

# **LEICESTERSHIRE MINERALS DEVELOPMENT FRAMEWORK**

**CORE STRATEGY AND DEVELOPMENT  
CONTROL POLICIES  
DEVELOPMENT PLAN DOCUMENTS**

**PREFERRED OPTIONS**

**FURTHER CONSULTATION**

**OCTOBER 2007**

## Contents

<b>1.0</b>	<b>Introduction .....</b>	<b>1</b>
	Background .....	1
	Next Stages.....	2
<b>2.0</b>	<b>Spatial Characteristics Relevant to the Framework Area .....</b>	<b>4</b>
<b>3.0</b>	<b>Spatial Strategy for Mineral Resources.....</b>	<b>6</b>
	Introduction .....	6
	Geological Resources .....	6
	Strategy to meet Minerals Development Objectives.....	7
	Supply.....	7
	Environmental protection .....	8
	Transport .....	8
<b>4.0</b>	<b>Strategy for the Future Provision of Specific Minerals.....</b>	<b>11</b>
	Aggregate Minerals .....	11
	Use of secondary and recycled materials .....	12
	Sand and gravel extraction .....	13
	Crushed rock .....	17
	Other Construction materials.....	19
	Brickclay .....	21
	Gypsum .....	23
	Fireclay .....	23
	Building and Roofing Stone .....	26
	Energy Minerals .....	28
	Coal .....	28
	Oil and Gas.....	32
	New energy production technologies.....	33
<b>5.0</b>	<b>Mineral Safeguarding Areas.....</b>	<b>35</b>
	Background .....	35
	Government Guidance .....	36
	Mineral Resources within Leicestershire .....	37
	Preferred Methodology for Safeguarding Mineral Resources.....	38
	Preferred Safeguarding Option.....	39
<b>6.0</b>	<b>Spatial Maps .....</b>	<b>40</b>
	Figure 1 Aggregates Spatial Map .....	<b>Error! Bookmark not defined.</b>
	Figure 2 Other Construction Materials Spatial Map.....	<b>Error! Bookmark not defined.</b>
	Figure 3 Energy Minerals Spatial Map .....	<b>Error! Bookmark not defined.</b>
	Figure 4 Mineral Safeguarding Areas.....	<b>Error! Bookmark not defined.</b>

## 1.0 Introduction

### Background

- 1.1 The Minerals Development Framework (MDF) is being prepared for the administrative area of Leicestershire (outside the City of Leicester) under the provisions of the Planning and Compulsory Purchase Act 2004. Consultation on Issues and Options took place in June 2005 and on Preferred Options for Core Strategy and Site Allocations documents in September 2006. The consultation documents can be found on the County Council's website ([www.leics.gov.uk](http://www.leics.gov.uk)).
- 1.2 In accordance with the Government's guidance on the preparation of Core Strategy documents, contained in Planning Policy Statement 12 (PPS12), the Core Strategy contained chapters which sought to set out a spatial vision for the plan area, together with preferred minerals development objectives and a spatial strategy for achieving the vision. These were contained in Chapters 3, 4 and 5 of the Document.
- 1.3 In their response to the Preferred Options, the Government Office for the East Midlands (GOEM) were critical of the Core Strategy and advised that the document may be unsound because of what it regarded as a lack of a spatial strategy and the need to have explored and consulted on alternative spatial strategies. The identification of these deficiencies is a consequence of emerging clarification and advice associated on with the new development plan system.
- 1.4 The matter of soundness is very important in the new plan making system. Development Plan documents need to be found sound by an independent Inspector. Being found unsound will mean that the document cannot be adopted and the Council would have to take one or more steps back in the process to rectify the problem before submitting them for re-examination.
- 1.5 Comments are now invited on this consultation document, which has been prepared in an attempt to rectify the deficiencies identified by GOEM before work can move onto the next stage of preparing documents for submission to the Secretary of State for examination. Responses are requested by ...November 2007. Responses may be made by sending an email to: [planningcontrol@leics.gov.uk](mailto:planningcontrol@leics.gov.uk), or by

letter addressed to the Director of Community Services, County Hall, Glenfield, Leicester, LE3 8TE.

- 1.6 There is no need to repeat representations previously made on the Preferred Options documents. These representations can be viewed on the County Council's website. They will all be taken into account in developing the MDF documents in readiness for submission for examination, which is the next key stage in its preparation.
- 1.7 The document seeks to explain better the preferred spatial strategy for minerals which was not fully developed and explained in the previous consultation documents. It provides a description of the spatial characteristics of the plan area with particular reference to the existing pattern of geological resource and mineral activity and an explanation of what the future provision for mineral requirements needs to be. The spatial portrait brings out what is distinctive about the area. The existing essential spatial characteristics and the spatial strategy are also expressed in diagrammatic form.
- 1.8 The consultation document also includes a section on Mineral Safeguarding Areas (MSAs). Revised national mineral planning policy published after the Preferred Options document was produced requires MSAs to be defined in development plans. The current consultation exercise provides an opportunity to comment on the Council's preferred methodology for safeguarding mineral resources together with its preferred Mineral Safeguarding Areas within Leicestershire.

## **Next Stages**

- 1.9 Having taken account of government advice, the programme for the preparation of the Minerals Development Framework has been revised. Following the current consultation, work will move onto preparing a document for submission to the Secretary of State for examination. Submission of the Core Strategy is now programmed to take place in June 2008, with the Inspector's Report expected in July 2009 and adoption taking place in October 2009.
- 1.10 In accordance with other advice received from GOEM and the Planning Inspectorate, the programming of the Mineral Site Allocations document has now been separated from the Core Strategy document with the submission of the former not taking place until the Core

Strategy have been adopted. Further consultation in respect of any additional sites that may have come forward will take place in January 2009. Submission for examination is proposed for October 2009, with the Inspector's Report expected in October 2010 and adoption taking place in February 2011.

## **2.0 Spatial Characteristics Relevant to the Framework Area**

- 2.1 Leicestershire is located at the heart of England. It sits within the Three Cities sub-area, one of the five sub-areas defined in the Regional Spatial Strategy (RSS) for the East Midlands. The City of Leicester is located generally in the centre of the County, but does not form part of the Framework area. The county borders Nottingham to the north, Lincolnshire to the northeast, Rutland to the east, Northamptonshire to the southeast, Warwickshire to the southwest and Derbyshire to the northwest. The westernmost tip of the County touches Staffordshire. The West Midlands Region abuts the western boundary of Leicestershire.
- 2.2 The City of Leicester has a population of approximately 288,000. It is the tenth largest city in England. The RSS classifies the city as a 'Principal Urban Area' and as such is one of the urban areas that is the focus of economic development and regeneration in the East Midlands. The main centres of population with over 30,000 inhabitants are Loughborough, Hinckley and Coalville located in the central and western parts of the Framework Area. There are 34 other settlements in the Framework Area with a population of over 5,000. The remainder of the Framework Area has a strong agricultural base with scattered settlements in the east and south. The total population of the County at mid 2004 was 623,900.
- 2.3 By 2016, population levels are expected to rise by 5.8% and a strong growth in household numbers by 14% is expected particularly in the Principal Urban Area and around the settlements of Leicester, Loughborough, Coalville, and Hinckley as sustainable urban extensions. Particular growth is expected in Central Leicester through the Leicester regeneration programme, and the government's new growth initiative. While there is a growth in the number of households, household sizes are generally decreasing which will place pressure on the availability of land for development.
- 2.4 The main industries in the Framework Area are service industries, manufacturing, construction, food processing, pharmaceuticals together with storage and distribution. The main centres of employment correspond broadly to the main population centres.

