British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Communities and Local Government

A guide to mineral safeguarding in England

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Mineral Industry Research Organisation

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Department for Environment Food and Rural Affairs

Executive summary

A key aspect of sustainable development is the conservation and safeguarding of non-renewable resources, such as minerals, for future generations. The UK is endowed with a wide range of indigenous minerals but these natural resources are finite. With increased pressure on land-use in the UK, there is a need to ensure that these natural resources are not needlessly sterilised by other development, leaving insufficient supplies for future generations. Safeguarding will also help ensure that the planning system retains the flexibility to identify sites which have the least impact on the environment. Safeguarding is the term that encompasses the process necessary to ensure that outcome.

Minerals Policy Statement 1: Planning and minerals, published in November 2006, aims to prevent unnecessary sterilisation of mineral resources by providing national policy for mineral safeguarding. The 'Guide to mineral safeguarding' is designed to complement this policy which introduces an obligation on all Mineral Planning Authorities to define Mineral Safeguarding Areas. Defining Mineral Safeguarding Areas carries no presumption that the resource will be worked. The guide provides guidance on how current mineral safeguarding policy can be complied with and puts forward a relatively simple step-by-step methodology for delineating Mineral Safeguarding Areas, together with examples of policies through which they would have effect. When linked to appropriate local planning policies, Mineral Safeguarding Areas should ensure that mineral resources are adequately and effectively considered in making land-use planning decisions.

The guide is intended for use principally by those involved in the preparation of mineral development plan documents and in deciding planning applications. It will also be of interest to Regional Planning Bodies in the preparation of Regional Spatial Strategies. Developers working in areas where the presence of a mineral resource may need to be considered may also find this guide useful.

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BRITISH GEOLOGICAL SURVEY

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A guide to mineral safeguarding in England

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Contents

Background

The UK is endowed with a wide range of indigenous minerals. Minerals are important national resources and adequate and steady supplies are vital for developing and sustaining our modern society. They play a fundamental role in underpinning the growth of many sectors of the UK economy and in contributing to the UK's high standard of living. Aggregates and other construction materials such as cement raw materials, brick clay and gypsum, are vital to the construction industry which maintains and enhances our built environment and transport infrastructure. Industrial minerals such as salt, kaolin, ball clay, silica sand and fluorspar provide the essential raw materials and chemical feedstock which underpin all manufacturing industry, as well as agriculture. Building stones are needed for repairing historic structures and for maintaining local distinctiveness with appropriate new build. Coal is an important energy resource.

However, these resources are finite and we must use them in a way that leaves sufficient supplies for tomorrow. Minerals can only be worked where they occur so with increased pressure on land use in the UK we must ensure that they are not needlessly sterilised by other development. Safeguarding is the term that encompasses the processes and mechanisms necessary to ensure that outcome. The marked differences in the geological occurrences, properties, markets, and supply and demand for minerals give rise to different land-use planning implications and safeguarding considerations.

It is the purpose of the planning system to address competing demands on land-use, but until recently that system gave little effective weight to the protection of minerals resources in comparison with that afforded to environmental assets. As a result, there have been many instances where minerals were needlessly sterilised.

Minerals Policy Statement 1 (MPS1), published in November 2006, aims to reduce similar problems in the future by providing a stronger national policy for safeguarding minerals. MPS1 introduces an obligation on all Mineral Planning Authorities (MPAs) to define Mineral Safeguarding Areas (MSAs), with an associated obligation on district councils to show MSAs in district Development Plan Documents (DPDs). When linked to appropriate local planning policies, MSAs should ensure that mineral resources are adequately and effectively protected when making land-use planning decisions. The presence of an MSA does not preclude other forms of development. MSAs simply provide an alert to the fact that minerals may be sterilised by the proposed development and that this should be taken into account by the planning process.

Protection of mineral resources from unnecessary sterilisation by other types of development will not just ensure supplies for the future. Safeguarding will also help ensure that the planning system retains the flexibility to identify areas which have the least impact on the environment.

Purpose of this guide

This 'Guide to Mineral Safeguarding' provides information on how current mineral safeguarding policy, specifically MPS1, can be complied with. As such, the guide should be used alongside MPS1 and the associated Practice Guide, and other relevant mineral planning policy and guidance. MPS1 provides the overarching planning policy document for all minerals in England. Guidance on safeguarding relating to specific minerals is also provided in MPS1 Annex 2: Brick Clay (Para 3.1), MPS1 Annex 3: Natural building and roofing stone (Para. 3.1 to 3.5), MPG 15: Provision of silica sand in England (Para. 53 and 54) and MPG 3: Coal mining and colliery spoil disposal (Para. 38).

The guide provides advice on how to define MSAs and to prevent the unnecessary sterilisation of minerals, as required by MPS1. However, it is up to each MPA to decide upon the most effective way of achieving the MPS1 objectives, consistent with local physical, environmental and planning considerations.

Part 1 of this guide provides guidance on the use and purpose of MSAs including who should define them and how they should be integrated into the current planning system. It puts forward a relatively simple step-by-step methodology for delineating MSAs, together with examples of policies through which the MSAs would have effect. Part 2 provides a toolkit to provide help and guidance relating to delineation of MSAs within the framework of MPS1. The toolkit includes a case study which illustrates how Staffordshire County Council is putting an effective safeguarding system in place within the framework proposed in this guide. This demonstrates the working method, the processes to follow and the data required to complete the process.

This guide has been prepared after careful study of existing policy and practices. The results of that study were combined with practical knowledge of the mineral planning process in England provided by experienced planning practitioners, along with consultation with key stakeholders in the minerals industry, local and regional planning, government departments and non-governmental organisations. The overall aim was to learn from areas of success and weakness in the existing system in order to put forward a practical guide on how minerals can be safeguarded effectively.

The guide is intended for use principally by those involved in the preparation of development plan documents and in deciding planning applications, i.e. MPAs and Local Planning Authorities (LPAs). It will also be of interest to Regional Planning Bodies in the preparation of Regional Spatial Strategies. It should also be of interest to developers working in areas where the presence of a mineral resource may need to be considered.

Mineral Safeguarding Areas

What are MSAs?

