Lamb Farm and Kempsford / Whelford. A map illustrating the Gloucestershire preferred areas is found under Appendix F.

Other Spatial Considerations

Emerging MCS - Issues & Options Consultation

1. The Issues & Options consultation provided stakeholders their first opportunity to pass on their views on the future of minerals planning in Gloucestershire.

2. In terms of the local apportionment and provision requirements to meet the new regional guidelines, stakeholders were presented with a series of targeted options. These sought to breakdown the complex process of determining future provision into more manageable parts for public discussion.
3. The targeted options focused on what level of provision should be made in future; how the resulting provision requirements should be looked at locally; whether undeveloped preferred areas from the existing adopted Minerals Local Plan should be considered, and finally whether a phasing strategy is necessary.

4. The level of provision favoured by stakeholders was that which took into account potential constraints on working in the county. This was followed by the option to combine the requirements of the local apportionment with potential constraints on working.

5. In terms of the way in which provision should be looked at, stakeholders opted for a sub-division of provision based on aggregate types from within the county’s key mineral resource areas. However, there was no consensus as how this sub-division should be carried out.

6. Furthermore, stakeholders did not object to the possible use of undeveloped preferred areas from the adopted Minerals Local Plan. Although support was given to the potential review of all areas before they were carried forward into the MCS. In respect of a phasing strategy, most respondents wished to see this introduced.

7. Alongside the targeted options, stakeholders were able to raise individual comments. These looked at a range of issues concerning the impact of meeting the local apportionment and the way in which it could be applied on the ground. These comments will need to be carefully interrogated and carried forward into detailed policy options for the next stage of the MCS – Preferred Options.

8. A summary consultation response report and full list of consultation responses from Issues & Options is available to view and/or download from on the County Council website:\footnote{The MCS Issues & Options consultation responses can be found via – http://www.gloucestershire.gov.uk/index.cfm?articleid=14094}
Emerging MCS – Initial Sustainability Appraisal & Appropriate Assessment

9. The Initial Sustainability Appraisal looked at each of the targeted options set out within the Issues & Options for the MCS.

10. The favoured SA approach for looking at the level of provision, suggested a combination of the local apportionment; potential constraints; and a continuation of existing levels of production. This approach offered, neutral, positive or major positive effects against the 15 SA objectives over the short to medium term. However, it was deemed uncertain over the long term.

11. The summary comments from the SA supported the combination approach in that it would be able to – take account of emerging regional policy; provide for flexibility in the market; and consider constraints on reserves. It was also advised that an appropriate balance of combined, targeted options should ensure the most sustainable approach is adopted.

12. In terms of how provision should be looked at locally, the SA broadly favoured the approach adopted by the existing Minerals Local Plan. This was a subdivision of provision between the county’s key resource areas. Over the short to medium term the effects of following this approach were deemed to be positive or neutral. Although over the long term the effects were considered to be uncertain.

13. The SA concluded that the subdivision approach would acknowledge the different quality of crushed rock reserves across the county. This should ensure that appropriate provision is made to satisfy a range of necessary aggregate end-uses.

14. Undeveloped preferred areas from within the adopted Mineral Local Plan were also considered against the SA objectives. It concluded that a review of these areas would prove to be the favoured way forward. This approach would ensure that recent guidance and legislation could be taken into account, alongside a full and detailed review of each area against the SA Framework. In relation to the SA scoring of this approach, it was concluded that the use of reviewed, preferred sites would enable a better and more detailed examination of longer-term effects.

15. The use of phasing strategy for aggregate provision was also assessed against the SA objectives. This provided for a mix of effects. Majorly positive effects were recorded in terms of enhancing Gloucestershire’s environment – particularly through biodiversity opportunities and the wider planning of mineral site restoration schemes. However, more uncertainties were identified in several areas such as safeguarding amenity and ensuring steady and consistent supplies. The SA concluded that a phasing strategy might be overly restrictive upon the pattern of supply.

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

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

18. In light of the strategic nature of the provision and supply options presented at Issues & Options, the AA was unable to highlight any likely significant effects on the 10 designated sites. However, a significant number of uncertain effects were recorded for the targeted option to review undeveloped preferred sites from the Minerals Local Plan. This was due to the unknown parameters of a review, which may or may not increase the potential impact upon designated sites.

19. The headline conclusions from the initial SA and AA process will need to be factored into the MCS framework for making provision and ensuring supply of aggregates. In this instance particularly attention should be paid to those deliverable policy options that record more positive impacts in respect of the SA objectives and, or will result in less likely significant impacts on designated European sites in and around Gloucestershire.

20. Community Strategy

Local Authorities have a duty to prepare Community Strategies. Gloucestershire County Council’s community strategy was adopted in 2004. It was drawn up following community involvement and aims to deliver economic, social and environmental well-being in a sustainable way.

21. The Government is keen to ensure that there is integration between Community Strategies and planning documents: planning is a tool for local authorities to use in taking forward the community strategy’s vision for their area.

22. The Gloucestershire Community Strategy 2004-2014 has a vision to:

‘Make a positive difference for people who live in, work in and visit Gloucestershire.’

23. Through ensuring a steady, consistent and well managed supply of aggregate minerals, (including sand & gravel), the MCS has an important spatial role to play in helping to delivery the Community Strategy. This is borne out of the need for aggregates to maintain and build upon necessary infrastructure for the county, which should demonstrate a contribution towards making a positive difference for people in and visiting Gloucestershire.

24. A revision to the Community Strategy, known as the Sustainable Community Strategy (SCS) is also underway. An initiation conference was held in March 2007 to introduce the SCS to key stakeholders. Further public consultation events are also planned for later in spring / summer 2007.

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4 The Gloucestershire Strategic Partnership hosted an introduction to the new Sustainable Community Strategy (SCS) on 27th March 2007 at the Holiday Inn, Barnwood. Its focus was on existing partnership organisations.
District Local Development Frameworks

26. District Councils in Gloucestershire will each prepare a Local Development Framework (LDF) for their area. These will contain policies and identify sites for a range of land uses including housing, industry and employment.

27. Careful consideration will need to be given to the future siting of new non-minerals development to ensure that these do not result in the sterilisation of mineral resources such as aggregates. Furthermore the siting of sensitive land-uses near to mineral working should be avoided.

28. LDFs must take account of a range of spatial issues, which may go beyond traditional land-use planning. In terms of minerals and in particular construction aggregates, careful consideration should be given to sustainable construction, waste minimisation in new developments, and more sustainable transport infrastructure. Where appropriate, LDFs should also consider polices that identify sites for rail or water-served distribution or processing plants for primary and recycled aggregates.

29. To ensure consistency between local authorities in the two-tier planning areas, District LDFs are also required to show on their proposals maps areas of future mineral working and areas of known mineral resources, which are designated as Mineral Consultation Areas (MCAs).

Local Transport Plan

30. The Local Transport Plan (2006-2011) includes an objective for reducing impacts of lorry movements and freight traffic, which may include aggregate haulage. It aims to improve freight efficiency and reduce environmental impacts through the development of a local route strategy, more access restrictions on certain roads, and partnership with the haulage industry. The LTP also aims to support more sustainable freight movements such as rail, sea and inland waterways through the development of existing and new infrastructure.

31. Future spatial policies for minerals and in particular aggregates, will need to carefully consider the outcomes and recommendations of the LTP, particularly where they seek to influence changes in market supply and haulage across the County and beyond.

The Cotswold Water Park

32. The Cotswold Water Park (CWP) covers an area of about 40 sq. miles. It is made up of low-lying agricultural land interspersed by a complex network of over 133 lakes. Parts of the CWP fall outside Gloucestershire, in North Wiltshire. The water park was formed out of the sand & gravel extraction of over the last fifty years from within the Upper Thames Valley resource area. As sand & gravel pits have come to the end of their working lives, they have developed into a network of inland lakes. These lakes are now being developed so as to accommodate a number of environmental and recreational uses. The CWP is managed by the
Cotswold Water Park Joint Advisory Committee (CWP-JAC) assisted by a charitable trust called the Cotswold Water Park Society (CWPS).

33. Although sand & gravel working in many parts of the CWP has finished, it still represents a significant resource for the Upper Thames Valley. Consequently, the MCS should consider its potential for future sand & gravel supplies. However, this must be achieved under ever increasing and conflicting pressures on the CWP that must be carefully managed.

Cotswold Water Park Joint Committee

34. The Cotswold Water Park Joint Advisory Committee (CWP-JAC) was set up in the late 1960’s by the local authorities of Gloucestershire and Wiltshire to manage a designated area of the Upper Thames Valley, known as the Cotswold Water Park. Over time the membership of the Joint Committee has grown to include the district authorities of Cotswold and North Wiltshire, the neighbouring unitary authority of Swindon and other important stakeholders such as local town and parish councils, the Forestry Commission, Environment Agency and Natural England.