- 2.5 The Framework Area is served by excellent transport links. The M1 is the principal arterial route linking the Framework Area with the rest of the country. The other major roads are the M69 connecting to Coventry, the M6, the A42 and the A46. Other principal roads are the A511, A444, A447, A6 and the A47. The A and B roads in the Framework Area have predominately witnessed around 3% to 7% growth in traffic in the period 2003-04.
- 2.6 Other transportation modes include railways and waterways. Main line rail connections link Leicester to Birmingham, Nottingham, Derby and London. Beyond the Framework Area long distance and international rail freight terminals are located in Birmingham and Daventry, both accessible by the motorway network. Several navigable waterways exist within the Framework Area such as the Ashby Canal, the River Soar and the Grand Union Canal branching to Market Harborough and Welford. There are no intermodal freight terminals in the Framework Area.
- 2.7 The Framework Area has a landscape of considerable variety and complexity. This is created by the varied physical and human influences that have acted on the land over time and by the underlying variations in the land itself. There is no Green Belt but there are twelve Green Wedges around Leicester and five throughout other parts of the county. Around 80% of the land use in the Framework Area is agricultural, with the emphasis on mixed cereal and livestock farming. The majority of soil quality is classified as Grade 3 with relatively small areas of particularly good or bad land.
- 2.8 The Framework Area has 3.8% woodland cover and contains part of the National Forest. Charnwood Forest is also a valuable landscape asset identified regionally as a priority area for protection and enhancement. There are no Areas of Outstanding Natural Beauty (AONBs) or National Parks within the Framework Area. There are 18 landscape character areas. Designated sites in the Framework Area comprise the River Mease designated as a Special Area of Conservation (SAC), 69 Sites of Special Scientific Interest (SSSI), 14 local nature reserves and many Sites of Importance for Nature Conservation (SINCs).

## **3.0 Spatial Strategy for Mineral Resources**

### **Introduction**

- 3.1 The Spatial Strategy for Mineral Resources focuses on the broad locations where the County Council will seek to steer new mineral extraction. The Strategy has been developed by applying the Spatial Vision and Minerals Development Objectives as contained in the MDF Core Strategy Preferred Options Document (July 2006), for which there was general support. It takes into account of all relevant national guidance, current and predicted future demand for individual minerals and responses to earlier consultations. The Spatial Strategy is graphically represented by the Key Diagrams.

### **Geological Resources**

- 3.2 Minerals can only be worked where they are found. In this respect, location options for the extraction of minerals are limited, unlike planning for other types of development which are more footloose and where options for location are more flexible. In forming an overarching spatial strategy there are therefore immediate geographical limitations as to where sites for different minerals can be located.
- 3.3 Leicestershire is a mineral rich county. For the purposes of the LMDF, the minerals within the County have been grouped into categories associated with their main uses. These are aggregate minerals (crushed rock and sand and gravel), other construction minerals (brickclay, fireclay, and gypsum) and energy minerals (coal and oil/gas). Information regarding the geological occurrence of these minerals within the County is set out in subsequent sections.
- 3.4 The current pattern of minerals activity across the County has evolved over many years. Many of the mineral operations within the County are long term with some sites active over several decades. Notwithstanding the long timescale for the LMDF, the impact of any new mineral workings on the overall spatial pattern of mineral activity across the County is therefore likely to be marginal, such that the spatial pattern of minerals activity is unlikely to change to any significant extent over the period of the Development Framework.

- 3.5 The County Council commissioned the British Geological Survey in 2005 to provide up-to-date geological information on the extent of mineral resources in Leicestershire together with updated Mineral Consultation Areas. This work made use of expert geological opinion and knowledge on the extent of mineral resources. Uncertainties nevertheless remain regarding the extent and economic viability of the identified resources. These are described in more detail in respect of particular minerals below. Uncertainties in respect of geological information have significantly inhibited the County Council's ability to consider wide ranging spatial options for mineral development which would have a realistic chance of delivering necessary future provision.

## Strategy to meet Minerals Development Objectives

### Supply

- 3.6 The LMDF needs to ensure that land is made available to provide an appropriate contribution to local, regional and national needs for minerals whilst also ensuring the prudent use of minerals resources in line with sustainable development objectives. The aim will be to make sufficient provision to meet national, regional and local requirements, in particular the sub-regional apportionment requirements for aggregates provision that the RSS identifies as necessary for the framework area. This will be achieved by identifying and allocating an appropriate pattern of sites and areas, having had regard to environmental and local amenity issues.
- 3.7 Extensions to existing mineral workings commonly have less environmental impacts than a wholly new proposal. They can involve the retention of existing employment and involve a more efficient use of mineral resources including full recovery of minerals thereby avoiding the unnecessary sterilisation of minerals. MPS1 recognises the possibility that there may be benefits, *"in terms of reduced environmental disturbance and more efficient use of mineral resources including full recovery of minerals, of extensions to existing mineral workings rather than new sites."* The preferred approach will therefore be to allow extensions to existing operations. It is recognised, however, that there may be cases where such extensions will not be appropriate for environmental and amenity reasons.

## **Environmental protection**

- 3.8 Mineral extraction is by its very nature an environmentally intrusive activity which can have a significant impact on the County's environment and its natural resources. In selected parts of the county the impact of past and current mineral extraction has had a major impact. Particular areas where mineral workings have had a significant effect on present day landscape character include
- sand and gravel working along the valleys of the Soar, Wreake and Trent
  - igneous rock quarries around the edges of Charnwood Forest, and further south, at Enderby, Stoney Stanton, Sapcote and Croft
  - limestone quarries at Breedon Hill and Cloud Hill
  - coal and clay operations within the Coal Measures of north-western Leicestershire.
- 3.9 MPS1 seeks the protection and enhancement of the character of surrounding rural and urban areas by careful planning and design of any proposals for minerals development. The LMDF will seek to identify locations which will have the least impact on the County's environment, its landscape, and the quality of life of local communities.

## **Transport**

- 3.10 Low priced minerals, such as sand and gravel, tend to be transported for short distances from the quarry by road, the average delivered distance being about 40 km. Local supplies of minerals are beneficial in reducing the impact of transporting them over long distances by road, including the reduction in carbon emissions.
- 3.11 The use of heavy lorries to move minerals however potentially has a number of adverse environmental impacts. The Leicestershire Local Transport Plan 2006 – 2011 (LTP) identifies the following ways in which the impact of traffic can be felt on a community:
- Vehicle noise, vibration and visual intrusion, particularly from lorries, disturbs home life and detracts from the amenity of public spaces alongside the road.

- Vehicle speeds are intimidating to pedestrians and cyclists, particularly where roads are narrow or have narrow footways
- Children are much more at risk with higher traffic speeds and are therefore less likely to be allowed out unsupervised for walking to school or recreation
- Older and disabled people can be particularly disadvantaged by heavy traffic and discouraged from getting out and about as active members of the community
- At many times of day it can feel dangerous walking across the road or driving in and out of side roads, accesses or parking places.

3.12 The County Council has worked on a lorry control network since 1993, with the network being completed in March 2006. The objective has been to concentrate goods vehicles on the most suitable routes, thereby reducing the impact of lorries, removing noisy goods vehicles from many Leicestershire communities and reducing the structural damage to many roads caused by lorries. Where appropriate, the County Council has worked with neighbouring authorities to deliver lorry controls that benefit a wide area. Care has been taken to ensure that displaced vehicles use only the main roads and do not pass through other similar communities. The routes that make up the lorry route network are shown on the Key Diagram.

3.13 There are a few locations on the lorry network itself where HGVs still have to be routed through communities, with consequent nuisance for residents. A number of steps have been taken to reduce this nuisance, including speed reduction schemes and some road alterations to reduce the noise made by passing lorries. The LTP indicates that further measures to reduce the impact of lorries will include speed reduction schemes, pedestrian and cyclist facilities to reduce the impact of severance, and maintenance work to minimise noise over patching, ironworks etcetera. In exceptional circumstances, for those communities experiencing the worst problems and where no alternatives solutions are available, the LTP states that consideration will be given to providing a bypass.

3.14 Higher priced commodities can bear longer transport distances (e.g. crushed rock and energy minerals) and have the greatest potential to be moved by rail or water. The following quarries within Leicestershire all have rail links: Bardon, Cliffe Hill, Croft and Mountsorrel. (These

sites are shown on the Key Diagram). Over 4 million tonnes of igneous rock were moved by rail from these quarries in 2005, some 30% of total igneous rock sales. There are economic and environmental advantages in transporting large amounts of heavy materials by rail and water provided that there is the network capacity and adequate loading and reception facilities.