Paragraph 10 of MPS1 requires Regional Planning Bodies, Mineral Planning Authorities and Local Planning Authorities to carry out their functions in relation to the preparation of plans and in relation to development control in accordance with the national policies for minerals planning. One element is to:

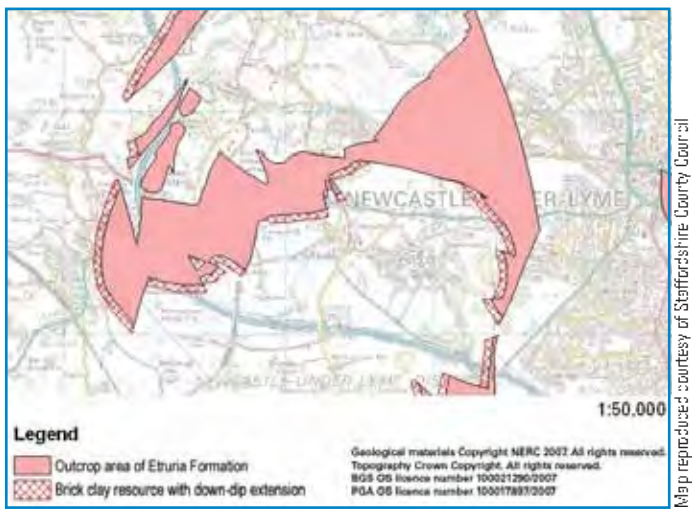
'. . . define Mineral Safeguarding Areas (MSAs) in LDDs, in order that proven resources are not needlessly sterilised by non-mineral development, although there is no presumption that resources defined in MSAs will be worked'

(MPS1 Planning and Minerals: Para.13)

MSAs are areas of known mineral resources that are of sufficient economic or conservation value (such as building stones) to warrant protection for generations to come. The level of information used to prove the existence of a mineral resource can vary from geological mapping to more in depth geological investigations. The BGS Mineral Resource linework, for example, shows the surface extent of mineral resources inferred from available geological information and can be used to identify proven resources, for the purpose of defining MSAs. Part 2 of this guide provides guidance to MPAs on how to define MSAs in accordance with MPS1 and Part 3 provides examples of what MSAs look like. Figure 1 below shows MSAs defined around brick clay resources in Staffordshire MPA.

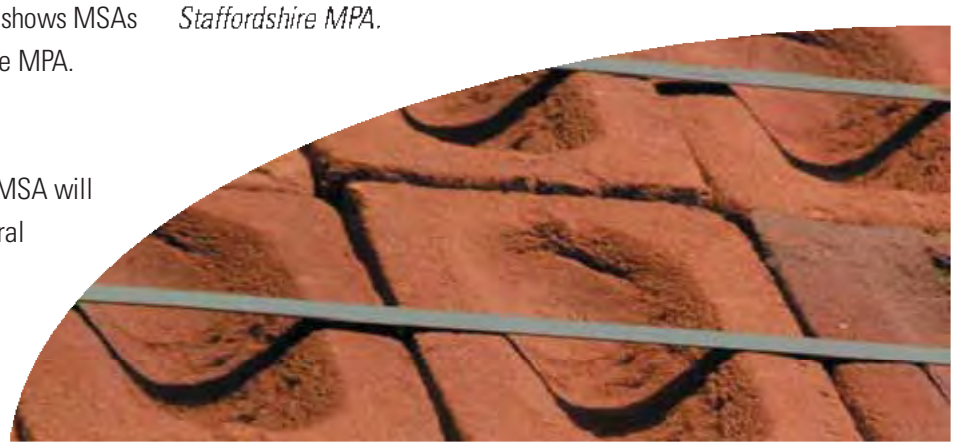
What is the purpose of MSAs?

There is no presumption that any areas within an MSA will ultimately be environmentally acceptable for mineral extraction. Areas of Search, Preferred Areas, and Specific Sites are designated for that purpose. The purpose of MSAs is not to preclude automatically other forms of development, but to make sure that mineral resources are adequately and effectively considered in land-use planning decisions. This process should help ensure that like other finite resources, minerals are not needlessly sterilised. MSAs will make relevant parties aware of the presence of mineral resources and will make specific local planning policies applicable to those areas.



Map reproduced courtesy of Staffordshire County Council

Figure1. MSAs defined around brick clay resources in Staffordshire MPA.

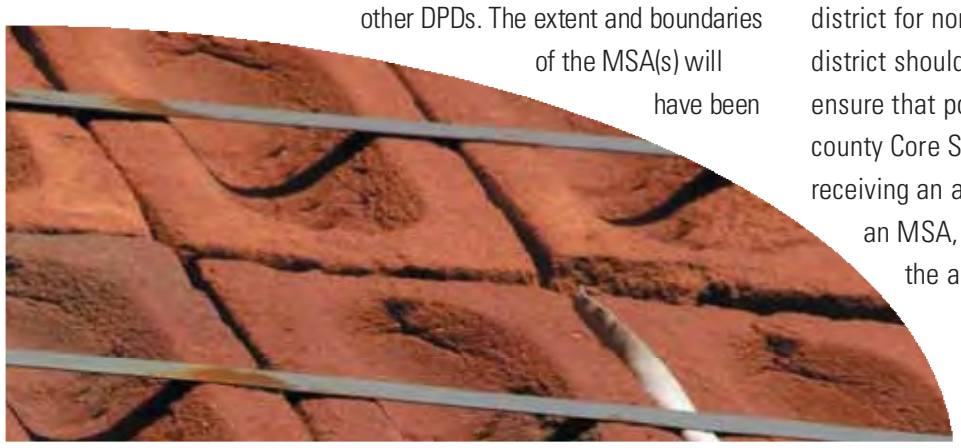


Who is responsible for defining MSAs?
All MPAs, both unitary and two-tier authorities, must include policies to safeguard mineral resources and delineate MSAs in their DPDs. This will alert prospective applicants for planning permission to the existence of valuable mineral resources and indicate where specific local mineral safeguarding policies may apply.

Whilst District Councils do not define MSAs they are obliged to show them on their proposals maps once they have been defined and adopted by the County Council (MPS1 Para. 13).

The definition of MSAs in DPDs
Strategic mineral safeguarding policies should be set out in MPAs' core strategies including for example, the objective of the safeguarding policy, how MSAs will be defined and the policies through which they have effect (see Part1 1, Step 4). The broad extent of an MPA's MSAs (based on the BGS resource maps and supplemented by information from the minerals industry and any other sources) should be shown on the key diagram accompanying the core strategy. The MSA boundaries should be delineated more precisely, and on an OS base, on the Proposals Map accompanying MPAs' site allocations or other DPDs, where they can be shown alongside other information such as areas of search and preferred areas (PPS12, Para. A2). MSAs, if required, can be defined in the core strategy so long as the definition forms part of a strategic policy approach adopted by the MPA. In such a situation, the MPA would need to show the MSA boundaries on a submission proposals map to accompany the core strategy, as advised, in general terms in PPS12 (Para. 2.13). In county or unitary MPAs any development control-type safeguarding policies, which should have a local distinctiveness, relating to the MSA(s) can be set out in a separate development control policies DPD, unless the core strategy itself includes a limited suite of DC policies.