35. The key role of the Joint Committee is to provide a co-ordinated and strategic framework for the management and future development of the CWP area⁵. Currently it is preparing a Masterplan for the CWP in conjunction with the South West Regional Development Agency (SW RDA). The purpose of the plan is to provide an overarching framework for informing future development and regeneration opportunities for the CWP area⁶.

36. The Cotswold Water Park Joint Committee is an influential stakeholder within the CWP. As previously explained, this area falls within a key resource area for sand & gravel. Consequently, the MCS must carefully consider the strategic direction of the Joint Committee and in particular its emerging Master Plan for the Cotswold Water Park.

Cotswold Water Park Society

37. The Cotswold Water Park Society (CWPS) was formed in 1996 to take on the day-to-day management of the CWP from the Joint Committee. It also has an important role in promoting sustainable development throughout the CWP. The Society is a non-profit making environmental organisation that has a board of members drawn from the local authorities of Cotswold District, North Wiltshire, Gloucestershire County Council, Wiltshire County Council, Swindon Borough, local parishes, other interested organisations and businesses in and around the Water Park. A core function of the Society is to support the delivery of national

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⁵ Although the Joint Committee has a strategic role for the future development of the Cotswold Water Park, it does not operate as the local planning authority for the area. The district authorities of Cotswold and North Wiltshire and the unitary authority of Swindon Borough retain local planning powers for their respective areas. For minerals and waste, these matters are the responsibility of Gloucestershire and Wiltshire County.

⁶ The Cotswold Water Park Masterplan is currently undergoing an initial scoping stage. Consultants have recently been appointed (late 2006) to review the key issues and options for the future development of the CWP.
and local biodiversity action plan targets through survey, advice and encouragement for developers and landowners. It also has an important role of running and managing a number of County Parks within the CWP area.

38. As with the Cotswold Water Park Joint Committee (CWP-JAC), the Society is a key stakeholder in the future development of the CWP. The spatial policies of the MCS, particularly those concerning future sand & gravel extraction, will need to take account of the ongoing delivery of the CWPS’ objectives and opportunities for delivering the Water Park’s Biodiversity Action Plan (BAP).

Neighbouring Authority Minerals Development Plan Documents

39. The neighbouring MPAs to Gloucestershire have the responsibility to produce minerals planning documents for inclusion within their Local Development Frameworks. These documents, which may include a single Minerals Core Strategy or a joint Core Strategy with Waste, must set out the future policy for minerals development within their respective area.

40. The Government is keen to make sure that a greater degree of consistency is achieved between the policies and plans of adjoining areas. It also encourages collaboration and joint working, where opportunities exist.

41. For the MCS, and in particular future sand & gravel resources, the relevant strategies of the neighbouring MPAs will need to be carefully considered.

42. An understanding of strategic sand & gravel resources beyond Gloucestershire will be fundamental to the successful delivery of future spatial options. This takes on even greater importance in terms of emerging regional mineral policies, which have already been highlighted on page 11. The key neighbouring MPAs of interest include Wiltshire (including Swindon) and Oxfordshire. A brief commentary on the local policy context for these authorities is provided in the proceeding paragraphs.

Joint Wiltshire and Swindon Minerals Planning Authority

43. Local minerals policy for Wiltshire and the adjoining unitary authority of Swindon Borough is contained within the joint Wiltshire and Swindon Minerals Local Plan (adopted November 2001). The plan seeks to make provision for up to 29.2 million tonnes of sand & gravel to meet the regional guidelines (1992 – 2006). This requirement includes sufficient provision for a 7-year landbank throughout the plan period and is divided between “sharp” sand and gravel (77%) and “soft” sands (23%).

44. Following an assessment of existing permitted reserve during the plan preparation period, a shortfall in provision was identified. This resulted in the plan identifying preferred areas for future sand & gravel working. A total of 8 preferred areas are set out in the plan, which provided for an estimated yield of just over 8 million tonnes in total.7

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7 As of 31/12/2005, Wiltshire County Council had permitted two preferred areas from the adopted plan (i.e. Eysey Manor Farm & Roundhouse Farm). This has reduced the estimated yield contained in undeveloped preferred areas to just over 4 million tonnes.
45. Wiltshire and Swindon are in the process of producing a Minerals Core Strategy (WS-MCS). Similar to Gloucestershire this document will seek to provide the policy framework for future development plan documents such as site allocations and development control policies.

46. A key issue for the WS-MCS is the revised provision requirements set out in the regional guidelines. These provision requirements equal 29.66 million tonnes of sand & gravel (see Appendix B).

47. A recently published “Preferred Options” paper for the WS-MCS highlighted the need to make provision for an annual rate of 1.84 million tonnes of sand & gravel and the continuation of a 7-year landbank of permitted reserves throughout the plan period. However, unlike the adopted Wiltshire & Swindon Minerals Local Plan, the preferred options paper looks to support a combined provision for sand & gravel, rather than separate provisions for “sharp” sand and gravels and “soft” sands. Wiltshire and Swindon are currently considering further work on the preferred options for the WS-MCS including further public consultation in summer 2007.

48. Local minerals policy for Oxfordshire is set out within the Oxfordshire Minerals & Waste Development Framework. One of the first documents being produced is a Minerals & Waste Core Strategy (MWCS). Similar to Gloucestershire, this core strategy will look to provide the policy framework for future mineral working across Oxfordshire.

49. Oxfordshire are currently in the process of converting its Minerals & Waste Local Plan into a Minerals & Waste Development Framework. One of the first documents being produced is a Minerals & Waste Core Strategy (MWCS). Similar to Gloucestershire, this core strategy will look to provide the policy framework for future mineral working across Oxfordshire.

50. The future supply requirements for sand & gravel are a major issue for the Oxfordshire MWCS. These requirements are based on the local contribution made by the county to meet the regional guidelines set out for the South East region. This local contribution is equal to 29.12 million tonnes of sand & gravel over the guideline period and represents an annual provision of 1.82 million tonnes.

51. The Oxfordshire MWCS has already undergone early public consultation through an “Issues and Options” report in Summer 2006. More recently, a “Preferred Options”

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8 Wiltshire and Swindon Minerals Core Strategy Preferred Options consultation paper was published in June 2006.

9 The Preferred Option for sand & gravel within the emerging WS-MCS is based on discussion set out on pages 57-62 of the Wiltshire and Swindon Preferred Options consultation paper.

paper has also been published outlining the proposed policy strategy. Although the required annual provision rate of 1.82 million tonnes is to be carried forward, it is planned to be divided between “sharp” sand & gravel (83%) and “soft” sands (17%). In addition, the strategy includes a number of spatial options for looking at new sites. It advises that “sharp” sand & gravel resources in the west and south of Oxfordshire should be looked at for their future working potential along with “soft” sand resources in the Faringdon and Oxford areas.

Other neighbouring Minerals Planning Authorities

Section 3 of this report highlights the other neighbouring authorities that have a resource relationship with Gloucestershire. However, the resources contained in these areas do not share the same significance as those of Wiltshire or Oxfordshire, in terms of their market supplies and future reserve potential.

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11 Oxfordshire Minerals & Waste Core Strategy Preferred Options Paper was published for public consultation in February 2007

12 The Preferred Option for sand & gravel within the emerging Oxfordshire MWCS is based on discussions set out on pages 14 – 20 of the Preferred Options Paper.

13 Sand & gravel resources found in Worcestershire and Herefordshire lie outside of the South West region, in the West Midlands. These resources have a greater supply relationship with the Birmingham conurbation and the West Midlands, rather than with Gloucestershire. However, it is noted that a small amount of mineral that is worked close to the county border in Worcestershire, is marketed in Gloucestershire from time to time.
Section 3
Sand & Gravel in Gloucestershire

53. Aggregates are the most significant minerals extracted in Gloucestershire. This is in respect of production and overall land take. In the county they predominantly fall into two distinct mineral and resource groupings; limestones used as a crushed rock and sand & gravel.

Sand & Gravel Resources

54. Gloucestershire’s sand & gravel resources comprise of river deposits and some fluvial-glacial deposits that occur irregularly, but extensively over a number of lowland areas around the county. They are used by the construction industry as a building (“soft”) sand and as a key constituent in the manufacturing of concrete blocks and production of concrete mixes (“sharp” sand and gravels).

55. Notable concentrations of sand & gravel can be found within the Upper Thames Valley and throughout parts of the central lowland corridor of the Severn Vale.

56. There are also resources of sand & gravel in the far north east of the county along the Vale of Moreton and pockets of workable solid sand deposits in the Bromsberrow Heath area (see also technical paper MCS-C).

57. Although several sand & gravel areas can be defined within the county, many of these resources are distributed over a wider area than Gloucestershire. For the resources of the Upper Thames Valley, these straddle a significant proportion of the county’s south-eastern boundary into the neighbouring areas of Wiltshire, Swindon and Oxfordshire. There are also comparable resources to those found along the Severn Vale corridor, and to the North of the county within Worcestershire and Herefordshire.