- 3.15 The report 'State of Freight in the East Midlands' (June 2002) identified a number of significant constraints that would need to be removed if the national target for rail freight growth was to be achieved. In the Regional Freight Strategy (EMRA – July 2005), rail is seen as the key opportunity for modal shift from roadfreight, with potential for up to 30 new freight trains per day by 2015. To enable this to happen, the Strategy includes proposals to improve the provision of intermodal freight terminals in the heart of the Region, particularly in the Three Cities area. It also supports calls for vital investment in an extension of the rail network in the Region able to carry 9'6" containers. Opportunities for greater use of water for freight are considered to be small in overall terms.
- 3.16 The LMDF will therefore seek to locate new mineral working and mineral related developments:
- in close proximity to the County's lorry route network;
  - where road traffic generated by the development can avoid residential areas and minor roads; and
  - where rail/water transport could be secured for movement of minerals.

## **4.0 Strategy for the Future Provision of Specific Minerals**

### **Aggregate Minerals**

- 4.1 Aggregates (sand and gravel and crushed rock) are the most important minerals produced in the County in terms of volume. The Government's latest forecast for future aggregates provision was published in June 2003. This forecast requires the East Midlands to provide 523 million tonnes of crushed rock and 165 million tonnes of sand and gravel between 2001 and 2016.
- 4.2 In February 2004, the East Midlands Regional Assembly approved sub- regional apportionments for each of the Mineral Planning Authorities across the region. Leicestershire (with Rutland) is required to provide 262.5 million tonnes of crushed rock and 20.2 million tonnes of sand and gravel between 2001 and 2016.
- 4.3 Annex1 of MPS1 states that, in preparing their LDDs, MPAs should make provision for the sub-regional apportionment of the current National and Regional Guidelines for land-won aggregate in the approved RSS. It goes on to say however that the sub-regional apportionments should not be regarded as inflexible and that the preparation of LDDs provides an important opportunity to test the practicality and environmental acceptability of policy proposals at the local level.
- 4.4 Given the total size and range of Leicestershire's mineral resources, including the potential contribution from secondary and recycled materials, it is considered that, in principle, land provision could be made to meet the total estimated future requirements for minerals, which are established for the County in the Regional Spatial Strategy. Accordingly, securing the overall supplies of minerals as apportioned at regional level is taken as a first starting point for all options in respect of aggregate minerals.

## Use of secondary and recycled materials

- 4.5 It is Government policy to encourage the greatest possible use of alternative (secondary and recycled) materials so as to reduce the amount of primary aggregate extracted. The National and Regional Guidelines for Aggregates Provision in England (June 2003) take into account the proportion of aggregates which will be derived from secondary and recycled sources and sets targets for the use of these materials. The East Midlands Region is expected to provide 95mt of alternative materials for the period 2001 – 2016.
- 4.6 Policies for the processing of construction and demolition waste, road planings and other wastes suitable for aggregate production will be contained in the Waste Development Framework. The LMDF will however need to facilitate the increased use of alternative materials, including suitably located minerals recycling facilities, to enable the regional target of supplying alternative materials to be met.
- 4.7 The Issues and Options Document (June 2005) put forward the following options for the location of aggregate recycling facilities:  
**Option A:** existing mineral sites, especially those that import construction and demolition wastes;  
**Option B:** former mineral workings with suitable hardstanding areas;  
**Option C:** appropriate industrial estate locations that are close to the main sources of construction and demolition waste arisings;  
**Option D:** continue to encourage recycling initiatives without offering locational advice.
- 4.8 The ISA considered that Options A and C are likely to be the most sustainable, both environmentally and economically. Option A was the most popular response from the consultation exercise.
- 4.9 The processing of mainly recycled materials particularly into aggregates can be best achieved at sites both within the urban areas and in existing quarries most of which are located in rural areas. The processing particularly of construction and demolition waste close to its point of origin will limit the use of bulk transportation on the road network but there may be opportunities to site such facilities in existing quarries which are close to or have suitable transport links to urban areas.

- 4.10 The location of facilities at existing mineral sites alone may be insufficient to achieve the level of provision necessary. Consideration therefore also needs to be given to locating facilities on existing industrial estates where environmentally acceptable. The preferred locations for aggregate recycling facilities are consequently existing mineral and waste management operations and existing industrial estates in close proximity to the County's lorry route network.

### **Sand and gravel extraction**

- 4.11 The approved sub-regional aggregate apportionment requires Leicestershire (with Rutland) to provide 20.2 million tonnes of sand and gravel between 2001 and 2016. It is calculated that there would be a shortfall of sand and gravel reserves amounting to an additional requirement of 10.22Mt over the period to 2021 (see Box 2, Core Strategy Preferred Options Document). This has subsequently fallen to 5.675Mt following the grant of planning permissions for additional extraction at Cadeby Quarry in 2006 and Shawell Quarry in 2007.
- 4.12 The Issues and Options Document (June 2005) put forward the following options for the provision of additional sand and gravel resources:
- Option A:** the use of extensions to existing operations to supply the bulk of required resources;
  - Option B:** the release of new sites to supply the majority of this need;
  - Option C:** a criteria based policy approach;
  - Option D:** existing allocations and policies included in the MLP.
- 4.13 The ISA stated that Option A generally accords with guidance in MPG6 but each case would need to be assessed on its own merits. The Option risks the likelihood of a narrower concentration of larger impacts as opposed to many small scale environmental impacts if new sites are released (Option B). It also has economic /employment benefits in that extending existing sites maintains employment in existing areas. Infrastructure may also be in place, avoiding adverse impacts during the establishment of a new site. However, new sites (via options B or C) may have the potential to offer a more sustainable location with long-term benefits during operation and following restoration. Regarding Option D, 2 allocations in the current MLP have not been taken up – if these are not taken up within the life of the MLP other sites may need to be considered.

- 4.14 Option A was by a significant margin the most popular response from the consultation exercise.

#### *Extensions*

- 4.15 As at 31/12/2006, there were 5 active sites in Leicestershire, at Cadeby, Husbands Bosworth, Lockington, Shawell, and Brooksby. There were 2 further permitted sites one of which had not yet to commence extraction, Syston (Fosse Way), whilst the other, Slip Inn Quarry, was inactive. Three of these sites involve the working of alluvial and river terrace deposits, while the remainder work glacial deposits.
- 4.16 Approximately 80% of quarry products are used within 48 km of a quarry. Sand and gravel operations within Leicestershire tend to serve local markets, largely within the County, although some material travels to neighbouring counties and regions from sites located close to the County boundary. All material is transported by road. All of the existing operations are located in close proximity to the County's lorry route network; and the road traffic generated generally avoids residential areas and minor roads. They are well located to supply development within the proposed urban growth extensions, in particular those at Loughborough, Coalville, north-east Leicester and Hinckley. Locations of existing sites are shown on the Key Diagram.
- 4.17 Based on average sales (2001-2005), existing sites (excluding Brooksby which has only recently become operational) would be capable of producing the required sub-regional apportionment production of 1.25Mt per annum. It is anticipated that the Brooksby site could produce 300,000 tonnes p.a. in addition to this. If future extraction is concentrated at these main sand and gravel sites, then all of Leicestershire's sand and gravel needs in the immediate future could be met without releasing any additional land for the establishment of new sand and gravel operations.
- 4.18 The relatively quick rate at which sand and gravel is extracted results in sites becoming exhausted and replacement ones coming forward more frequently than in the case of hard rock operations. Existing sites would not be able to meet the County's future requirements without the benefit of extensions to their currently permitted operations.

- 4.19 The minerals industry has identified potential extensions to sand and gravel extraction operations at all 5 of the existing sites referred to above, together with extensions to the inactive site at Slip Inn Quarry and the recently exhausted operation at Huncote Quarry. In total, the amount of sand and gravel reserve associated with these potential extensions total some 17Mt, which significantly exceeds the identified shortfall over the MDF period.
- 4.20 An initial assessment of these potential extensions suggests that not all the sites would be environmentally acceptable, so that a strategy of providing further land in the form of acceptable extensions would involve the probable exhaustion of resource deposits at some of the existing sites. It is nevertheless anticipated that more than sufficient sand and gravel reserves could be released through extensions to existing sites to meet requirements over the MDF period.