In two-tier areas, the precise extent of county MSAs should be shown on the adopted Proposals Map for the relevant districts (Para. 2.22 of PPS12, MPS1, Para. 13), with an explanation in the text accompanying the districts' own site allocations or other DPDs. The extent and boundaries of the MSA(s) will have been considered, and been subject to independent examination, during the course of the preparation of the county's own DPDs.



District Councils should not include policies relating to the definition and objective of mineral safeguarding in their DPDs as these should be covered in county DPDs. Districts should, however, make reference to the definition of an MSA(s) and MPA mineral safeguarding policies within the body of their DPDs and in their own appropriate (e.g. DC-style) policies. For example, a district DPDs could include policies that set out the general approach that the district will take, when determining proposals for non-minerals development within, or close to, MSAs or existing mineral workings. Such policies should acknowledge the procedures for consulting the MPA on the existence and extent of mineral resources present and considering the case for prior extraction of minerals, where appropriate.

Irrespective of the objective of safeguarding policies a district or unitary council must consider possible mineral sterilising development proposals in the context of all policies and proposals for the area in question.

Development Control Policies
MPAs may outline controls on development in MSAs against which planning applications for the development and use of land and buildings will be considered (see Part 1, Step 5 sets out a sample development control policy). The use of such policies will ensure that development accords with the objectives set out in the core strategy. Development control policies may be included as part of the core strategy or in a separate a Development Control Policies DPD.

Districts Councils should avoid including policies and proposals in their DPDs for non-mineral development in MSAs or sensitive development around safeguarded minerals development, where such policies would affect the potential for future extraction of minerals (MPS1, Para. 13). Where policies and proposals in the district DPD are in existence prior to the definition of MSAs by the MPA, or where new policies and proposals are put forward by the district for non-mineral development within an MSA, the district should consult with the county (MPS1, Para. 13) and ensure that policies relating to safeguarding set out in the county Core Strategy are complied with. Similarly, on receiving an application for non-mineral development within an MSA, the district should consult with the county on the application.

Part 1: Step-by-step approach to creating an effective safeguarding system

MPS1 sets the safeguarding of minerals resources as one of the national objectives for minerals planning and to that end, obliges MPAs to define MSAs. MSAs should be based upon the best available geological and minerals resource information (MPS1 Practice Guide, Para. 32). Beyond that, MPS1 leaves considerable flexibility to interpret both how those areas should be defined and how policies should be included in DPDs to ensure that MSAs are effective in safeguarding mineral resources from sterilisation.

It is suggested that the following six steps should be followed by MPAs, both unitary and two-tier, and district planning authorities where relevant, to create an effective safeguarding system for minerals. More detailed information and advice are available in the 'Toolkit' section of this report (Part two).

Key stakeholders, including communities, should be informed at the outset and kept informed during the process of creating an effective safeguarding system. This will help alleviate unnecessary misunderstanding about its purpose, in particular to emphasis that there is no presumption that resources defined within MSAs will be worked.

STEP ONE: Assess what is the best geological and resource information available for the authority area.

MSAs should be based on the best geological information existing at the time the designation process takes place. BGS Mineral Resource Maps are now available for all parts of England and are adequate for the purpose of defining MSAs. However, more detailed information may be available, particularly from the minerals industry who may have carried out geological investigation for commercial reasons. Consultation with industry should therefore be undertaken at this stage to make them aware of the exercise and opportunities to them to provide additional mineral resources information (see Part 2, Section 1a and 1b).

STEP TWO: Decide which minerals within the authority area are or may become of economic importance in the foreseeable future.

This is likely to be based upon local knowledge of historical mineral extraction in the area but more detailed information related to the economics of

specific minerals may be available. Using the BGS Mineral Resource Maps and Minerals Planning Factsheets reduces the need for MPAs to make difficult judgements on what resources may or may not be important in the future.

STEP THREE: Decide how the physical extent of the resource areas to be safeguarded should be determined.

The issues here vary with the extent and configuration of the geological deposit. If the deposit is large it may not be appropriate to safeguard the entire resource, for example, the chalk resource in Hampshire. If it is in the form of dipping strata, a judgement may have to be made as to the depth below the surface at which extraction will become uneconomic (see case study, inset 1). Such refinements should be undertaken in discussion with the industry, as they may hold additional data and often have the best local knowledge. Any modifications made by an MPA to the BGS mineral resource outlines, such as decisions not to include a particular resource or reduce or extend a resource boundary, will need to be based on robust and credible evidence to withstand the scrutiny of a public examination.

STEP FOUR: Incorporate the outcome of these processes into a planning policy on the identification/designation of MSAs for inclusion in the development plan document. The accompanying text should set out clearly the assumptions that have been made in order to define the MSAs.

Example of Core Strategy policy:

Mineral Safeguarding Areas will be defined around all deposits of sand, gravel, brick clay and limestone in Exfordshire that are considered to be of current or future economic importance.

Example of accompanying text:

In assessing which mineral deposits are of economic importance, the following assumptions have been made:

- *the BGS map 'The Mineral Resource map for Exfordshire (1999)' has been accepted as the best source of information for determining the occurrence and lateral extent of minerals in the County*
- *the remaining coal deposits in the county are not viable for surface extraction*
- *limestone extraction will only be viable to a depth of 100 m below the surface*
- *alluvial sand and gravel will not be economically viable if the deposit is less than 2 m deep*
- *clays in the White River valley have not been considered as being of economic importance because they are not of brick making quality.*

An MPA may wish to extend the boundary of the MSA beyond the area of the resource for various reasons such as:

1 to allow for engineering the slope of the walls of the excavation or

2 to prevent proximal sterilisation by, for example, preventing residential development from encroaching on a mineral resource to

the extent that the amenity of residents could be affected by noise, visual intrusion or blast vibration should the resource be worked in the future.

Again, the rationale behind any additional areas should be explained clearly in the accompanying text and distances of extensions should be clearly and soundly justified.

STEP FIVE: Decide how MSAs can be used most effectively to safeguard mineral resources in the specific authority area including defining those applications which will be exempt because of their minor nature, from consideration in the process.

In most cases, a development control policy along the following lines would be appropriate in county, unitary and district DPDs with the MSA defined on the relevant proposals map.

Planning permission will not be granted for any form of development within a Mineral Safeguarding Area 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*
- *unless it is exempt development set out in the accompanying paragraph.*

STEP SIX: Decide whether Mineral Consultation Areas (MCAs) should be defined in addition to MSAs to ensure that mineral interests are taken into account when considering proposals for non-minerals development.