58. Diagram 1 illustrates the spatial distribution of sand & gravel resources across Gloucestershire and neighbouring areas.

Sand & Gravel Supplies

59. In 2005, 1.03 million tonnes of sand & gravel was supplied from Gloucestershire. The majority of this supply (95%) was sourced from the Upper Thames Valley resource area. The remainder originated

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54 Detail geological information on sand & gravel resources in Gloucestershire can be found within the British Geological Survey (BGS) Mineral Resources Information Report: Gloucestershire (comprising South Gloucestershire) (ODPM / DCLG Ref: CR/05/105N)
Diagram 1: Sand & Gravel Resources in Gloucestershire and Surrounding Areas

Sand & Gravel Working within the Upper Thames Valley

**Gloucestershire Section:**
1. Spratsgate Lane
2. Shorncliffe
3. Cerney Wick
4. Oatree Fields
5. Horcott
6. Stubb's Farm
7. Manor Farm
8. Thornhill Farm
9. Manor Farm Complex
10. Cotswold Community
11. North End Works
12. Kent End Farm
13. Wickwater Farm
14. Cleveland Farm Complex
15. Latton Fields
16. Eysey Farm Complex
17. Roundhouse Farm

**Oxfordshire Section:**
18. Sandhill
19. Faringdon
20. Bowling Green Farm
21. Hatford
22. Shellingford
from sources elsewhere across the county (see fig 1).

**Figure 1: Sand & Gravel supplied from Gloucestershire during 2005 as a percentage breakdown between the Upper Thames Valley and elsewhere in the County.**

60. The average annual supply from Gloucestershire over the five-year period 2001-2005 inclusive was calculated at 0.88 million tonnes per annum. During this period, the average percentage breakdown of supply by resource area was 95% from the Upper Thames Valley and 5% from elsewhere in the County.

61. Detailed sand & gravel supply and resource distribution data between 2001 and 2005 can be found in Appendix A.

### Sand & Gravel Infrastructure

62. During 2005, 11 sand & gravel extraction sites were identified across Gloucestershire (see Diagram 1). Most of these were in production (8 sites) and only a small number (3 sites) were not working, but contained permitted reserves. The vast majority of sites were concentrated within the Upper Thames Valley resource area.

However, three relatively small operational sites were located along the Severn Vale corridor and in the Bromsberrow area. A comprehensive list of sand & gravel sites in Gloucestershire and neighbouring areas can be found in Appendix E.

63. In terms of sand & gravel processing, the Upper Thames Valley area has the most capacity available in the county. As at 31/12/2005, two concrete batching plants, four fixed processing plants and a block-making factory benefited from planning permission\(^\text{15}\). In addition, substantial processing opportunities can be found across the county boundary within Wiltshire. Example sites include: the Cleveland Farm Complex near Ashton Keynes and Eysey Manor Farm to the East of Latton\(^\text{16}\).

64. Outside of the Upper Thames Valley there is much less processing capacity, including two ready mixed concrete plants and several mobile processors. One of the ready mixed concrete plants is a stand-alone, satellite operation, which is fed by imported material some of which is barged along the river Severn and Sharpness Canal from Ryall quarry in Worcestershire.

\(^{15}\) Only information concerning those facilities that are permitted is currently available. Data on which of these facilities are in operation is being sought through the Council’s recently commissioned Minerals & Waste Monitoring Team.

\(^{16}\) Aggregate Industries Ltd operate the Cleveland Farm Complex. Although a very small amount of mineral extraction is still being carried out on-site, it is primarily run as a processing and manufacturing operation, using locally imported sand & gravel. Eysey Manor Farm, which is run by Tarmac Ltd, includes a ready-mixed concrete batching plant.
Sand & Gravel Markets

65. Market information for sand & gravel is based on washed and graded materials rather than as a finished aggregate product. Consequently, it is extremely difficult to establish true market information and trends of local supplies as it is often transported from one site to another (sometimes across county and regional boundaries) depending upon the availability of plant and the proposed end-use.

66. As a result the data for 2005 (see fig 3), would suggest that only a small fraction of sand & gravel was marketed directly within Gloucestershire (19%). However, it is more than likely that this figure was considerably higher, as a proportion of the county’s sand & gravel supplies recorded for elsewhere in the south west region (72%), would have been brought back to Gloucestershire as a finished aggregate product. A regional breakdown of sand & gravel supply data for Gloucestershire during 2005 is provided below in fig 2 and within Appendix A.

Sand & Gravel Reserves

67. As at 31/12/2005 the countywide reserves of sand & gravel totalled 7.84 million tonnes. The majority (88%) was located within the Upper Thames Valley resource area. The remainder originated from elsewhere in the County (see fig 3).
Figure 3: Sand & Gravel Reserves for Gloucestershire as at 31/12/2005 as a percentage breakdown between the Upper Thames Valley and elsewhere in the County

<table>
<thead>
<tr>
<th>Upper Thames Valley Resource Area</th>
<th>Elsewhere in the County</th>
</tr>
</thead>
<tbody>
<tr>
<td>12%</td>
<td>88%</td>
</tr>
</tbody>
</table>

Remaining Years of the Sand & Gravel Landbank

68. Based on the annual provision rate to meet the local apportionment (1.14 million tonnes per annum), Gloucestershire has a remaining landbank of sand & gravel reserves equal to 6.88 years as at 31/12/2005. However, the landbank would be longer if it was based on the current annual production figure (1.03 million tonnes per annum). A detailed commentary on the future of the county’s sand & gravel landbank is contained within sections 2 and 4 of this report.

Strategic Sand & Gravel Resources

69. A significant proportion of Gloucestershire’s sand & gravel resources originate from within the Upper Thames Valley (UTV). However, as described earlier in this section, this resource area is not confined to the county’s administrative boundaries and stretches into the neighbouring areas of Wiltshire (including Swindon) and Oxfordshire. As a result of the extensive nature of the resource it is considered to be sub-regionally significant.

70. Consequently, to provide a strategic view of available sand & gravel resources, information from the three neighbouring areas within the Upper Thames Valley has been considered in this report. However, due to different data collection methods, specific information on the Upper Thames Valley resource area is limited to Gloucestershire and Wiltshire (including Swindon) only. Data for Oxfordshire has been provided separately.

Sand & Gravel Supplies from the Upper Thames Valley resource area

71. In 2005, the Upper Thames Valley resource area covering Gloucestershire and Wiltshire (including Swindon) supplied 1.74 million tonnes of sand & gravel. Over half of this supply (56%) was sourced from Gloucestershire. The remainder originated from Wiltshire and Swindon (See fig 4).
72. The average annual supply from the Upper Thames Valley covering Gloucestershire and Wiltshire (including Swindon) between 2003 and 2005 was 1.78 million tonnes per annum. During this period, the average breakdown of supply by administrative area was 0.81 million tonnes per annum from Gloucestershire and 0.97 million tonnes per annum from Wiltshire. However, this supply trend appears to be shifting away from Wiltshire towards Gloucestershire (See fig 5).

73. It is important to note that the sand & gravel resources of the Wiltshire and Swindon section of the Upper Thames Valley make up a significant part of the two authorities’ total resource. However, for commercial confidentiality reasons, exact supply and reserves from outside of the Upper Thames Valley cannot be provided. Nevertheless, evidence provided from Wiltshire County Council indicate a similar 70:30 locational split to that observed in Gloucestershire, between supplies and reserves of the Upper Thames Valley and elsewhere across Wiltshire and Swindon.

### Sand & Gravel Reserves within the Upper Thames Valley resource area

74. As at 31/12/2005 the Upper Thames resource area covering Gloucestershire and Wiltshire (including Swindon) included sand & gravel reserves of 12.76 million tonnes.

75. Due to reasons of commercial confidentiality a more detailed breakdown of reserves between the two administrative areas has not been included in this report.

### Sand & Gravel within Oxfordshire

76. Oxfordshire supplies both “soft” sand and “sharp” sand & gravel. The county’s resources are primarily located along the Windrush River valley near to Witney and...
the Upper Thames River valley near to Faringdon and Abingdon. A much smaller sand & gravel resource can also be found north of Bicester in the Chilterns.

77. During 2005, Oxfordshire supplied 1.3 million tonnes of sand & gravel. The majority of this supply (60%) originated along the Windrush River valley and slightly north of this area at Eynsham, Cassington and Yarnton. The remaining supply was focused in a band of deposits found around Faringdon and Abingdon. These deposits mark the southern most boundary of the Upper Thames Valley resource area.