#### *New Sites*

- 4.21 The sub-alluvial and river terrace deposits of Quaternary and Recent age represent the most important source of sand and gravel in Leicestershire, due to their consistent grading, uniformity and lower percentage of fines. Within Leicestershire they occur most notably in the valleys of the Rivers Trent, Soar and Wreake.
- 4.22 Land adjacent to these rivers form part of the floodplain and comprise grasslands which support some of the richest wildlife in Leicestershire. They have therefore been identified as strategic river corridors where measures are proposed to protect the floodplain, enhance biodiversity, improve access and encourage, where appropriate, recreation and tourism. River sand and gravel extraction however typically leave water bodies that are attractive to birds. This is an issue for sites in close proximity to East Midlands Airport where developments that will lead to increased bird movement may be resisted due to the potential Bird Strike hazard. As a result of these environmental factors, it would not be appropriate to concentrate sand and gravel operations on the river valley deposits.
- 4.23 The second most important source is the glaciofluvial deposits, the products of glacial melt waters that escaped from the ice margins. These occur in a more complex series of isolated deposits in areas to the south and west of Leicester, representing sheet or delta-like formations above boulder clays, or irregular deposits within the clay

series. These deposits tend to be worked more modestly, due to their irregularity and general lower quality. The full extent of this resource is unknown however due to the extensive boulder clay and other drift deposits covering central and eastern parts of Leicestershire which may conceal unknown deposits.

- 4.24 Deposits of solid sand and gravel sources in the form of the Triassic Bunter Pebble Beds occur in two areas in the north-west of Leicestershire, around Measham and Castle Donington. Blown sand deposits resulting from aeolian reworking of river and glacial deposits and bare Triassic bedrock occur in the Vale of Belvoir.
- 4.25 The variability of sand and gravel deposits together with their possible concealment within, or beneath, till (boulder clay) or alluvial deposits means that it is difficult to infer the location and likely extent of potentially workable resources from geological maps. Further detailed investigation is necessary to assess the mineral resources that could be available. This situation restricts the County Council's consideration of realistic and deliverable options for new sites.
- 4.26 The minerals industry/landowners have identified 3 potential new areas for sand and gravel extraction at Huncote (Flash Farm), North Kilworth and Castle Donington. The amount of sand and gravel reserve associated with the first 2 sites total some 4Mt, which would be insufficient to meet the identified shortfall over the MDF period. Reserves from the site at Castle Donington have not yet been identified. An initial assessment of these areas suggests that the establishment of new quarries at the identified sites would have a number of adverse environmental impacts.

### *Conclusions*

- 4.27 It is considered that extensions to existing sites would have less environmental impact. Potential extensions to existing sites are capable of meeting future requirements to 2021. Remaining sand and gravel sites within the County would be capable of producing well in excess of the sub-regional apportionment requirement. Although reserves would not be equally distributed between sites, a reasonable spread is likely. If future extraction is concentrated at these sites, all of Leicestershire's sand and gravel needs in the immediate future could be met without releasing any additional land for the establishment of a

new sand and gravel operation. It is not therefore considered that the establishment of new sites is warranted.

- 4.28 The Site Allocations DPD will include specific proposals and policies for the release of sites, including specific requirements related to each site and the provision of appropriate safeguards and reclamation and after-use details.

### **Crushed rock**

- 4.29 In England, rock resources suitable for road making and building purposes are generally absent south of a line between the Humber and Exe estuaries. Rock reserves within Leicestershire are the nearest to the major market in the South-East of England which means that they are of significant importance. This is reflected in the approved sub-regional aggregate apportionment which requires Leicestershire (with Rutland) to provide 262.5 million tonnes of crushed rock between 2001 and 2016. It is calculated that there would be a surplus of crushed rock reserves amounting to 151.5Mt over the period to 2021 (see Boxes 1 and 3, Core Strategy Preferred Options Document).
- 4.30 The Issues and Options Document (June 2005) put forward the following options for priorities in respect of igneous rock/limestone provision:
- Option A:** a strategy for igneous rock/limestone provision which has as its primary focus, the specific need to meet local and/or regional demands for crushed rock;
- Option B:** a need to strike a balance between the continued supply of major markets beyond the East Midlands and the impacts on the environment and resource depletion that arise locally;
- Option C:** a focus on continuing levels of extraction at present rates, having regard to national guidelines and reflecting current Structure Plan Policy.
- 4.31 The ISA identified that Option A might be preferable in minimising local environmental effects. Option B would increase the environmental burden on Leicestershire compared to other regions and deplete local resources. However, nationwide, it reduces pressure on other regions and economies of scale may ensure that effects are minimised and concentrated. Economically, short and medium-term, there are benefits from servicing as wide a market as possible The existing quarries are

significant local employers and their continued operation creates and maintains local employment with secondary benefits to the local economy. Option C allows continuity of supply whilst focussing on minimising waste and efficient use of recycled materials.

- 4.32 There was little difference in numbers of responses to the three options, but Option C was the one that was chosen most.
- 4.33 Spatial options regarding crushed rock are significantly restricted by geology. Thus, igneous rock resources of Leicestershire have a relatively small areal extent around the flanks of Charnwood Forest and to the south-west of Leicester. Extraction is now concentrated at 4 main sites: Bardon; Cliffe Hill; Croft; and, Mountsorrel. Whitwick and Groby quarries are inactive although coating and concrete plants are maintained. In view of their considerable economic importance, these rocks are worked beneath substantial thicknesses of overburden and also have extensive associated infrastructure, including rail links. Whilst the number of quarries has declined, they have considerably expanded in size.
- 4.34 The hard and resistant nature of the rocks suitable for use as crushed rock aggregate means that they also give rise to some of Britain's most attractive and spectacular upland scenery. Most of the igneous rock quarries in the County lie within areas of high ecological and scenic value, as do the remaining rock resources.
- 4.35 Charnwood Forest in particular is highly valued for its scenic beauty and has been identified as a priority area for protection and enhancement of natural and heritage landscape assets. The underlying rocks have resulted in a varied, hilly landform with exposed crags and rocky knolls and fast-flowing streams. It is the most well-wooded part of the County and has a high concentration of mixed deciduous and coniferous woodland, including many ancient woodland sites and a significant proportion of the County's wet woodland habitat. The area is attractive to visitors and has 3 country parks.
- 4.36 The draft Regional Spatial Strategy promotes initiatives to protect and enhance the particular character of Charnwood Forest, and includes a proposed Charnwood Forest Regional Park as one of the strategic priorities for the Three Cities Sub-Regional Area. The Structure Plan aims to control development strictly within Charnwood Forest, with proposals needing to prove that they will either conserve or enhance its

character and that in terms of siting, scale and design they complement the surrounding landscape.

- 4.37 Carboniferous limestones appear at the surface in several small isolated inliers in north-west Leicestershire near to the Leicestershire/Derbyshire border. At present, two of the limestone inliers are worked within Leicestershire, at Breedon Hill and Cloud Hill. Limestone resources of Jurassic age also occur in East Leicestershire associated with deposits of ironstone. The ironstones are not considered to have any future economic significance as a source of iron, but the Jurassic deposits could be worked as a source of building stone or low quality aggregate.
- 4.38 Given the level of permitted reserves in relation to the future requirements, and the ability of the existing sites to attain the required level of output, together with the objective of protecting the natural environment, it is not considered necessary to make specific provision in this LMDF for future crushed rock extraction. Extensions to existing quarries may nevertheless be appropriate for operational reasons or as an appropriate means of addressing any unforeseen circumstances affecting the landbank provision or production capacity, provided that the effects of the proposed development on the environment and residential amenity can be made acceptable. Existing quarries are shown on the Key Diagram.
- 4.39 Quarries producing rock aggregates generally will require a longer security of reserves to justify capital investment in, for example, crushing equipment. This factor coupled with the geological limitations mean that it is not considered appropriate at the current time to contemplate any new greenfield sites for rock extraction, given the potential impact that such large scale development would involve, particularly within attractive areas of the County where development is being strictly controlled.

## **Other Construction materials**

- 4.40 On current evidence, the choices for other construction minerals are limited, with existing landbanks meaning that major additional provision is unlikely to be needed during the plan period.