MCAs are simply a mechanism which aims to ensure that in two-tier authority areas consultation takes place between county and district planning authorities when minerals interests could be compromised by proposed non-minerals development. The definition of MCAs is not obligatory but consultation within a defined MCA is. MCAs are an additional useful method of supporting minerals safeguarding.

The level of safeguarding of mineral resources that MCAs can provide on their own is not comparable to that which can be afforded through an MSA-based system because:

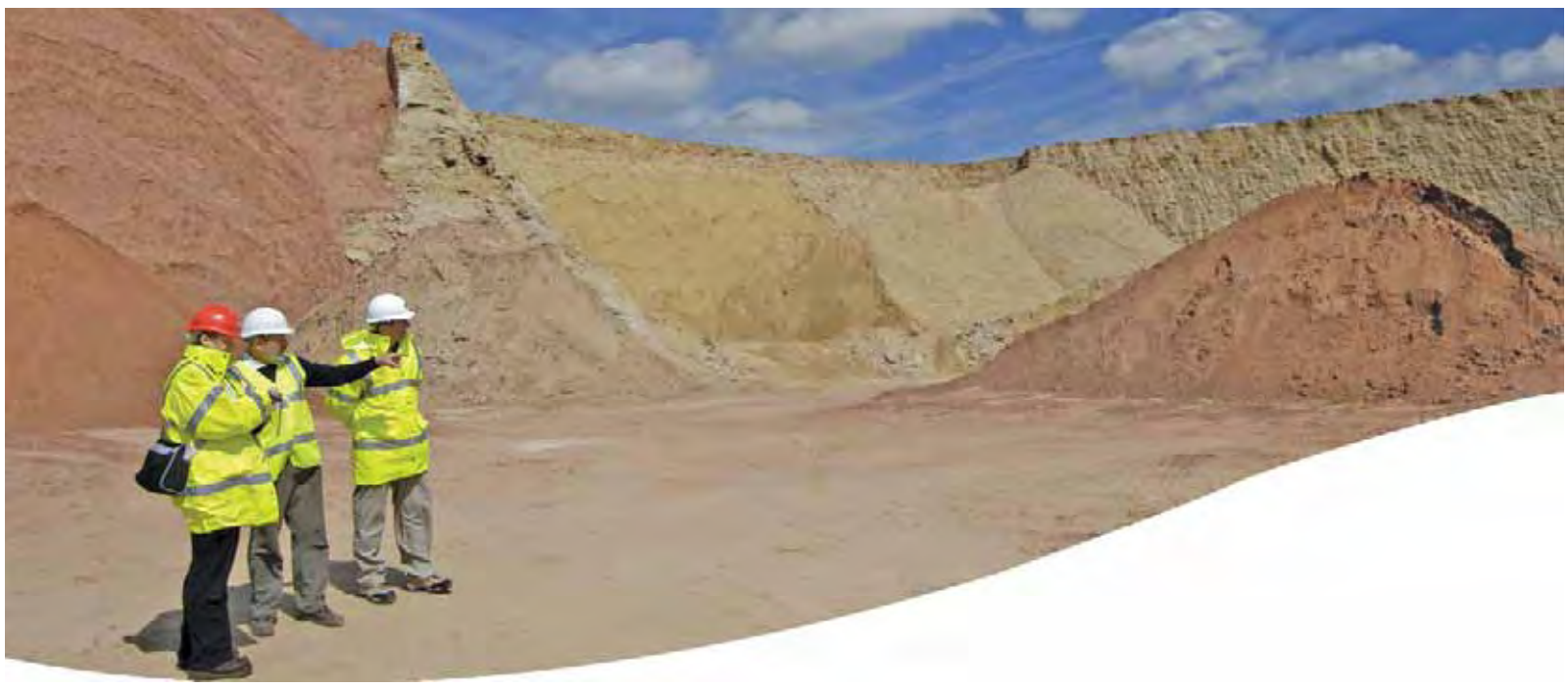
- their definition is not obligatory
- the legislation does not provide for their use in unitary authority areas
- they do not carry any presumption against permission being granted for development which is incompatible with mineral extraction
- there is virtually no sanction if they are ignored when granting planning permission.

However, when MCAs are used in association with MSAs, it facilitates discussion taking place between the respective planning authorities when non-minerals developments are proposed in safeguarded mineral resource areas.

MCAs also give an additional measure of safeguarding to sites related to minerals infrastructure, such as wharves and railway sidings, that cannot be protected by MSAs. MSAs are only to be defined to protect the resource itself. Appropriate safeguarding policies should appear in the DPDs of MPAs, and can be reflected in those produced by district councils. MCAs can be updated more easily than MSAs as their statutory basis is outside that of the development framework. They can therefore be more responsive to the latest information on geology and mineral economics.

A regularly updated and properly used set of MCAs can complement the protection of minerals interest facilitated by MSAs. However, if an MPA is of the opinion that there is no purpose to be served within their area by maintaining both MCAs and MSAs, the obligatory consultation element of MCAs could exceptionally be transferred to MSAs by a planning policy in a district council's DPDs, worded along the following lines:

Planning permission will not be granted for any development within an MSA unless the MPA have been formally consulted on the proposal.



Part 2: Safeguarding toolkit

The safeguarding toolkit is intended to provide help and guidance relating to the delineation of MSAs within the framework of MPS1. It comprises a number of separate components serving different but complementary purposes, and is intended to be of practical use when carrying out a safeguarding exercise. The toolkit includes a case study illustrating how Staffordshire County Council is putting an effective safeguarding system in place within the framework proposed in this guide.

The various components that comprise the toolkit are:

1. How to define MSAs in accord with MPS1 guidance.
2. Linking MSAs to policy at a regional and local level.
3. Case study illustration how MSAs can be defined in practice from Staffordshire County Council.

1. How to define MSAs in accord with MPS1 policy and guidance

This section builds upon policy and guidance provided by MPS1 on how to define MSAs and what to consider, including sources of mineral resource information and measures to take to prevent sterilisation by proximal development. The delineation of MSAs can be summarised into the following three steps;

a. Using the best available geological and mineral resource information

'. . . MSAs can be defined objectively using the best available geological and mineral resources information, including that published or held by the British Geological Survey or made available by the industry' (MPS1 Practice Guide, Para. 32).

Steps in defining MSAs

1. Use the best geological and mineral resource information

↓

2. Refine resources in discussion with industry

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3. Account for sterilisation by proximal development

The delineation of MSAs requires up-to-date and impartial information on the location of mineral resources. The identification and delineation of mineral resources is somewhat imprecise as it is limited not only by the quantity and quality of data currently available, but also involves predicting what might, or might not, become economic to work in the future. The assessment of mineral resources is, therefore, a dynamic process which must take into account a range of factors. These include geological reinterpretation as additional data becomes available, as well as the continually evolving demand for minerals, or specific qualities of minerals, due to changing economic, technical and environmental factors. Consequently areas that are of potential economic interest as sources of minerals may change with time.