78. Although most of the county’s supply lies outside of the Oxfordshire areas of the Upper Thames, it is still worth noting the resource relationship between the extraction sites near to Faringdon and those across the county boundary within Gloucestershire and Wiltshire. Due to relatively short road links along the A417 and well-established commercial interests over both areas, sand & gravel is often transported across the administrative boundary. However, it is recognised that the key influence on supplies from this part of the resource area include the nearby market towns of Abingdon and Faringdon, the principal urban area of Oxford city and the remainder of the South-East region and the London conurbation.

Other important Sand & Gravel resources beyond Gloucestershire

79. In addition to the Upper Thames Valley resource area, there is evidence that other resource areas beyond Gloucestershire make valuable contribution to the county’s supply of sand & gravel.

80. As highlighted earlier in this section (see diagram 1), there are comparable sand & gravel resources within the adjoining counties of Herefordshire, Worcestershire and Warwickshire. However, the demand for these resources is primarily focused on the West Midlands and the Birmingham Conurbation.

81. Nevertheless, a small proportion of material is likely to be supplied by road into the northern Gloucestershire area and it is also barged into the county along the River Severn and the Gloucester & Sharpness Canal to Gloucester. The barging of sand & gravel commenced in March 2006 and is proposed to supply 65,000 tonnes of sand & gravel a year. The majority of material is sourced from Ryall Quarry in Worcestershire and is transported to a stand-alone ready-mixed concrete plant, which sits on the banks of the Gloucester & Sharpness Canal, two miles south of Gloucester. It is estimated that this movement of sand & gravel by barge will be equivalent to 116 round-trip lorry journeys being removed from the road each year.17

17 Lorry journey calculations are based on a 25-tonne lorry and barge capacity of 1440 tonnes per day. This information was provided by “Sea & Water”, which is a government funded organisation for the promotion of water freight transport.
Section 4
Making Provision for Sand & Gravel in Gloucestershire

82. The national policy framework for providing a steady and consistent supply of sand & gravel is set out in national and regional guidelines for aggregate provision (see section 2). These guidelines seek to address imbalances in the availability, supply and demand for aggregates that occur across the country.

83. The guidelines operate through a series of contributions or apportionments that are delivered firstly, through the regions. These regional guidelines are then broken down for consideration at the local level through local mineral planning authorities and sub-regional areas.

84. This section of the report aims to explore the processes and mechanisms for working out the local sand & gravel requirements for Gloucestershire and the MCS. It introduces the local contribution or apportionment that is required to maintain provision in accordance national and regional guidelines and the method behind maintaining an appropriate landbank of permitted reserves. It also seeks to identify how much provision should be made from within the key resource areas of Gloucestershire over the projected time horizons for the MCS.

National & Regional Guidelines

85. As previously advised in Section 3, the MCS must consider the National & Regional Guidelines for Aggregate Provision in England (2001 – 2016). In doing so, the MCS is required to make a local contribution or local apportionment of the regional guidelines set out for the South West. The local apportionment for Gloucestershire has been identified within the submission draft RSS and amounts to **18.18 million tonnes** of sand & gravel. The local apportionment for Gloucestershire represents 17% of the total regional guidelines for sand & gravel in the South West (See fig 5).

86. To make sure that the local apportionment for Gloucestershire will be supplied in a steady and consistent manner over the guideline period (2001-2016 inclusive), an annual provision rate has been calculated. For Gloucestershire, the annual provision rate (also known as the 'annual expression of the sub-regional apportionment') works out at **1.14 million tonnes per annum** of sand & gravel.
Maintaining an Appropriate Landbank

87. In addition to the national & regional guidelines, the MCS must consider making provision to maintain an appropriate landbank of permitted reserves throughout the plan period. As already discussed in section 2, the requirement for an appropriate sand & gravel landbank is at least 7 years.

88. The formula to work out how much provision is needed to maintain an appropriate landbank is provided below. It is based upon ensuring that the annual provision rate of the local apportionment is sustained over a given number of years.

The Landbank Provision formula:

\[
\text{Landbank Provision} = \text{annual provision rate of the local apportionment} \times \text{length of the landbank needed in years}
\]

89. For Gloucestershire, the consequence of maintaining an appropriate landbank for sand & gravel, which is 7 years, is equal to 7.98 million tonnes (see table 1 below).

Table 1: Calculation of the Sand & Gravel landbank provision for Gloucestershire over the plan period

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
<th>Landbank Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Provision Rate of the local apportionment</td>
<td>Number of years of an appropriate landbank for sand &amp; gravel</td>
<td>(A x B)</td>
</tr>
<tr>
<td>1.14 mtpa</td>
<td>7 years</td>
<td>7.98 mt</td>
</tr>
</tbody>
</table>

Longer-term provision to meet the RSS time horizon of 2026

90. The MCS has a responsibility to consider the time horizon proposed by the South West Regional Spatial Strategy. This is based upon a 20 year policy framework from 2006 to 2026. However, the regional guidelines are only set out for the period to 2016. Furthermore, where a 7 year landbank is maintained at 2016, this will only project provision requirements through to the end of 2023. Consequently, this study will look to identify the potential longer-term sand & gravel provision requirements for the three-year period from 2023 to the end of 2026. This approach is supported by DCLG\(^{18}\). The appropriate

\(^{18}\) Paragraph 18 of the DCLG National & Regional Guidelines for Aggregate Provision (2001-2016) 3rd Monitoring Report (August 2006) sets out the future steps for aggregate provision beyond
measure of provision for the longer-term period is a roll forward of the annual expression of the regional guidelines to 2016. The consideration of longer-term provision is equal to an additional 3.42 million tonnes of sand & gravel for Gloucestershire.

**Sand & Gravel Provision for the MCS**

91. The maximum amount of sand & gravel provision for consideration by the MCS is based on:

- Meeting the full local apportionment of the regional guidelines;
- Maintaining a 7 year landbank throughout the guideline period; and
- Making sufficient annual provision to meet the RSS time horizon at 2026.

92. This provision requirement totals 29.58 million tonnes *(See table 2 and fig 6).*

**Table 2: Calculation of the maximum sand & gravel provision for consideration by the MCS**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Max. Sand &amp; Gravel Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local apportionment</td>
<td></td>
<td>Provision to meet the RSS timeframe</td>
<td>A + B + C</td>
</tr>
<tr>
<td>of the regional guidelines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.18 mt</td>
<td>7.98 mt</td>
<td>3.42 mt</td>
<td>29.58 mt</td>
</tr>
</tbody>
</table>

the 16-year period to 2016. It advises that the annual guideline figure should be projected forward to the end of the relevant period of the RSS.

**Figure 6: Maximum sand & gravel provision for consideration by the MCS.**

93. However, through the preparation of the MCS, careful consideration will need to be given to the appropriateness of meeting the maximum provision requirement. Particular attention should be paid to the additional annual provision to meet the RSS time horizon at 2026. As already debated within the “Issues & Options” paper there are a number of timescale options available to the MCS, which will have a significant effect on the amount of provision that should be made. This issue is central to the future strategy for sand & gravel and represents one of the provision options developed by this report *(see Section 5).*

94. Consequently, an additional provision calculation has been provided. This requirement is to meet the local apportionment to 2016 and maintain a 7 year landbank through the guideline period *(See table 3).*
Table 3: Calculation of the alternative sand & gravel provision for consideration by the MCS

<table>
<thead>
<tr>
<th>A</th>
<th>Local apportionment of the regional guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>7-year landbank at 2016</td>
</tr>
<tr>
<td></td>
<td>Sand &amp; Gravel Provision (A + B)</td>
</tr>
<tr>
<td>18.18 mt</td>
<td>7.98 mt</td>
</tr>
</tbody>
</table>

Years of Provision met by Supply

95. The national & regional guidelines for crushed rock have been set between 2001 and 2016. However, the first five years of this period (2001 – 2005 inclusive) have now past. During this time actual sand & gravel supplies from Gloucestershire has proved sufficient to meet demand and make a successful contribution to the local apportionment of regional guidelines. Consequently, the base date for provision in the MCS is 1st January 2006 as survey data on supply and reserves is only available up to the end of 2005. Similar to the approach taken by the adopted MLP, the MCS does not make retrospective provision for the first five years of the guidelines and should concentrate on the remaining 11 years of the guidelines (2006 to 2016 inclusive). As a result the provision requirement of the local apportionment is reduced to 12.54 million tonnes (see table 4).

Table 4: Calculation of the remaining local apportionment (2006 - 2016)

<table>
<thead>
<tr>
<th>A</th>
<th>Annual Provision Rate of the local apportionment (2006 - 2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Remaining years of the local apportionment (2006 - 2016)</td>
</tr>
<tr>
<td>Provision Req.</td>
<td>(A x B)</td>
</tr>
<tr>
<td>1.14 mtpa</td>
<td>11 years</td>
</tr>
</tbody>
</table>

96. The inclusion of an appropriate 7 year landbank at 2016 increases the provision requirement to 20.52 million tonnes of sand & gravel. However, where additional provision is required to meet the RSS timeframe, this figure becomes 23.94 million tonnes (see table 5).