- 4.41 The Issues and Options Document (June 2005) put forward the following options in relation to the supply of gypsum, brick clay and fireclay:
- Option A:** that the landbank should cover a 15-year period;
  - Option B:** that the landbank should cover a 25-year period;
  - Option C:** that no landbank figure is used for guidance purposes.
- 4.42 The ISA considered that the use of a nominal landbank allows effective resource planning which brings economic security as well as allowing long-term planning of mitigation measures. The use of a landbank is also in conformity with current and forthcoming government guidance and industry views. In general, it states that the longer the period of the landbank, the greater the possibilities for strategic planning for sustainability.
- 4.43 There was a fairly even split in responses between Options A and B.
- 4.44 It is an objective of MPS1 (Annex 2) “to provide and make available brick clays at a level that reflects the high initial investment in, and high levels of capital expenditure required to maintain and improve, new and existing brick-making plant and equipment”. MPS1 also indicates that a stock of permitted reserves to support the levels of actual and proposed investment required for each new or existing manufacturing plant and the maintenance and improvement of existing plant and equipment should be provided that will normally be sufficient for 25 years of production.
- 4.45 The calculation of anticipated provision to be made for **brickclay** over the MDF period indicates that there would be a surplus of reserves amounting to 7.387Mt, approximately 12 years supply (Box 4 Core Strategy Preferred Options Document). Sufficient permitted clay reserves currently exist therefore to meet the needs of the brick industry for the MDF period. In the event of any operational difficulties, resulting in a landbank or significant production capacity deficit, there may however be a need to release additional reserves.
- 4.46 There are no specific national guidelines covering the provision of **gypsum**. A calculation of the anticipated provision to be made over the LMDF period based on continuity of operations at the Barrow Works indicates that there would be a surplus of gypsum reserves amounting to 2.610Mt, approximately 3 years supply (Box 6 Core Strategy Preferred Options Document). It may nevertheless be

necessary to consider the release of additional gypsum resources during this MDF period.

4.47 The Issues and Options Document (June 2005) put forward the following options in respect gypsum/brickclay provision:

**Option A:** a strategy for provision which has as its primary focus, the specific need to meet local and/or regional demands for plasters/bricks;

**Option B:** striking the right balance between the continued supply of major markets beyond the East Midlands and the impacts on the environment and resource depletion that arise locally;

**Option C:** a focus on continuing levels of extraction at present rates, having regard to proposed local landbanks.

4.48 The ISA identified that Option A might be preferable in minimising local environmental effects. Option B would increase the environmental burden on Leicestershire compared to other regions and deplete local resources. However, nationwide, it reduces pressure on other regions and economies of scale may ensure that effects are minimised and concentrated. Economically, short and medium-term, there are benefits from servicing as wide a market as possible. The existing sites are significant local employers and their continued operation creates and maintains local employment with secondary benefits to the local economy. Option C would allow strategic planning to minimise adverse environmental effects.

4.49 There was a fairly even split in responses between Options A and B.

## **Brickclay**

4.50 Brick clay is mainly produced by the brick manufacturers and the location of the industry thus tends to reflect the distribution of the principal brick clay resources. Modern brickmaking technology requires a high capital investment and is increasingly dependent, therefore, on raw materials with predictable and consistent firing characteristics in order to achieve high yields of saleable products.

4.51 The important role that bricks and related products play in determining the appearance and quality of our built environment is widely recognised. The variety of brick products contributes significantly to the rich regional and local architectural heritage of mainland Britain as well as the repair of traditional brick built structures. Consumers are likely

to continue to demand a wide choice of high quality, affordable bricks. In order to satisfy this demand, remain competitive and meet increasingly stringent environmental controls, industry requires continued access to a range of clay resources.

- 4.52 The Triassic Mercia Mudstone is the principal brickclay resource in Leicestershire. The resource is extensive, but the most important resources are around existing sites. Presently there are 6 brickworks within Leicestershire, all with adjacent clay pits. All the existing clay operations are capable of continuing production throughout the LMDF period.
- 4.53 MPS1 states that it is generally desirable that brick clay should be extracted as close as practicable to the brickworks that it is supplied to, and that therefore consideration should initially be given to the potential for extraction of brick clay close to the works and the potential for extensions to existing planning permissions to maintain supplies. Local supply is generally desirable in order to reduce costs and the environmental and social impacts of transportation of clay from the pit(s) to the works, as well as to maintain the investment in the factory and local employment.
- 4.54 Based on information derived from the Survey of Clay Operators carried out in 2003, operations at Measham, Heather and Desford will have exploited their reserves during the period 2023 – 2028, if current rates of production are maintained. In line with Government guidance, the preferred spatial strategy to meet any potential shortfalls in the longer term is to release additional brickclay resources as close as practicable to the brickworks that it is to be supplied.
- 4.55 MPS1 encourages the brick clay extraction and brick manufacturing industries to assist the planning process by providing the planning authorities with appropriate information, on reserves of clay, quality of clay, volume and type of products being produced, plans for developing the capacity of brickworks, and known areas of potential reserves that should be safeguarded. No additional extraction areas have however been promoted by brickclay operators through the preparation of the MDF. (Planning permission was however granted in July 2007 for the extraction of an additional 3.4 million cubic metres of clay at Measham which would be sufficient to supply the brickworks for about 22 years.)

## Gypsum

- 4.56 Gypsum occurs in the Triassic Mercia Mudstone Group in north Leicestershire. The Tutbury Gypsum horizon is currently extracted by British Gypsum from an underground mine at Barrow-upon-Soar, where bagged building plasters are also produced. A fault demarks the southern limit of the deposit while extensive faulting near the Nottinghamshire border similarly marks the northern limit of the resource within Leicestershire. The existing planning permission at Barrow effectively defines the viable deposit. Outside this area, the bed thickness/grade declines or there are difficult geological conditions which would preclude mining.
- 4.57 An outcrop of the Tutbury Gypsum horizon has been inferred to the south of the Barrow Mine based on recent mapping. Very limited borehole evidence indicates that the down dip extension of the Tutbury Gypsum has potential for gypsum mining, but there is much less confidence about the potential resource area compared with the Barrow Mine. Further exploratory work is required to assess this potential resource. Potential also exists for future extensions into Leicestershire of the Nottinghamshire Marbleagis Mine. Details of the approximate extent of the resource area, based on information provided by British Gypsum, are shown on the key diagram.
- 4.58 Gypsum is mainly used in the manufacture of building products – plaster, plasterboard and cement. Demand is principally driven by activity in the construction sector. Whilst sufficient permitted gypsum reserves currently exist to allow the continuation of operations at Barrow during the LMDF period, it is recognised that there can be a long lead in time for the development of new extraction areas. No new gypsum extraction sites have been promoted in the MDF process and the MPA does not possess sufficient detailed reserve knowledge to assist the process further. The need to identify additional reserves to meet any potential shortfalls in the longer term will be considered when the LMDF is reviewed.

## Fireclay

- 4.59 The calculation of anticipated provision to be made for fireclay over the LMDF period indicates that there would be a shortfall of fireclay

reserves amounting to 4.477Mt, approximately 13.6 years supply (Box 5 Core Strategy Preferred Options Document). Insufficient permitted fireclay reserves currently exist therefore to meet requirements for the duration of the LMDF period.

- 4.60 The Issues and Options Document (June 2005) put forward the following options in respect of the future supply of fireclay:
- Option A:** more permanent stocking and blending facilities at works sites;
  - Option B:** more permanent stocking and blending facilities at remote sites;
  - Option C:** the establishment of new long-term clay extraction sites;
  - Option D:** ensuring that access to fireclays associated with opencast coal operations is achieved;
  - Option E:** imports of fireclays from elsewhere;
  - Option F:** making no provision for the future supply of local fireclays.
- 4.61 The ISA indicated that Option A may lead to inefficiencies in transportation of supplies between works, and to local landscape impacts and potential effects on local soil and watercourses from stockpiles. Option B could have local landscape impacts and impacts of continued nuisance. However, the consolidation and rationalisation of operations could be combined with environmental improvement and some restoration works, mitigating some impacts, while protecting existing employment. Option C is no longer normally economically viable unless combined with opencast coal operations. While Option D may lead to potential local environmental impacts associated with the stockpiling of the clays, many of these impacts are likely to occur in association with the coal extraction to some extent and combined extraction would provide economic and resource management benefits. Option E raises sustainability issues associated with transportation and does not contribute to the objective of using local materials. Given that national supplies are in decline, this would not contribute to sustainable resource management. Option F does not contribute to sustainable resource planning and risks the resource being wasted.
- 4.62 There was an exactly even split in responses between Options A and D. There was little support for Options E and F.
- 4.63 A sequence of quality pottery, pipe and refractory clays is associated with the upper seams of the Middle Coal Measures of North West

Leicestershire. Although restricted to a relatively small basin between Swadlincote and Moira, these deposits have been recognised as an important national source. The MPA is not in a position to identify specifically any land for future fireclay extraction as no new fireclay extraction or joint coal and fireclay sites were promoted by industry during the preparation of the LMDF. The MPA does not possess sufficient detailed reserve knowledge to identify potential extraction areas.