Whilst the geological interpretation and economic parameters may change over time, the actual geology, i.e. the true configuration of the feature that constitutes the resource, does not. This suggests most strongly that the delineation of MSAs should be based principally on the best available geological information available at the time that the process of defining MSAs takes place.

A good starting point for defining MSAs is the impartial DCLG/ BGS 'Counties series' Mineral Resources Maps (Figure 2). These maps identify those resources that the BGS consider to be of economic importance and are thus, in the main, worthy of safeguarding. These maps are accompanied by a short report summarising key features of individual mineral resources, production and uses. Using this data which is available digitally, through licence, reduces the need for MPAs to make difficult judgements on what resources may or may not be important in the future.

The DCLG/BGS mineral resource maps are primarily based on mapping acquired at different times. Where available, Mineral Assessment Reports (MAR) data is incorporated. MAR data was acquired through a programme of systematic surveying of sand and gravel resources, and to a lesser extent limestone, conglomerate and celestite. MAR surveys were undertaken by the BGS between 1966 and 1985, in selected parts of the UK. The maps only identify resources in the superficial deposits where they are not concealed, except where the area has been subject to a MAR, and bedrock

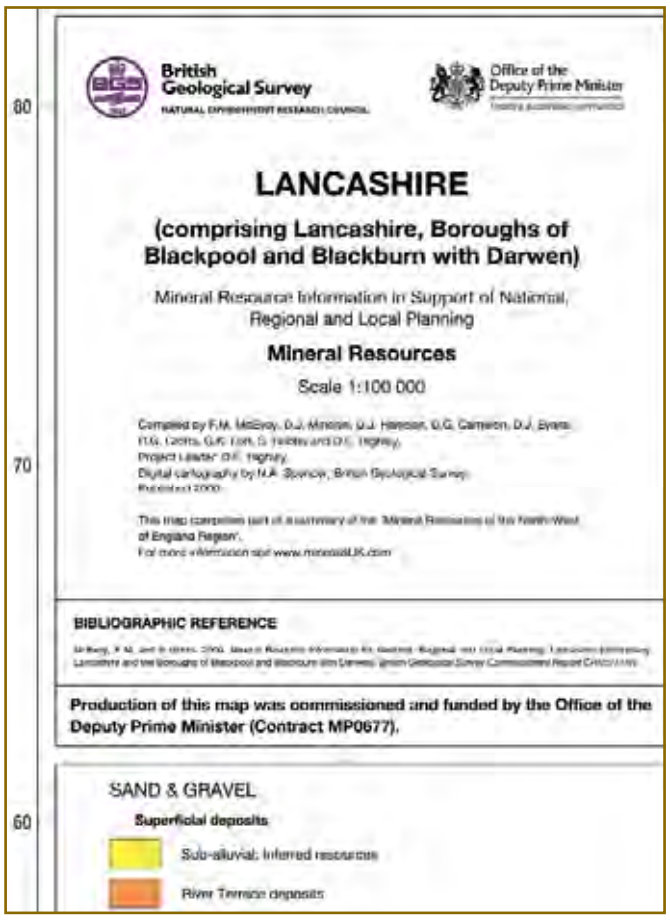


Figure 2. Mineral resource map for Lancashire.

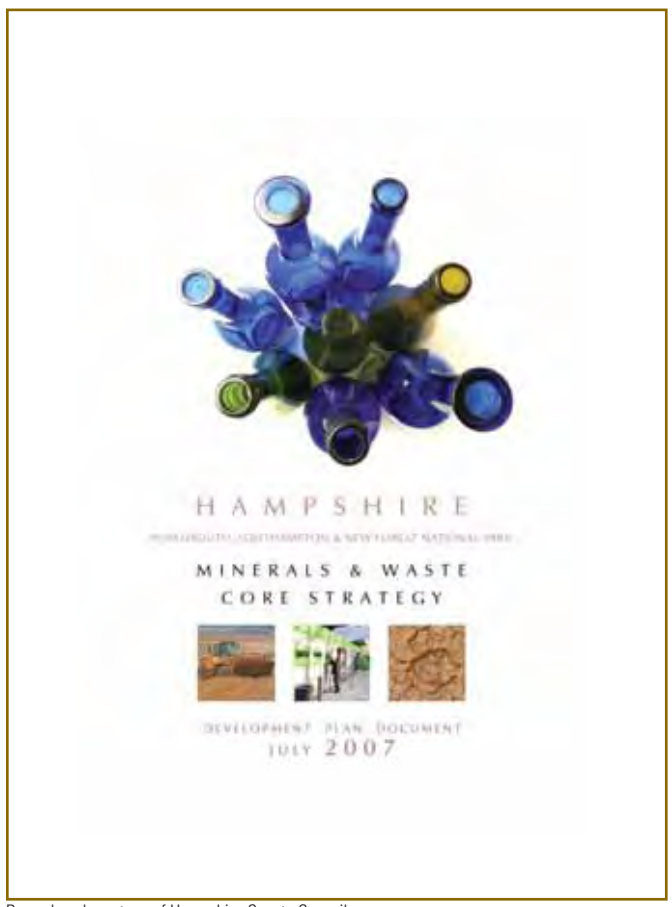
resources concealed by superficial deposits but not by overlying bedrock formations. Whilst every effort has been made to ensure consistency of approach in defining the mineral resources, the level of detail reflects in part the age of the mapping and availability of MAR data.

Mineral resources should only need updating if the geological boundaries of the resource were refined as a result of further information made available by industry or more modern geological mapping. They may also need reviewing if there are economic factors that result in a change in demand for a particular mineral.

b. Refining resources in discussion with the industry

'However initially defined, areas will generally need to be refined in discussion with the industry and other stakeholders' (MPS1 Practice Guide, Para. 32).

Where available, other published and unpublished data should be incorporated. Examples of additional data sources include sand and gravel assessments undertaken by various organisations in the 1980s to early 1990s, funded by the Department of Environment. The industry often hold the



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best local knowledge about the quality and viability of working geological formations. Through their exploration programmes or by in pit exploration, they may be able to provide addition information about the location of resources not previously identified by the BGS or other studies. Conversely, they may provide data to refine and reduce resource areas. In some instances, mineral planning permissions occur in areas not identified as resource by the BGS. In such instances, discussions with the operators are important to determine the importance and extent of the resource for potential inclusion within the MSA. Occasionally, MPAs may also hold valuable geological and resource data gathered through exploration programmes within their area. Any additional information will enable the MPA to supplement the BGS mineral resource linework to provide more detailed or up-to-date information.