Table 5: Calculation of the revised sand & gravel provision options for consideration by the MCS

<table>
<thead>
<tr>
<th>Provision Option</th>
<th>A: Remaining local apportionment (2006 - 2016)</th>
<th>B: 7-year landbank at 2016</th>
<th>C: Provision to meet the RSS timeframe</th>
<th>Revised Req.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative Provision total (Table 3)</td>
<td>12.54 mt</td>
<td>7.98 mt</td>
<td>Not Included</td>
<td><strong>20.52 mt</strong></td>
</tr>
<tr>
<td>Maximum Provision (Table 2)</td>
<td>12.54 mt</td>
<td>7.98 mt</td>
<td>3.42 mt</td>
<td><strong>23.94 mt</strong></td>
</tr>
</tbody>
</table>
The Contribution of Existing Permitted Reserves

As at 31/12/2005, sand & gravel reserves in Gloucestershire totalled 7.85 million tonnes. The vast majority of these reserves (88%) are located within the Upper Thames Valley resource area (see fig 4) and Appendix A. While the presence of permitted sand & gravel reserves will make a significant contribution towards meeting the provision requirements, it is clear from the data for 2005 that these will be insufficient to meet the requirements in full. Consequently, a potential shortfall in provision will exist once all permitted reserves have been worked. This potential shortfall is equal to 16.09 million tonnes of sand & gravel based on the maximum amount of provision for consideration by the MCS (See table 6 and fig 9).

Table 6: Calculation of the maximum sand & gravel provision taking into account existing permitted reserves as at 31/12/2005

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Revised Req.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximum remaining sand &amp; gravel provision requirement (Table 5)</strong></td>
<td><strong>Contribution of existing permitted reserves as at 31/12/2005</strong></td>
<td><strong>(A - B)</strong></td>
</tr>
<tr>
<td>23.94 mt</td>
<td>7.85 mt</td>
<td>16.09 mt</td>
</tr>
</tbody>
</table>

As previously highlighted, there is an alternative provision option that does not include the requirement to meet the RSS timeframe. Applying this option to the contribution of existing permitted reserves would result in a further reduction in the provision requirement to 12.67 million tonnes (e.g. 16.09 mt - 3.42 mt = 12.67 mt).

Potential Contribution of Undeveloped Preferred Areas

The adopted Minerals Local Plan (MLP) identified a shortfall in provision when seeking to meet the local apportionment of the previous regional & national guidelines.
(1992 – 2006) and maintain a 7 year landbank through the guideline period\textsuperscript{19}.

\textbf{100.} To reconcile the shortfall in provision, the MLP identified a number of site allocations for future mineral extraction defined as ‘Preferred Areas’. These allocations represented extensions to existing mineral workings and were identified within the Upper Thames Valley area. Each allocation was subject to rigorous examination at various consultation stages and the public inquiry into the MLP\textsuperscript{20}.

\textbf{101.} Under transitional arrangements\textsuperscript{21}, all of the preferred areas within the MLP remain part of the development plan for Gloucestershire until it is deemed necessary to replace them with new development plan documents. For the purposes of this study all remaining, undeveloped preferred areas have been considered as part of the provision calculations.

\textbf{102.} As at 31/12/2005, the potential sand & gravel yield within the undeveloped preferred areas of the MLP equalled 10.75 million tonnes (see appendix D). Assuming that all of the preferred areas are worked to their potential the maximum shortfall in provision may be reduced to 5.34 million tonnes. (See table 7 and fig 10).

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
\textbf{A} & \textbf{B} & \textbf{C} \\
\hline
\textbf{Maximum remaining sand & gravel provision requirement} (Table 6) & \textbf{Potential Contribution of undeveloped preferred areas as at 31/12/2005} & \textbf{Revised Req.} (A - B) \\
\hline
16.09 mt & 10.75 mt & 5.34 mt \\
\hline
\end{tabular}
\caption{Calculation of the maximum sand & gravel provision taking into account the potential contribution of undeveloped preferred areas as at 31/12/2005}
\end{table}

\textsuperscript{19} Table 2 (page 35) of the adopted MLP identified a shortfall in provision equal to 9.1 million tonnes of sand & gravel as of 31/12/1996.

\textsuperscript{20} The MLP underwent four formal consultation stages (i.e. consultation draft, 1\textsuperscript{st} draft and revised draft and proposed modifications) and a 23-day public inquiry held between September and November 2000.

\textsuperscript{21} Transitional Arrangements are found within the T&C Planning (Transitional Arrangements) (England) Regulations 2004 and are the regulatory arrangements put in place to manage the change from Development Plans to Development Frameworks. They set out how development plan policies should be saved for a period of at least three years from the enactment of the Planning Act (2004) or plan adoption, whichever is sooner. A longer ‘saving’ period may be deemed appropriate until formally replaced, where agreed by the Secretary of State.
Summary of Provision Requirements for the MCS

103. The MCS will need to carefully consider how it is going to make sufficient provision to meet the local apportionment for sand & gravel of the regional guidelines between 2001 and 2016. It will also need to review how it will maintain a 7 year landbank of permitted reserves throughout the plan period and make provision where appropriate, over the longer-term time horizon through to 2026.

104. Based on the methodology detailed in this section and all other potential influences, the MCS will need to consider devising a spatial strategy that is capable of delivering a shortfall in sand & gravel provision of up to 16.09 million tonnes as at the base date 31/12/2005.

105. For the purposes of the MCS, the undeveloped preferred areas from the adopted MLP represent a partial solution to delivering the identified shortfall in provision. However, even if all of the undeveloped preferred areas are to be realised, an unresolved shortfall in provision of 5.34 million tonnes, will remain in the later part of the MCS period.

106. Consequently, a key challenge for the MCS will be to deliver the unresolved shortfall in provision. The MCS must adopt a spatial approach that will enable the identification of future working areas. However, rather than presenting specific sites, the MCS must focus on strategic locations. The next section of this report seeks to introduce a range of draft provision and location options that, in combination, will provide the spatial approach or strategy for the MCS. These will also provide the context for any detailed DPD’s, which may be required following the adoption of the MCS (such as a Minerals Site Allocation DPD).

* - When including the potential contribution made by undeveloped preferred areas as at 31/12/2005, there is no shortfall in provision to meet the remaining local apportionment. Consequently this element of the provision calculation is not included on the diagram.

22 Potential influences in this context include: national, regional and local planning policies and resource constraints that determine whether sand & gravel can realistically be worked in the near future.
Other Spatial Considerations Concerning Provision Requirements for the MCS

107. As highlighted earlier in section 3, there is a strong relationship between Gloucestershire, Wiltshire and Swindon in terms of cross-boundary sand & gravel resources along the Upper Thames Valley. The resource area is strategically important to each of the authorities and will undoubtedly have a major role to play in meeting the respective provision requirements.

108. Consequently, due consideration should be given to the local provision requirements set out for Wiltshire and Swindon, and the possible implications for Gloucestershire of these being delivered or not over the guideline period.

109. Although this report has identified the future provision requirements for Gloucestershire, the same information is currently not available for Wiltshire and Swindon. Nevertheless, evidence from the regional aggregate study (as highlighted on page 6), the submission version RSS and relevant minerals core strategy documents, would suggest that Wiltshire and Swindon face a similar challenge to Gloucestershire in meeting the provision requirements over the guideline period.

110. This challenge is recognised at the regional level and was a key issue debated within the regional aggregate study (see page 6). It is also highlighted in the emerging RSS, wherein collaborative working between the relevant MPAs (namely Gloucestershire, Wiltshire and Dorset) is encouraged to meet potential shortfalls in provision for sand & gravel (see Appendix C).

111. Consequently, the following section of this report introduces an additional provision option, which seeks to go beyond the requirements for Gloucestershire. This option looks at the potential for collaborative working between Gloucestershire, Wiltshire and Swindon, and the opportunity for a more holistic and joined up approach to future sand & gravel working across the Upper Thames Valley resource area.


Section 5  
Sand & Gravel Options for Gloucestershire

25. This section of the report aims to introduce a series of options to stimulate early public debate. These options are founded on the assessment work carried out in section 4, for identifying future provision requirements for Gloucestershire. They have also been carefully assessed against national, regional and local policy influences (section 2) and key local characteristics (section 3) to ensure they are both realistic and deliverable through the MCS.

26. Although minerals can only be worked where it is found. There are still genuine options as to how much mineral resource should be made available for working over time and where within the wider extent of the mineral resource, future working should be focused.

27. Nevertheless, beyond the physical constraints of the geological distribution of resources (See Section 2 and Diagram 1), there are clear restrictive parameters that need to be factored in. These include -- sterilisation by surface development, availability of sufficient infrastructure; accessibility to markets; and other engineering complexities (e.g. slope instability, flooding etc).