- 4.64 Leicestershire has dominated fireclay supply in England for many years and in 2005 the county accounted for about 31% of total sales in England. In the 1970s to early 1980s, large quantities of fireclay were selectively extracted with coal but stockpiled separately according to clay quality. The principal source of these fireclays was the Donington Island site which is where the current stockpiles are located. Originally some 7 million tonnes of fireclay were stocked, although about 2 million tonnes of poor quality clay was subsequently used for restoration. The Donington stockpiles are owned by a consortium of companies, the most important suppliers from the site being Hepworth Building Products and Ibstock Brick, although Redbank Manufacturing Co Ltd also supplies clay.
- 4.65 In recent years clay reserves have been exploited by opencast methods often in conjunction with coal extraction schemes, as at Albion and Hicks Lodge. This method has tended to release larger volumes of fireclays of differing qualities than are immediately required, which are then stockpiled on site or remotely as at Donington Island, where blending also takes place to supply various works in the area and beyond.
- 4.66 The identified need is based on extraction/production rates and sales patterns over the period between 1999 and 2002. The latter are a crucial factor affecting the projected life of the fireclay reserves and reflect the importance of the north west Leicestershire fireclays. A substantial amount of fireclays are exported out of the County to regional and national markets, and do not only support local works. Sales during 1999 to 2002 may also have been higher than those normally expected due to the influence of clays released from opencast coaling at Hicks Lodge and Albion.
- 4.67 It is an objective of MPS1 (Annex 2) to safeguard and where necessary, stockpile supplies of clays, especially specific “premium”

brick clays and fireclay. It states that where scarce reserves cannot be used when extracted, consideration should be given to the potential for stockpiling the material on an environmentally acceptable site, either on or in the ground, until it is needed.

- 4.68 Donington Island is the only significant clay stocking facility within the County. This site contained around 1.7 million tonnes of clay at the end of 2006. The facility currently has a planning permission until the end of 2012. Stricter husbandry of existing reserves at Donington Island would be beneficial to local works. It is therefore considered that provision should be made for an operational area within the existing Donington Island site, which could operate as a long term strategic facility for the stocking and blending of fireclays. The Site Allocations DPD will include specific proposals for the Donington Island site, including specific requirements related to the site and the provision of appropriate safeguards and reclamation and after-use details.
- 4.69 Annex 2 of MPS1 encourages coal producers to make the best possible use of fireclay reserves and to find markets for fireclay so that it remains available for use rather than being used in site restoration. Given the situation regarding fireclay reserves, where opencast coal mining is acceptable on its own merits, the County Council considers that provision should be made for the extraction and beneficial use of fireclay. This may potentially reduce the need for extraction elsewhere and prevent the unnecessary sterilisation of valuable mineral resources, whilst supplying local works with necessary raw materials.
- 4.70 In line with Government Guidance, the preferred spatial approach to future fireclay extraction is to provide a long term strategic facility for the stocking and blending of fireclays within the existing Donington Island site and to encourage the extraction of any fireclay associated with proposals for opencast coal operations.

### **Building and Roofing Stone**

- 4.71 MPS1 (Annex 3) recognises the growing importance of natural building and roofing stone. The Annex promotes the active safeguarding of known and potential building stone reserves and also states that Building Stone quarries are often on a small scale when compared to other forms of mineral extraction. It states that MPAs should, as far as is practicable, identify in their LDDs, quarries of importance to the built

heritage, whether disused or active, and describe the approach to be taken to these in terms of minerals and other planning applications.

- 4.72 Two major groups of resources dominate the supply of building stone in Great Britain; the various Jurassic limestones in the Midlands and South of England and Carboniferous sandstones in West Yorkshire, Derbyshire, the Peak District and the North West. Historically a wide range of indigenous stone has been used for building purposes in Leicestershire. The majority of the most important rock types found in the County have been used, including igneous rocks of the Charnwood area; metamorphic slates from Swithland; Carboniferous limestones and sandstones from north-west Leicestershire; and ironstones from east and north-east Leicestershire. None of these sources are currently exploited solely for building stone. Only a very small amount of the igneous rock and limestone worked at local quarries is sold as building stone.
- 4.73 It is not possible to estimate future requirements for building stone during the LMDF period. The demand for natural stone products comprises two principal markets, namely new buildings and the repair of historic buildings. The market for stone for new building is small and specialised but relatively buoyant, whilst the conservation market is of increasing importance. The area and likely level of demand for some stones is likely to be only extremely local. Future demand and supply requirements are not prescribed by National and Regional planning policy as is the case for aggregate production.
- 4.74 According to the British Geological Survey in their Mineral Planning Fact sheet 'Building and roofing stone' (Updated Mar 2007), the industry is still capable, with a few notable exceptions, of meeting current demand for natural stone. It does not specifically identify any shortage of stone derived from Leicestershire.
- 4.75 It is therefore anticipated that future demands for building stone from within the County are likely to remain at a low level that will enable existing aggregate quarries to satisfy requirements. If the situation changes and further proven need is demonstrated, then consideration of dedicated building stone operations may be appropriate.
- 4.76 MPS1 encourages the building and roofing stone industry to assist the planning process by providing MPAs with appropriate information on reserves of building and/or roofing stone. Natural England and English

Heritage are encouraged to discuss the prospects for future working at specific important sites and to advise the relevant MPAs of their conclusions.

- 4.77 The required information on the availability and location of suitable stone to support the identification of sites for future extraction is very limited. The MPA does not have sufficient detailed knowledge of the nature and extent of suitable building stone resources to assist the identification of potentially workable materials. Workable deposits may be difficult to find and where they do occur may be very restricted in extent. No new proposals have been promoted within Leicestershire during the MDF process.
- 4.78 Appropriate locations within Leicestershire with suitable building stone resources for future extraction are likely to be scarce. The nature of the building stone market means that any proposals are likely to be for the small scale extraction of local materials for specific projects. It is considered that the need for reserves to be released in the future should be addressed having regard to environmental protection policies contained in the MDF, provided that it can be demonstrated that the material would be used in order to preserve or enhance the character of historic buildings, the local distinctiveness of settlements and the historic environment of the Leicestershire.

## **Energy Minerals**

### **Coal**

- 4.79 The Coal measures of the Carboniferous strata provide the coal-bearing rocks, the main developments of which occur in north-west Leicestershire where they both crop out at the surface and are concealed beneath Triassic rocks, and in north-east Leicestershire where they are entirely concealed.
- 4.80 In north-west Leicestershire the coal deposits are divided by an up-lift of older strata – the Ashby Anticline upon which the town of Ashby de la Zouch is situated. The resources to the east are recognised as the Leicestershire Coalfield and those to the west as the South Derbyshire Coalfield. Both coalfields formerly supported deep mining but all the

collieries have now closed. The exposed parts of the coalfields, generally those areas adjacent to the outcrop on either side of the anticline, have supported extensive opencast mining operations, particularly to the west where important fireclays have also been worked. The overlying depths of overburden limit the southern extent of working in the Leicestershire Coalfield.

- 4.81 The exposed coalfield in Leicestershire has seen extensive opencast coal mining activity over the last 50 years. However, production and the number of extraction sites has reduced in recent years in line with the situation nationally. With the cessation of the small coaling operation at Swainspark in 2006, there were no active opencast operations in the County as at the beginning of 2007. Opencast operations at Longmoor, between Ravenstone and Normanton-le-Heath, are however due to commence during 2007.
- 4.82 The North West Leicestershire Coalfield is an area of gently undulating landform, dominated by mixed farmland and the past and present effects of coal mining and clay extraction. The Coalfield area is distinguished by a denser settlement pattern than almost any other part of Leicestershire. Although urban and industrial influences are rarely far away, there remain substantial areas of open, mainly arable, farmland. The area has few woodlands. Part of the Coalfield area lies within the catchment area of the only internationally designated site in Leicestershire, the River Mease Special Area of Conservation (SAC).
- 4.83 The western part of the area, north of Measham and west of Packington, is most strongly affected by present day coal and clay working, and the associated road traffic. However, the character of this part of the area is also increasingly being influenced by the restoration of mineral workings and the development of the National Forest. In the extreme north-east the area around Newbold, Coleorton and Griffydham is particularly distinctive. This was a medieval coal mining area. A dispersed pattern of settlement arose in connection with the small scale mining, together with small fields. These features are reflected in the present day landscape which comprises a mixture of pasture in small irregular fields often with overgrown hedges, small linear settlements and scattered individual cottages, and an intensive network of public footpaths. This pattern is unique within Leicestershire and gives this part of the character area a strong sense of intimacy.