When defining MSAs, consideration might be given to other geological factors, in particular, the potential lateral extension of bedrock resources beneath both consolidated and unconsolidated strata. In such instances, the depth of economic working may need to be determined (See case study Inset Box 1) for inclusion within an MSA. This could be carried out in association with industry, or other specialists if necessary. Quality, thickness and extent of the resource might be considered together with variability of these between and within geological formations. It also worth noting that mineral resources may occur concealed beneath overburden and their presence may not be known.

Consultation with industry (operators direct and/ or trade bodies as appropriate) and other stakeholders could take many forms including by letter, email, telephone and where agreeable, on-site meetings. Irrespective of the level and form of consultation undertaken, key mineral operators within the MPA should be contacted to discuss the mineral resources the subject of safeguarding, local geological and operational considerations and to discuss other criteria for the delineation of MSAs, such as buffer widths, if applied (See case study Inset Box 3).

c. Accounting for possible sterilisation resulting from proximal development

'. . . 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 resource.' (MPS1 Practice Guide, Para. 32).

To safeguard a resource in its entirety, and to account for the inexact nature of mapped geological boundaries, particularly for more scarce or pressured mineral resources, it may be necessary to extend the MSA beyond the resource boundary. This approach is intended to safeguard the resource from the impact of 'proximal development'. Which resources to buffer and the width of the buffer, if applied, are best decided through consultation and will depend on the resource type and local considerations. Examples of determining buffer limits for different resource types is provided in the case study (inset box 3).

Importantly, mineral resources do not stop at administrative boundaries and MPAs should attempt to consider resources which straddle other MPAs and regions. A joined up approach to delineating MSAs would ensure that development in one MPA does not needlessly sterilise mineral resources in an adjacent MPA, as a result of proximity. This may be achieved by extending the buffer around a mineral resource into adjacent MPAs.

d. Taking into account other planning considerations

Effective safeguarding of mineral resources for the long term requires their definition be based principally upon the best available geological information. Mineral safeguarding should not be curtailed by other planning designations, such as urban areas and environmental designations without sound justification. Defining MSAs alongside environmental and cultural designations will ensure that the impact of any proposed development on mineral resources will be taken into account alongside other planning considerations. In urban areas, MPAs should define MSAs where they consider this will be of particular value. This might comprise highlighting the potential for extracting valuable or scarce minerals (such as Etruria Formation clays, coal or river terrace sand and gravel resources) beneath large regeneration projects, brownfield sites and reservoirs. In some instances however, definition of MSAs beneath urban areas may not be necessary. MSAs in urban areas may not be appropriate when resources occur extensively elsewhere within the plan area, such as chalk resources in Hampshire, or where working methods required are likely to be unacceptable in an urban environment, such as the extraction by blasting of hard rock.

2. Linking MSAs to policies

The essential platform upon which to build an effective safeguarding system is the inclusion of at least one appropriate safeguarding policy within DPDs. Figure 3 illustrates responsibilities for the production of the key documents required to ensure effective mineral safeguarding through each stage of the spatial planning process. At a regional level, RPBs should take mineral safeguarding into account in determining strategic planning considerations in the RSS for its region. In establishing regionally specific policies for safeguarding, they should consider which minerals are important to safeguard and include the criteria to be used by MPAs for selecting and determining areas of mineral resources worthy of safeguarding for the longer term. This could be broad and based on BGS mineral resource linework which is available for all the regions of England. RPBs should include policies for safeguarding and set out a strategy for managing it.

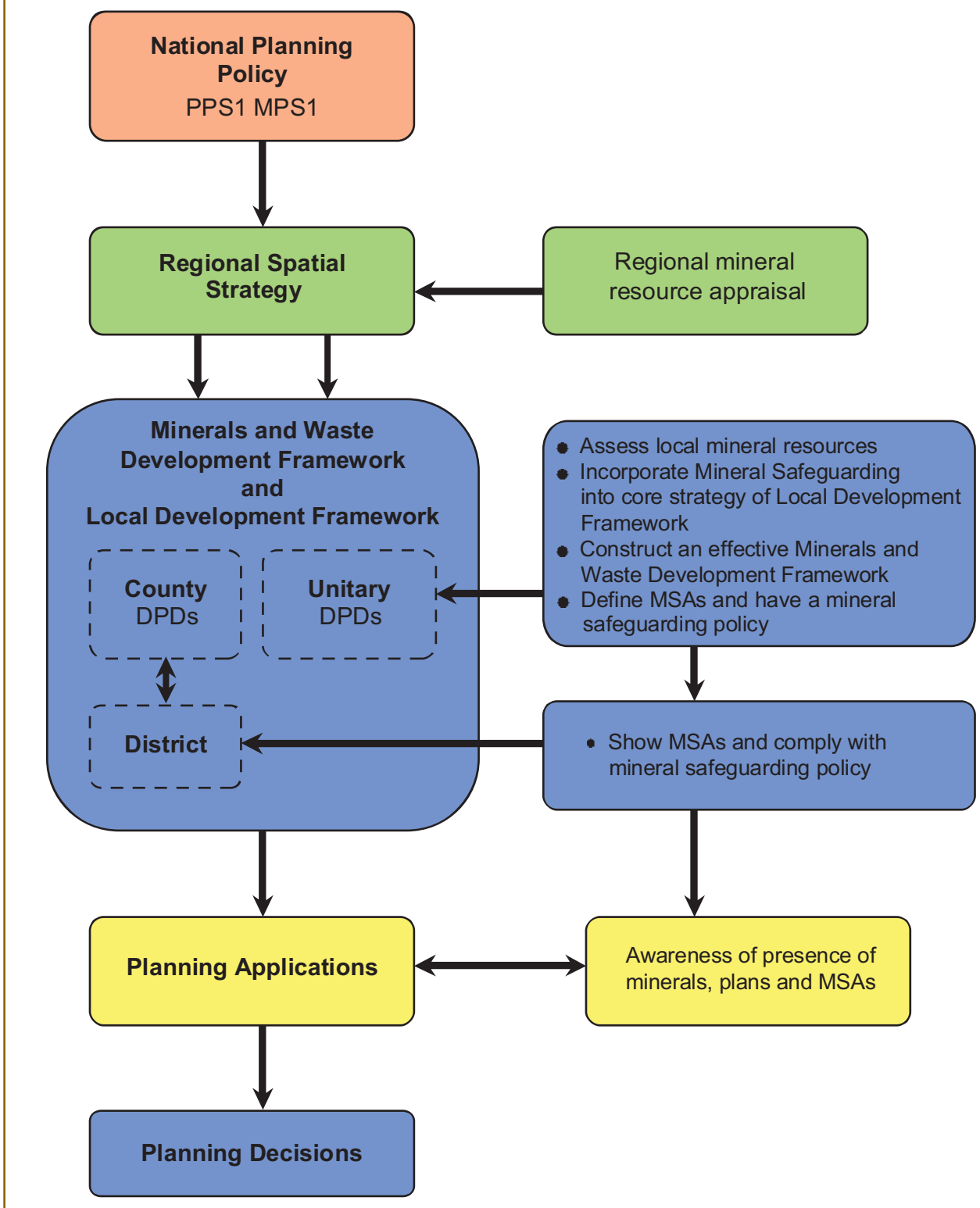
Similarly, MPAs should prepare DPDs that set out policies for the delineation of MSAs specific to their area and the control of development within these areas reflecting the approach to safeguarding in this guide and should show these areas on the relevant proposals map.