28. It is also vitally important that the community is fully involved and integrated into the development of policy options for the MCS. Without effective community engagement and consensus building, it is unlikely that any option will be successfully delivered. Consequently, stakeholders are encouraged to let us know their thoughts and ideas on the draft options that have been developed. Furthermore, to reflect the comments already received during the “issues and options” consultation and mineral forums in July 2006, these have been incorporated into the preparation process.

29. Much of the background evidence is now available to assess the merits or demerits of provision and supply options for the MCS. As a result “favoured” or “preferred” options have been headlined by this report. These will be further assessed through the preferred options stage for MCS, wherein a further Sustainability Appraisal and Appropriate Assessment will be completed.

30. It is also during the preferred options that stakeholders will have an opportunity to make formal representations on their “favoured” options for the MCS.
Draft Options Explained

112. For ease of consideration the options have been divided into two topic headings; Provision and Locations. These headings represent the key challenges facing the MCS in formulating a spatial approach to sand & gravel working in Gloucestershire.

113. The heading entitled “provision” introduces options on how much sand & gravel should be made available over the plan period, while the heading called “locations” investigates where sand & gravel working should be focused in the future.

114. In order to provide a deliverable spatial strategy for sand & gravel, a combination of the options from each of the topic headings will need to be considered.

115. To help with the consideration of the options a number of diagrams have also been prepared. These diagrams look to illustrate the possible spatial implications for Gloucestershire of following different combinations of provision and location options.

Provision Options

Introduction

116. Deciding upon how much sand & gravel will need to be made available for the future is fundamental to the spatial strategy of the MCS. Section 3 and 4 of this report highlights the broad policy parameters within which future provision options should be developed. Section 4 also provides a technical assessment of the different mechanisms for determining future provision requirements. Based on this evidence, a series of draft provision options have been developed:

PROVISION OPTION 1:

Provision option 1 seeks to ensure that sufficient provision is made to meet the remaining local apportionment for Gloucestershire. As of the base date: 31/12/2005, this provision requirement is equal to 12.54 million tonnes of sand & gravel.

Option 1 also looks to make sufficient provision to maintain a 7-year landbank of permitted reserves throughout the plan period. This provision requirement is equal to a further 7.98 million tonnes of sand & gravel.

As of the base date: 01/01/2006, option 1 sets out a total provision requirement of 20.52 million tonnes of sand & gravel.

Including all permitted reserves as at 31/12/2005 and estimated yields from the undeveloped preferred areas of the MLP, option 1 identifies a shortfall in provision equal to 1.92 million tonnes of sand & gravel. This
shortfall will need to be delivered through the MCS.

**PROVISION OPTION 2:**

Provision option 2 adopts the same method as option 1. It seeks to ensure sufficient provision is made to meet the remaining local apportionment for Gloucestershire and maintain a 7-year landbank of permitted reserves throughout the plan period.

However, option 2 also seeks to apply an additional provision requirement to cover the time horizon of the Regional Spatial Strategy (RSS). This requirement is equal to a further 3.42 million tonnes of sand & gravel. It is based on a three-year expression of the local apportionment and covers the period from the end of the 7-year landbank requirement at 2023, to the end date of the RSS at 2026.

As of the base date: 01/01/2006, Option 2 would result in a total provision requirement of 23.94 million tonnes over the plan period.

Including all permitted reserves at as 31/12/2005 and estimated yields from the undeveloped preferred areas, option 2 identifies a shortfall provision equal to 5.34 million tonnes of sand & gravel. This shortfall will need to be delivered through the MCS.

**PROVISION OPTION 3:**

Provision option 3 looks to adopt a more strategic / sub-regional approach to future sand & gravel provision. Its aim is to help resolve projected shortfalls in sand & gravel provision across the South West region over the guideline period (see section 2, page 6).

The immediate focus of option 3 is the same as options 1 and 2 in that it seeks to ensure sufficient provision is made to meet the remaining local apportionment for Gloucestershire and maintain a 7-year landbank of permitted reserves throughout the plan period.

However, it also proposes a policy commitment to ensure sufficient provision is made to deliver an appropriate, steady and consistent annual supply of sand & gravel and maintain a 7 year landbank of permitted reserves from across the Upper Thames Valley.
This option looks to recognise the important resource relationship that exists between Gloucestershire and the neighbouring area of Wiltshire (including Swindon). These three mineral planning authorities share strategic, cross-boundary sand & gravel resources that lie within the Upper Thames Valley.

The principal aim of option 3 is to encourage a joined-up approach to future mineral supplies from across the entire resource area. This would in turn support a more holistic and spatial planning strategy for mineral developments and post-extraction activities across the area.

Option 3 requires a review of the remaining resource potential and the operational capacities and constraints across the whole resource area. It will also require an appropriate annual supply and provision requirement to maintain a 7 year landbank across the Upper Thames Valley resource area. Furthermore, to achieve this option processes will need to be put in place to ensure specific resources are worked in a holistic way. This may include joined-up working arrangements, consistency of decision-making and/or change of governance over the area.

Although the RSS offers support to this option, it does not provide a clear policy mechanism for delivery. The responsibility has been passed to the local MPAs to find a solution.

At present informal co-operation takes place between the officers of the respective MPAs. This approach can attempt to provide some solutions and recommendations for decision-makers if option 3 is taken forward as a preferred option for the MCS.

Locational Options

Introduction

117. Sand & gravel can only be worked where it is found. Consequently, locational options for the future working are limited to the resource areas present within Gloucestershire. These areas are identified in section 3 of this report.

118. However, the realistic prospect of certain sand & gravel resources being worked over the plan period must not be ignored.
Without prejudice to the future provision requirements, all location options must be technically viable in the near future. As explained previously in this section, those resources that are sterilised by surface development, without any mineral infrastructure, are inaccessibly to local markets and/or pose insurmountable engineering problems should be discounted from the study.

119. Consequently, based on the resource evidence presented in section 3, alternative location options have been developed.

120. It is important to note that these options represent broad, strategic level locations, within which further site assessments should be focused. The purpose of locational options within the MCS is to provide a policy framework for future site survey work within a mineral allocations development plan document.

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**LOCATION OPTION 1:**

Location Option 1 looks to adopt a more dispersed strategy for future sand & gravel working. It proposes that future working should be focused on the Upper Thames Valley resource area but also takes account of making provision, where required, in other areas, principally the Severn Vale Corridor. New site allocations will need to look at the relative merits of the two resource areas for making a realistic and viable contribution towards future provision requirements for sand & gravel.

**LOCATION OPTION 2:**

Location Option 2 proposes a preference towards future sand & gravel working within the Upper Thames Valley resource area. Where new site allocations are required, these will be focused within the Gloucestershire section of this resource area*.

* The MCS is only responsible for the administrative area of Gloucestershire. Therefore it cannot look to allocate outside of the Gloucestershire section of the UTV resource area. However, it is recognised there are spatial implications of following this location option when combined with the different provision options. For example, adopting a "more holistic provision approach" to the Upper Thames Valley resource area (see provision option 3) could result in allocations having to take into account the existing working patterns within Wiltshire and Swindon, the potential for phased working across the county boundary, and the co-location of processing and manufacturing plants. However, these issues are likely to be less important if a more "Gloucestershire-only" approach is taken (see provision options 1 & 2).
Sand & Gravel Draft Spatial Option
Diagrams

121. The following diagrams set out the possible combinations of draft provision and locational options as detailed on the previous pages. These diagrams seek to highlight the potential spatial implications of pursuing each different combination of options. They include a current reserve assessment of the key resource areas, the annual provision requirement and a potential shortfall in provision that will need to be considered.

**DIAGRAM A: The combination of Provision Option 1 & Location Option 1**

Diagram A applies **provision option 1**: sufficient provision to meet the regional guidelines and maintain a 7-year landbank throughout the plan period and **location option 1**: the identification of future areas for working from within the Severn Vale Corridor and the Upper Thames Valley resource areas.
Diagram B applies provision option 1: sufficient provision to meet the regional guidelines and maintain a 7-year landbank throughout the plan period and location option 2: the identification of future areas for working from within the Upper Thames Valley resource area.
Diagram C applies **provision option 2**: sufficient provision to meet the regional guidelines, maintain a 7-year landbank throughout the plan period and make additional provision to 2026 and **location option 1**: the identification of future areas for working from within the Severn Vale Corridor and the Upper Thames Valley resource areas.
**Diagram D:** The combination of Provision Option 2 & Location Option 2

Diagram D applies **provision option 2:** sufficient provision to meet the regional guidelines, maintain a 7-year landbank throughout the plan period and make additional provision to 2026 and **location option 2:** the identification of future areas for working from within the Upper Thames Valley resource area.
This figure is based on the reserves data from Wiltshire County Council as at 31/12/2005, the provisional requirements to meet the remaining regional guidelines as at 01/01/2006, and the estimated reserves contained within the remaining preferred areas of the Wiltshire Local Plan. It does not include a specific provision requirement for the Wiltshire section of the Upper Thames Valley. Furthermore, this figure has not been formally published by Wiltshire and represents only a forecast prepared by Gloucestershire County Council. It should not be used as the provision requirement for Wiltshire and may be subject to change by Wiltshire during their provision calculations for the Wiltshire & Swindon Minerals Core Strategy.