- 4.84 Since the early 1980s considerable and sustained effort has been put into the regeneration of the North West Leicestershire Coalfield Area, which suffered considerable problems as a result of the demise of the deep-mined coal industry. The prospects for this area have improved significantly and increased confidence in the area's future has resulted in private sector investment in new development. However, there is a long way to go before the Council's long-standing commitment to the regeneration of the area can be withdrawn. The Structure Plan therefore supports the former Leicestershire coalfield areas in the completion of a forward strategy to consolidate the regeneration process. Provision is also made in the policies and proposals of the North West Leicestershire Local Plan for the revitalisation of the Priority Area for the area of mining decline aimed at strengthening and diversifying the local economy, coupled with efforts to upgrade the environment, particularly of Coalville and Ashby Woulds.
- 4.85 Current indications are that operations involving the deep-mining of coal and associated colliery spoil disposal are unlikely to take place within Leicestershire during the MDF period. The development of the North East Leicestershire, 'Vale of Belvoir', Coalfield has been limited to the Asfordby Mine. This closed in 1997 due to adverse geological conditions following a limited production period.
- 4.86 The Government has indicated in the Energy White Paper (May 2007) that, where it is environmentally acceptable to do so, there is a value in maintaining access to economically recoverable reserves of coal. The future role of coal in the UK energy supply is being examined at a national level at the present time through the work of the Coal Forum. This brings together the key players from the coal industry and the power sector to develop strategies to maximise economic production of UK coal. The Coal Forum has confirmed the importance of a continuing role for coal as part of a diverse and resilient energy mix and identified a number of potential benefits from use of UK produced coal.
- 4.87 The Issues and Options Document (June 2005) put forward the following options in respect of opencast coal:
- Option A:** identifying the extent of the shallow coalfield and highlighting potential areas of search for future extraction within it;
  - Option B:** establishing a forward programme of potential workable reserves;
  - Option C:** provide no MDF policies over coal operations and continue to look to strategic, regional and national policy for advice.

- 4.88 The ISA indicated that Options A and B help avoid a fragmented approach and help avoid resource sterilisation by identifying reserves. Option B allows forward planning, with the potential to plan for the best use of reserves. This provides economic reassurance and security for local people and the economy. Forward planning can avoid fragmentation and creeping accumulation of effects. Option B was therefore considered to be the most sustainable option.
- 4.89 There was a very even split in responses between Options A and B.
- 4.90 Shallow coal reserves suitable for extraction by means of opencasting are situated in a very small area within North-West Leicestershire. The extent of the exposed coalfield is illustrated on the Key Diagram. The opencast coal area is coincident with 'Shallow Coal' defined on the Coal Resources map of Britain. Significant parts of this resource area have however already been worked. Within such a concentrated area, the County Council is mindful of the potential unacceptable impact of further mineral working on the environment of the area. It is recognised, however, that proposals for opencast coal extraction can also lead to longer term environmental improvements, particularly through the reclamation of derelict land or land that is in a poor state as a result of past mining activity. Restoration schemes could also provide potential benefits for the area through the creation of a new wooded landscape as part of the National Forest together with new areas of heathland.
- 4.91 The MPA does not have the technical or commercial information relating to the quality and extent of reserves, to the degree that more specific areas of search for future working can be defined with sufficient certainty. The former Conditional Licences for opencast coal, which formed part of the portfolio of sites distributed at the time of coal privatisation, represent sites where coal has been essentially proved with some confidence. There are two such sites in Leicestershire (Coalfield West and Swepstone Lane).
- 4.92 MPG3 states that the extent to which it will be possible to identify particular areas where extraction may be acceptable will depend upon local circumstances and the level of knowledge about the resource. The County Council has been advised by UK Coal that there are two possible sites within Leicestershire which have been sufficiently assessed as to suggest that a proposal for extraction could be received

in the near future. These correspond to the former Conditional Licence sites mentioned above. The sites put forward are Longmoor, which has now been permitted on appeal, and Minorca, which was refused planning permission in July 1996. UK Coal have not provided any information to suggest that the original reasons for refusal at Minorca can be overcome. No other coal operators have put forward any sites.

- 4.93 It is increasingly difficult to find environmentally acceptable sites in the County that can be worked without damaging the environment to an unacceptable extent. This reflects the particular situation found in the County. The general settlement pattern in the exposed coalfield consists of small, scattered communities that developed around individual collieries and there are no large areas of open countryside remote from such communities where working could take place without adversely affecting them. There may be some areas however where it is possible to develop proposals which do not raise significant environmental concerns or which offer potential benefits to local communities which would outweigh the adverse impacts that will result from mineral working. The preferred option for opencast coal is, therefore, to draw up criteria-based policies which balance the environmental impacts of coal extraction with its potential benefits.

## **Oil and Gas**

- 4.94 The alternating sandstones and shales of the Lower Coal Measures in the East Midlands provide ideal conditions for the accumulation of oil and gas. However, limited folding of these strata produced relatively small traps for the accumulations. Some 10 Petroleum Exploration and Development Licences have been granted covering a large part of north Leicestershire. Over recent times, 2 proposals for exploration wells have been approved from within these licensed areas. Production has continued at Long Clawson A and C wells.
- 4.95 Government advice seeks to realise the maximum economic exploitation of oil and gas reserves and sees the key role for the planning system to be concerned with the assessment of the environmental considerations of proposals. No targets are set for energy minerals.

- 4.96 MPS1 (Annex4) encourages the industry to make available to MPAs information on the extent of known reserves of oil and gas, its forward plans and any potential sites for exploration, appraisal or production that it is considering and for which it holds exploration or production licences. No such information has been forthcoming. No attempt has been made to define resource areas for hydrocarbons as prospects can only be identified after extensive exploration activity. The preferred option is, therefore, to draw up criteria-based policies to ensure that activities related to oil and gas exploration, appraisal and production take place in an acceptable manner.

### **New energy production technologies**

- 4.97 Annex 4 of MPS1 includes guidance on new coal technologies and underground gas storage. It indicates that there are 3 main ways of recovering gas from coal to provide energy, namely extraction of coalbed methane, extraction of methane from coal mines and underground coal gasification.
- 4.98 The report 'UK Coal Resource for New Exploitation Technologies' (BGS/DTI, November 2004) examines the UK coal resources available for exploitation by the new technologies of Underground Coal Gasification (UCG), Coalbed Methane (CBM) production and Carbon Dioxide Sequestration. Carbon Dioxide Sequestration is a technology that is at a very early stage of development. Because of the major uncertainties surrounding this technology, no areas specifically suitable for it have been identified in the report.
- 4.99 As the Leicestershire and South Derbyshire Coalfields have no working mines, there is no Coal Mine Methane potential in these areas. The prospects for Abandoned Mine Methane and Coal Bed Methane in these Coalfields are also considered to be very poor. The outcropping coalfield areas are not considered to form a UCG resource due to the extensive nature of former underground working and the need to stand off from these workings, both vertically and horizontally.
- 4.100 The north-east Leicestershire Coalfield is not considered to have potential for CBM production. There are large areas in Eastern England that meet the criteria for UCG. The best areas occur mainly between Newark and East Retford and extend to the north west of Gainsborough. Further south, good potential exists but tends to be

patchy and isolated, surrounded by areas of poor potential. There are also large areas where the UCG potential is unverifiable, particularly to the south-east of Nottingham, between Newark, Sleaford and Lincoln. UCG resources may therefore be present in this area and warrant further investigation.

- 4.101 DTI has examined the opportunities for UCG and its potential contribution to the future UK energy supply. If this source of energy is to be exploited then an experimental UCG development would need to be undertaken. UCG development presents a number of actual and potential impacts that need to be addressed and mitigated. Many of these are common to other types of mineral and industrial operations,
- 4.102 Given that new coal technologies are still evolving, it would be difficult to predict their viability or the impacts associated with them. The MDF should be in a position to address any such application should proposals for these types of development be made to the County. The preferred option is, therefore, to draw up criteria-based policies for the determination of applications for such developments.