This policy should include a commitment to define MSAs and should set out the criteria that will be used to define them. An example of a core strategy policy for safeguarding, setting out which mineral deposits will be safeguarded, is proposed in Step 4 of the step-by-step approach to safeguarding. Policy for the control of development within MSAs should also be set out to guide the process of determining planning applications and to provide clear guidance to developers. A model Development Control policy is put forward in Step 5 of the step-by-step approach.

Although the intention is that local planning policy should convey a general presumption against incompatible development, the presence of an MSA does not necessarily preclude all development within these areas. Typical material considerations which might allow permission to be granted are included in the policy example. Where an application is made for development within an MSA, the planning authorities should consider if there are opportunities to relocate the development to more sustainable locations, where mineral resources would not be sterilised. If such locations cannot be identified, the developer could be requested to acquire further information to prove that the mineral present is, or is not, of economic value. This could be carried out through obtaining further data from the BGS, digging pits or drilling test holes. If a mineral of value is present, then the MPAs should consider the possibility of prior extraction of the mineral resource. In some instances the overriding need for the development may outweigh the need for the mineral.

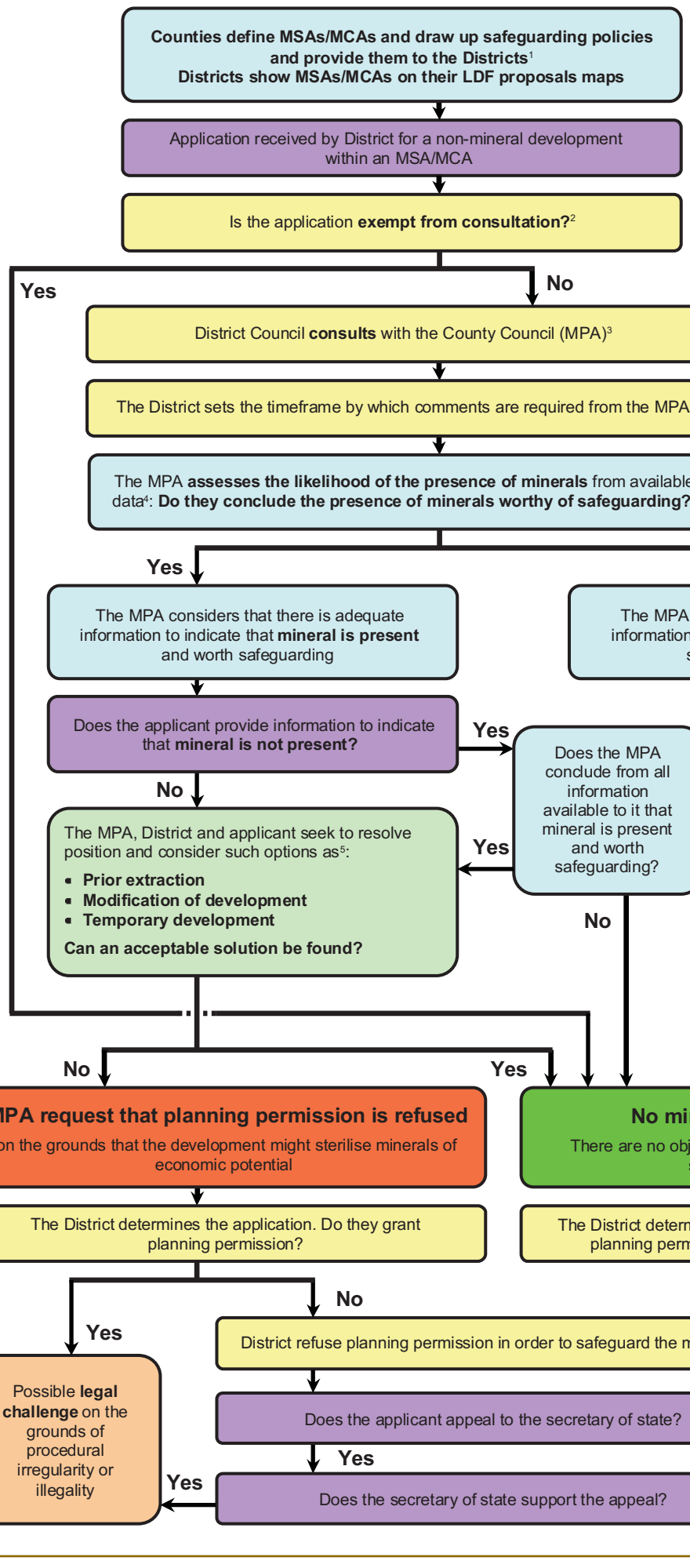
Figures 4 and 5 provide example flow diagrams showing the broad steps to be followed in both two-tier and single tier authorities upon receiving a planning application within an MSA. Mineral safeguarding is, however, just one of many factors which should influence the spatial planning process. The delineation of MSAs in DPDs, accompanied by an appropriate safeguarding policy, will provide the evidence base required to ensure that the decision-making process takes adequate account of mineral resource issues. However, those preparing RSSs and DPDs have to maintain a balance between considerations of mineral safeguarding and the various other sustainable development drivers, as well as regional targets for housing and economic growth.

Figure 3. Development planning process for mineral safeguarding



Legend: Responsibilities are indicated using colour-coding, as follows

Figure 4. Planning application guidance: Two-tier planning areas



Notes

1 Counties can transfer the obligatory consultation element of MCAs to MSAs through associated policies, removing the need to define MCAs.

2 Criteria for exemption could be outlined in a Minerals and Waste Development Framework and could include:

- Householder applications
- Developments already allocated in a statutory plan
- Infilling in existing built up areas.