**Diagram E:** The combination of Provision Option 3 & Location Option 1

Diagram E applies **provision option 3**; sufficient provision to meet the regional guidelines, maintain a 7-year landbank throughout the plan period and consideration of the provision requirements of the neighbouring Upper Thames Valley resource area of Wiltshire. It also introduces **location option 1**: the identification of future areas for working from within the Severn Vale Corridor and the Upper Thames Valley resource areas.

* This figure is based on the reserves data from Wiltshire County Council as at 31/12/2005, the provisional requirements to meet the remaining regional guidelines as at 01/01/2006, and the estimated reserves contained within the remaining preferred areas of the Wiltshire Local Plan. It does not include a specific provision requirement for the Wiltshire section of the Upper Thames Valley. Furthermore, this figure has not been formally published by Wiltshire and represents only a forecast prepared by Gloucestershire County Council. It should not be used as the provision requirement for Wiltshire and may be subject to change by Wiltshire during their provision calculations for the Wiltshire & Swindon Minerals Core Strategy.
**DIAGRAM F: The combination of Provision Option 3 & Location Option 2**

Diagram F applies **provision option 3**: sufficient provision to meet the regional guidelines, maintain a 7-year landbank throughout the plan period and consideration of the provision requirements of the neighbouring Upper Thames Valley resource area of Wiltshire. It also introduces **location option 2**: the identification of future areas for working from within the Upper Thames Valley resource area.

* This figure is based on the reserves data from Wiltshire County Council as at 31/12/2005, the provisional requirements to meet the remaining regional guidelines as at 01/01/2006, and the estimated reserves contained within the remaining preferred areas of the Wiltshire Local Plan. It does not include a specific provision requirement for the Wiltshire section of the Upper Thames Valley. Furthermore, this figure has not been formally published by Wiltshire and represents only a forecast prepared by Gloucestershire County Council. It should not be used as the provision requirement for Wiltshire and may be subject to change by Wiltshire during their provision calculations for the Wiltshire & Swindon Minerals Core Strategy.
**AGGREGATES** - Sand, gravel, crushed rock and other bulk materials used by the construction industry

**ANNUAL EXPRESSION OF THE LOCAL APPORTIONMENT** - The annualised breakdown of the local split of the regional supply guidelines for minerals demand (see local apportionment)

**COMMUNITIES AND LOCAL GOVERNMENT (DCLG)** - The Government department responsible for spatial planning and other local government matters

**CORE STRATEGY** - Sets the long-term spatial vision and strategy for the local planning authority area and provides the strategic locations for future development opportunities

**DEVELOPMENT PLAN** - Sets out the policies and proposals for development and the use of land within the local planning authority area

**DEVELOPMENT FRAMEWORK** - A non-statutory term for describing the folder of documents, which includes all the local planning authority's local planning documents

**FLUVIAL / FLUVIAL GLACIAL DEPOSITS** - Material laid down within a river environment, or as a result of a river environment created by glacial melt water

**LANDBANK** - The stock land with planning permissions but where development has yet to take place. The landbank can be of land for minerals, housing or any other use

**LOCAL APPORTIONMENT** - The local splitting of regional supply guidelines for aggregate minerals between planning authorities or sub-regions

**MINERAL PLANNING STATEMENTS (MPS)** - Guidance documents, which set out national policy for minerals

**PREFERED AREA** - Areas identified in the development plan with a high degree of certainty for potential development / extraction (in the case of minerals)

**PROVISON REQUIREMENT** - The amount of mineral (in million tonnes) that will need to be identified during the plan-making period

**REGIONAL AGGREGATE WORKING PARTY** - A working group consisting of local authority officers, representatives of the aggregates industry and central government established to consider the supply and demand for aggregate minerals.

**REGIONAL GUIDELINES** - The regional breakdown of national supply for aggregate minerals. The current national guidelines are from 2001 to 2016

**RESERVES** - Known mineral deposits with the benefit of planning permission for extraction

**RESOURCES** - A potential mineral deposit where the quality and quantity of material has not been fully tested. Resources do not benefit from planning permission

**SAND & GRAVEL** - A finely divided rock, comprising of particles or granules that range in size from 0.063 to 2mm for sand, and up to 64mm for gravel. It is used as an important aggregate mineral

**SHARP SANDS** - Coarser sands used in the construction industry for products such as concrete

**SHORTFALL IN PROVISON** - The amount of mineral that needs to be identified, once the entire mineral in existing working sites and potential mineral within preferred areas, has been accounted for.

**SOFT SANDS** - Finer sands used in the production of mortar and asphalt

**SOUTH WEST REGIONAL SPATIAL STRATEGY (RSS)** - The 20-year spatial strategy for the South West region

**SPATIAL PLANNING** - Spatial planning goes beyond traditional land use planning to bring together and integrate policies for the development and use of land with other policies and programmes which influence the nature of places and how they function
Appendix A
Gloucestershire
Aggregate information

Sand & Gravel - Supply data 2001 - 2005

<table>
<thead>
<tr>
<th>Supply Year</th>
<th>For the Upper Thames Valley Resource Area</th>
<th>For the remainder of the County</th>
<th>Total Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>0.84</td>
<td>0.04</td>
<td>0.88</td>
</tr>
<tr>
<td>2002</td>
<td>0.91</td>
<td>0.03</td>
<td>0.94</td>
</tr>
<tr>
<td>2003</td>
<td>0.66</td>
<td>0.04</td>
<td>0.70</td>
</tr>
<tr>
<td>2004</td>
<td>0.79</td>
<td>0.05</td>
<td>0.84</td>
</tr>
<tr>
<td>2005</td>
<td>0.97</td>
<td>0.06</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Ave. Supply (2001-2005) | 0.83 | 0.05 | 0.88

Data provided in million tonnes (mt) unless otherwise stated

Sand & Gravel - Reserves Data 2001 - 2005

<table>
<thead>
<tr>
<th>Recorded Reserve Date</th>
<th>For the Upper Thames Valley Resource Area</th>
<th>For the remainder of the County</th>
<th>Total Reserves</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/2001</td>
<td>10.19</td>
<td>1.58</td>
<td>11.77</td>
</tr>
<tr>
<td>31/12/2002</td>
<td>9.18</td>
<td>1.28</td>
<td>10.46</td>
</tr>
<tr>
<td>31/12/2003</td>
<td>8.37</td>
<td>1.04</td>
<td>9.41</td>
</tr>
<tr>
<td>31/12/2004</td>
<td>7.53</td>
<td>0.97</td>
<td>8.50</td>
</tr>
<tr>
<td>31/12/2005</td>
<td>6.95</td>
<td>0.90</td>
<td>7.85</td>
</tr>
</tbody>
</table>

Data provided in million tonnes (mt) unless otherwise stated
### Sand & Gravel - Markets Data 2005

<table>
<thead>
<tr>
<th>Regional Destination</th>
<th>Tonnage Supplied</th>
<th>As a % of Total Supply for 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloucestershire</td>
<td>0.20</td>
<td>19%</td>
</tr>
<tr>
<td>Elsewhere in the South West</td>
<td>0.74</td>
<td>72%</td>
</tr>
<tr>
<td>West Midlands</td>
<td>0.05</td>
<td>5%</td>
</tr>
<tr>
<td>South East (Including London)</td>
<td>0.02</td>
<td>2%</td>
</tr>
</tbody>
</table>

*NB: Small tonnages (equal to 2%) were also supplied to Wales, East Midlands and the East of England*

*Data provided in million tonnes (mt) unless otherwise stated*
Appendix B
National & Regional Guidelines for Aggregate Provision (2001-2016)

<table>
<thead>
<tr>
<th>Region</th>
<th>(Land-won) Sand &amp; Gravel</th>
<th>Crushed Rock</th>
<th>(Marine) Sand &amp; Gravel</th>
<th>Alternatives*</th>
</tr>
</thead>
<tbody>
<tr>
<td>South East</td>
<td>212</td>
<td>35</td>
<td>120</td>
<td>118</td>
</tr>
<tr>
<td>London</td>
<td>19</td>
<td>0</td>
<td>53</td>
<td>82</td>
</tr>
<tr>
<td>East of England</td>
<td>256</td>
<td>8</td>
<td>32</td>
<td>110</td>
</tr>
<tr>
<td>East Midlands</td>
<td>165</td>
<td>523</td>
<td>0</td>
<td>95</td>
</tr>
<tr>
<td>West Midlands</td>
<td>162</td>
<td>93</td>
<td>0</td>
<td>88</td>
</tr>
<tr>
<td>South West</td>
<td>106</td>
<td>453</td>
<td>9</td>
<td>121</td>
</tr>
<tr>
<td>North West</td>
<td>55</td>
<td>167</td>
<td>4</td>
<td>101</td>
</tr>
<tr>
<td>Yorkshire &amp; Humber</td>
<td>73</td>
<td>220</td>
<td>3</td>
<td>128</td>
</tr>
<tr>
<td>North East</td>
<td>20</td>
<td>119</td>
<td>9</td>
<td>76</td>
</tr>
</tbody>
</table>