## 5.0 Mineral Safeguarding Areas

### Background

- 5.1 The Sustainability Appraisal of the MDF has developed a number of objectives against which to evaluate emerging policies and proposals. One of these objectives is 'to minimise the irreversible sterilisation of mineral reserves'.
- 5.2 A set of strategic objectives for minerals development have also been developed which implement and deliver the MDF's spatial vision and can be translated into a spatial strategy and core policies. One of the preferred minerals development objectives was to safeguard mineral resources by encouraging the most efficient use of high quality minerals, the minimisation of waste materials and avoiding their sterilisation.
- 5.3 Comments received in respect of this objective consider that safeguarding of minerals from other forms of development should form a separate objective. The efficient use of minerals and the minimisation of mineral waste are considered to be matters which do contribute directly to safeguarding. The County Council acknowledges that this objective should be reworded to reflect national objectives for minerals planning as set out in MPS1. These include 'to safeguard mineral resources as far as possible'.
- 5.4 The Preferred Options Document (July 2006) indicated that the following options had been considered for safeguarding mineral resources:
- Option 1:** have a general policy;
  - Option 2:** identify areas to be safeguarded;
  - Option 3:** identify areas which the mineral planning authority requires to be consulted on;
  - Option 4:** have no policy to safeguard mineral resources.
- 5.5 The preferred approach was a combination of Options 1 and 3. Preferred Policy 7 provided a general policy which seeks to safeguard mineral resources. Preferred Policy 8 aimed to control development that may cause significant sterilisation within Minerals Consultation Areas, which were proposed to be shown on the Proposals Map.

- 5.6 The Sustainability Appraisal (June 2006) indicates that these preferred policies would have a significant positive effect on SA objective 12 (minimise the irreversible sterilisation of mineral reserves) but a slightly negative effect on SA objective 18 (promote sustainable economic growth in Leicestershire) due to the uncertain effect on the potential alternative use of land.

## Government Guidance

- 5.7 Since the Preferred Options document was produced, the Government has published (in November 2006) revised national mineral planning policy in the form of Mineral Policy Statement 1, "Planning and Minerals" (MPS1), and an accompanying Good Practice Guide. MPS1 sets out national policy, whilst the Good Practice Guide provides more informal advice.
- 5.8 One new feature of MPS1 is a requirement for planning authorities to define Minerals Safeguarding Areas (MSAs) in their development plans. This is in addition to the previous, and continuing, requirement for Mineral Consultation Areas (MCAs). MSAs are intended to provide a stronger degree of protection to mineral-bearing sites than MCAs, which are basically a mechanism to ensure consultation of the Mineral Planning Authority prior to any other form of development taking place.
- 5.9 MPS1 (paragraph 13) states that planning authorities should:
- *define Mineral Safeguarding Areas (MSAs) in [development plans], in order that proven resources are not needlessly sterilised by non-mineral development, although there is no presumption that resources defined in MSAs will be worked;*
  - *encourage the prior extraction of minerals, where practicable, if it is necessary for non-mineral development to take place in MSAs;*
  - *in two-tier planning areas, include policies and proposals to safeguard mineral resources within MSAs in county [development plans] and show MSAs in district [development plans]. Counties should define Mineral Consultation Areas (MCAs) based on their MSAs. MCAs should also be reflected in district [development plans]. Where a planning application is made for non-mineral development within a MCA, the district should consult the county on the application;*

*- district councils responsible for spatial planning of land defined in MSAs should not normally include policies and proposals in their [development plans] for non-minerals development in those areas, or sensitive development around safeguarded mineral areas, where such policies would affect the potential for future extraction of minerals;*

5.10 The Good Practice Guide says (paragraph 32):

*The planning system has an important role to play in safeguarding proven deposits of minerals which are, or may become, of economic importance within the foreseeable future, from unnecessary sterilisation by surface development. It is therefore important that mineral safeguarding areas (MSAs) are identified and that appropriate safeguarding policies are incorporated in [development plans]. MSAs can be defined objectively using the best available geological and minerals resource information, including that published or held by the British Geological Survey or made available by the industry. However initially defined, areas will generally need to be refined in discussion with the industry and other stakeholders. It should be kept in mind that, in addition to proposed development within a MSA, incompatible development that is allowed close to a MSA may also lead to sterilisation of part of the reserves. It may be appropriate to develop policies for prior extraction of minerals, where practicable, within safeguarded areas.*

5.11 MSAs are a new requirement. Given the strength of the MPS1 policy requirement, it is clear that MSAs need to be addressed in the Minerals Development Framework.

## **Mineral Resources within Leicestershire**

5.12 In 2004, the County Council commissioned the British Geological Survey (BGS) to provide broad geological resource information for mineral resources within Leicestershire together with updated MCAs. Mineral resource data was based on those published by the BGS report 'Mineral Resource Information in Support of National, Regional and Local Planning: Leicestershire' (Harrison et.al., 2002). Based on this information, updated MCAs were produced, which have been circulated to District Planning Authorities within the County. This involved a combination of expert geological opinion and knowledge on the extent of mineral resources, consultation with the minerals industry,

taking into account settlement areas and buffering of MCAs. The final report can be viewed via the following weblink:

[http://www.mineralsuk.com/britmin/cr\\_05\\_034n.pdf](http://www.mineralsuk.com/britmin/cr_05_034n.pdf) .

## Preferred Methodology for Safeguarding Mineral Resources

5.13 The County Council intend to use the work carried out by BGS to assess which mineral deposits are of economic importance. This assessment has made the following assumptions:

- Jurassic ironstones in the county are not considered to have any future economic significance as a source of iron. Whilst they could be worked as a source of building stone or low quality aggregate, they are not considered to be of current or future economic importance.
- Sand and gravel resource areas are taken from the Mineral Resources map of Leicestershire and Rutland, with some additional small areas included to take account of new geological mapping carried out by BGS.
- the area of 'shallow coal' is as defined on the Coal Resources map of Britain.
- Brickclay resources in Leicestershire (principally the Triassic Mercia Mudstone) are extensive and it is not considered that it is justified to safeguard large areas of the outcrop. MSAs will consequently be drawn around existing sites taking account of the resource and existing infrastructure and using clear physical boundaries wherever possible.
- A MSA for gypsum will be drawn around the existing planning permission at Barrow. Additional outcrops of the mined horizon (Tutbury Gypsum) will be inferred based on recent mapping and a potential future extension into Leicestershire of the Nottinghamshire Marblegis Mine identified.
- No MSAs will be defined for hydrocarbons as prospects can only be identified after extensive exploration activity.

5.14 The boundary of the MSA will be extended beyond the area of the resource to prevent residential development from encroaching on a mineral extraction to the extent that the amenity of residents could be affected by noise, visual intrusion or blast vibration. A buffer zone of 200m will be adopted around the identified sand and gravel resource areas and 500m around limestone resources to ensure an adequate

safeguarding margin. MSAs for igneous rock resources will be defined to take account of the substantial thicknesses of overburden associated with their extraction.

## Preferred Safeguarding Option

- 5.15 The preferred approach to mineral safeguarding is to define MSAs around all deposits of sand and gravel, limestone, igneous rock, shallow coal, fireclay, brickclay and gypsum in Leicestershire that are considered to be of current or future economic importance. The preferred Mineral Safeguarding Areas within Leicestershire are shown on the Proposals Map, which can be viewed on the County Council's website (insert weblink).
- 5.16 In order to control development within MSAs, the preferred approach is to include the following Development Control Policy:

*Planning permission will not be granted for any form of development within a MSA that is incompatible with safeguarding the mineral unless:*

- *The applicant can demonstrate to the satisfaction of the LPA that the mineral concerned is no longer of any value or potential value; or*
- *The mineral can be extracted satisfactorily prior to the incompatible development taking place; or*
- *The incompatible development is of a temporary nature and can be completed and the site restored to a condition that does not inhibit extraction within the timescale that the mineral is likely to be needed; or*
- *There is an overriding need for the incompatible development;*  
*or*
- *It constitutes 'exempt development', namely householder applications; development already allocated in a statutory plan; infilling in existing built up areas.*

## 6.0 Spatial Maps