Data provided in million tonnes (mt) unless otherwise stated

* - These totals represent assumed targets for contributing to the overall aggregate provision rather than specific guidelines

Local Apportionment for Sand & Gravel for the South West Region - to meet the National & Regional Guidelines for Aggregate Provision in England 2001 to 2016 inclusive

<table>
<thead>
<tr>
<th>Local Area / Sub-Region</th>
<th>Sand &amp; Gravel</th>
<th>As a percentage of the Regional guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cornwall, Devon &amp; Somerset</td>
<td>21.80</td>
<td>21%</td>
</tr>
<tr>
<td>Dorset</td>
<td>36.35</td>
<td>34%</td>
</tr>
<tr>
<td>Gloucestershire</td>
<td>18.18</td>
<td>17%</td>
</tr>
<tr>
<td>Wiltshire</td>
<td>29.66</td>
<td>28%</td>
</tr>
</tbody>
</table>

Data provided in million tonnes (mt) unless otherwise stated
Appendix C
Draft Regional Spatial Strategy for the South West – Aggregate Policies

Policy RE10 Supply of Aggregates And Other Minerals

Minerals Planning Authorities should seek to make provision for the supply of aggregates and other minerals to meet the South West’s contribution to national requirements. Minerals Planning Authorities and Local Planning Authorities will identify and collaborate in safeguarding mineral resources of economic importance for sterilisation by other forms of development. In order to promote the delivery and bulk transport of minerals by rail and/or water, existing railheads, wharfs and other handling facilities, will be safeguarded and opportunities for new ones should be identified, where appropriate.

Policy RE11 Maintaining a Landbank of Aggregates

Minerals Planning Authorities should endeavour to maintain a landbank of at least seven years during the period to 2016. The ability to meet their primary aggregate apportionment, as set out in Table M1, will be tested against environmental factors as Mineral Development Documents are brought forward.

### TABLE M1 Regional Apportionment for Aggregates Demand 2001 - 2016

<table>
<thead>
<tr>
<th></th>
<th>Crushed Rock (Mt)</th>
<th>Annualised Production Rate (Mtpa)</th>
<th>Sand &amp; Gravel (Mt)</th>
<th>Annualised Production Rate (Mtpa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Former Avon</td>
<td>94.95</td>
<td>5.93</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cornwall</td>
<td>29.04</td>
<td>1.82</td>
<td>Included with Devon (c)</td>
<td>0</td>
</tr>
<tr>
<td>Devon</td>
<td>55.99</td>
<td>3.50</td>
<td>21.80</td>
<td>1.36</td>
</tr>
<tr>
<td>Dorset</td>
<td>7.7</td>
<td>6.48</td>
<td>36.35</td>
<td>2.27</td>
</tr>
<tr>
<td>Gloucestershire</td>
<td>39.09* (31.09)</td>
<td>2.44* (1.94)</td>
<td>18.18</td>
<td>1.14</td>
</tr>
<tr>
<td>Somerset</td>
<td>226.18</td>
<td>14.14</td>
<td>Included with Devon (c)</td>
<td>Included with Devon (c)</td>
</tr>
<tr>
<td>Wiltshire</td>
<td>Included with Dorset (c)</td>
<td>28.31</td>
<td>29.66</td>
<td>1.85</td>
</tr>
<tr>
<td>Total</td>
<td>452.95</td>
<td></td>
<td>105.99</td>
<td>6.62</td>
</tr>
</tbody>
</table>

(c) Confidential
* Potential reduction if proposed re-apportionment of 8 Mt is feasible

Supporting Text Policy RE11

7.3.26 The Office for the Deputy Prime Minister (ODPM) has set regional guideline figures for the South West region for aggregates for the period 2001 to 2016. These are about 106 million tonnes (Mt) of land-won sand and gravel, and about 453 Mt of crushed rock, with assumptions of
9 Mt of marine sand and gravel and 121 Mt of alternative (secondary and recycled) materials.

7.3.27 A technical and strategic assessment of aggregate supply options in the South West looked at the issue of addressing identified shortfalls in aggregate provision to 2016 in terms of permitted reserves for sand and gravel and crushed rock and, in particular, the potential for substitution from other resource areas as follows:

- A shortfall of crushed rock identified in the Forest of Dean resource area could potentially be met from significant reserves and resources in neighbouring areas, which supply similar markets. This will require that MPAs in Gloucestershire and the former Avon area (possibly including Somerset) should collaborate in the preparation of their LDDs to identify if the shortfall of eight Mt to 2016 in the sub-regional apportionment for crushed rock in Gloucestershire (relating to the Forest of Dean resource area) can be met from elsewhere;

- The technical report has also proposed various options to meet those shortfalls in the sand and gravel resource areas. Gloucestershire, Wiltshire and Dorset MPAs should work together on a collaborative basis with their adjacent MPAs in order to establish whether any shortfalls in supplies of sand and gravel from the South West can be met from existing reserves or existing development plan allocations, or other identifiable resources. The environmental capacity of those areas and the effect on supply patterns should also be taken into account.

7.3.28 Over the life of the RSS it is envisaged that the testing of the regional and local apportionment will be monitored to determine the scope of any review of national aggregates demand forecasts. The SWRAWP is best placed to assist with this process and will continue to provide essential support to the RPB by coordinating the collection, collation and analysis of minerals data.

**Policy RE12 Recycled and Secondary Aggregates**

Provision will be made for 121 Mt of secondary and recycled aggregates to be utilised over the plan period to 2016. LDDs will identify new sites, to secure an appropriate provision of minerals/aggregates recycling plants in appropriate locations, in accordance with Policy W2.
Appendix D
Undeveloped Preferred Areas for Sand & Gravel from within the Adopted Minerals Local Plan (MLP) (1992-1997)

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Resource Area</th>
<th>Potential Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dryleaze Farm</td>
<td>Upper Thames Valley</td>
<td>1.25</td>
</tr>
<tr>
<td>Cerney Wick</td>
<td>Upper Thames Valley</td>
<td>0.5</td>
</tr>
<tr>
<td>Kempsford / Whelford</td>
<td>Upper Thames Valley</td>
<td>6.0</td>
</tr>
<tr>
<td>Horcott / Lady Lamb Farm</td>
<td>Upper Thames Valley</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>Resource Area Total</td>
<td>10.75</td>
</tr>
</tbody>
</table>

*Data provided in million tonnes (mt) unless otherwise stated*
Appendix E
Developed and Undeveloped Preferred Areas for Sand & Gravel from within the Wiltshire & Swindon Adopted Minerals Local Plan (Nov 2001)

Developed Preferred Areas

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Resource Area</th>
<th>Reserves identified within the Preferred Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eysey Manor Farm</td>
<td>Upper Thames Valley</td>
<td>Figures combined for commercial confidentiality purposes</td>
</tr>
<tr>
<td>Roundhouse Farm</td>
<td>Upper Thames Valley</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource Area Total</td>
<td></td>
<td>3.9</td>
</tr>
</tbody>
</table>

*Data provided in million tonnes (mt) unless otherwise stated*

Undeveloped Preferred Areas

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Resource Area</th>
<th>Potential Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land East of Latton</td>
<td>Upper Thames Valley</td>
<td>1.4 – 1.5</td>
</tr>
<tr>
<td>Alex Farm</td>
<td>Upper Thames Valley</td>
<td>1.1 – 1.4</td>
</tr>
<tr>
<td>Land North West of Water Eaton House</td>
<td>Upper Thames Valley</td>
<td>0.7</td>
</tr>
<tr>
<td>North West of Latton</td>
<td>Upper Thames Valley</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource Area Total</td>
<td></td>
<td>3.8 – 4.2</td>
</tr>
</tbody>
</table>

*Data provided in million tonnes (mt) unless otherwise stated*
Appendix F
Map of Preferred Areas
for Sand & Gravel from Gloucestershire and Wiltshire & Swindon Minerals Local Plans

Preferred Areas in Gloucestershire:
1. Dryleaze Farm
2. Cerney Wick
3. Horcott / Lady Lamb Farm
4. Whelford

Preferred Areas in Wiltshire:
5. North West of Latton
6. Land East Of Latton
7. Eysey Manor Farm
8. Alex Farm
9. Land North West of Water Eaton House
10. Round House Farm