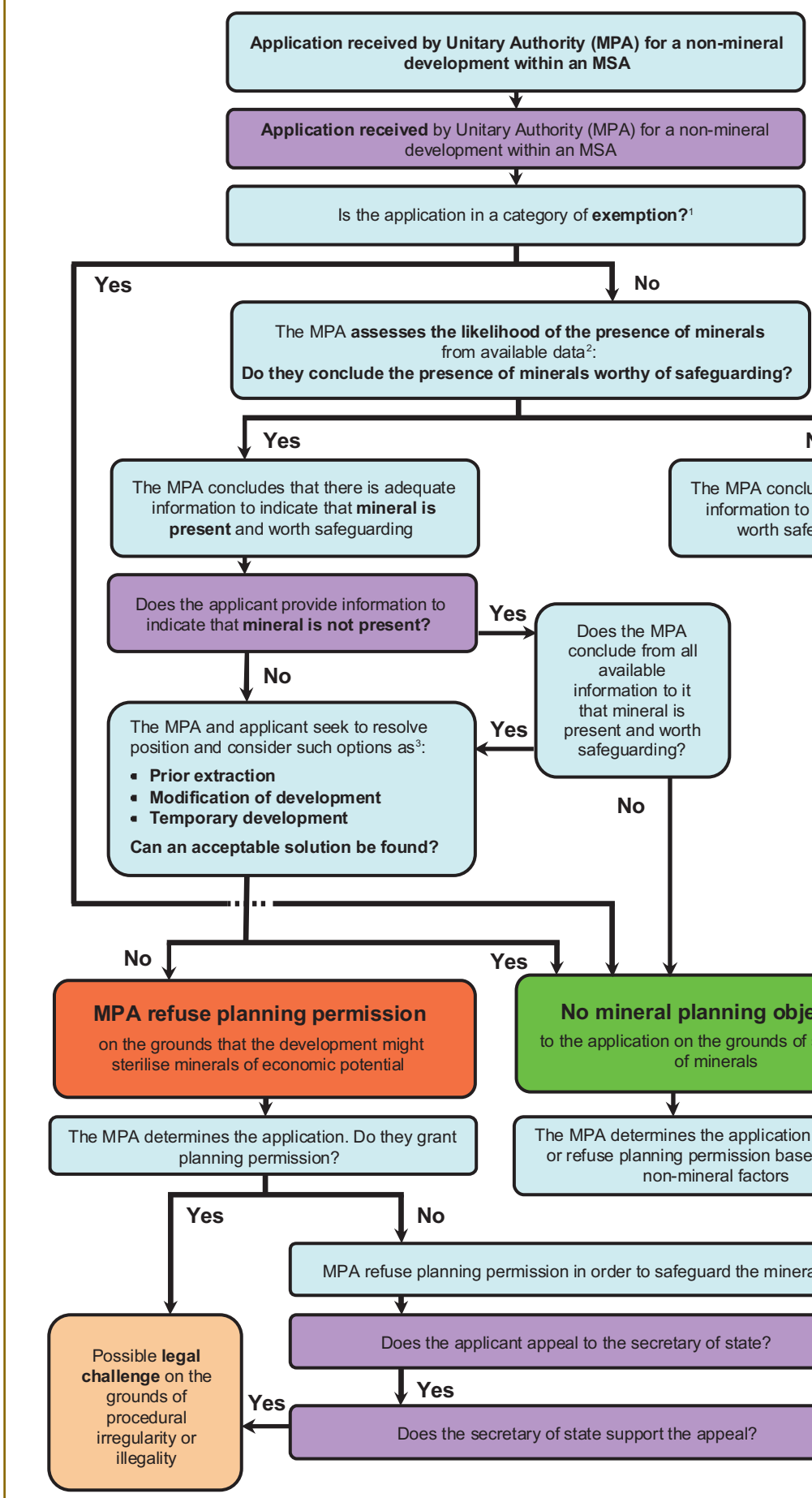
3 The obligation is given in the Town & Country Planning Act 1990.

4 Data such as that:

- Supplied with the application
- From other available data, e.g. BGS county maps, reports, borehole records
- From discussions with specialist advisors, industry and other sources.

5 A development control policy could state criteria in which incompatible development might be possible.

Figure 5. Planning application guidance: Unitary authorities



Notes

1 Criteria for exemption could be outlined in a Local Development Framework and could include:

- Householder applications
- Developments already allocated in a statutory plan
- Infilling in existing built up areas.

2 Data such as that:

- Supplied with the application
- From other available data, e.g. BGS county maps, reports, borehole records
- From discussions with specialist advisors, industry and other sources.

3 A development control policy could state criteria in which incompatible development might be possible.

Legend: Responsibilities are indicated using colour-coding, as follows:

Unitary Authority (MPA)

Developer

Part 3: Case study: Staffordshire County Council

In 2006, Staffordshire County Council commissioned the British Geological Survey to carry out a revision of its Mineral Consultation Areas. The study provides useful evidence to be used in reviewing the current Minerals Local Plan and in preparing replacement planning policies as part of establishing a Minerals and Waste Development Framework for Staffordshire. This review is necessary to meet the requirements of reforms to the planning system introduced in 2004 and to update local planning policy to take account of changes to national and regional policy since the adoption of the current Minerals Local Plan in 1999. In particular, the review of mineral safeguarding and consultation areas was considered important on the grounds that this information would be shared with the eight district councils in Staffordshire in preparation of their local development frameworks.

The work commissioned by Staffordshire County Council was carried out in five key stages and provides a set by step-by-step case study for how an MPA might define MSAs and MCAs, in accordance with MPS1.

Stage 1: Identifying mineral resources

The first stage of the study entailed identifying the broad mineral resources within the MPA using the best information available. The MPA contacted BGS to assist with this and also licensed mineral resource data.

Having obtained the broad mineral resource information, the following mineral resources were identified and included in the MSA review process and subsequent safeguarding policy:

- sand and gravel
- limestone
- brick clay (Etruria Formation)
- shale for cement manufacture
- silica sand
- gypsum/ anhydrite
- building stone and
- shallow coals with associated fireclays

To ensure that those mineral resources which either cross the MPA boundary, or exist just outside of it were not neglected, all mineral resources within a 5 km radius outside of the Staffordshire MPA boundary were included in the MSA delineation exercise.

Stage 2: Mineral resource consultation

The second stage of the process centred on obtaining further information from industry on those mineral resources identified in the first stage. This consultation exercise was an important aspect of the study as the identification and delineation of mineral resources is imprecise, limited by the quantity and quality of data available, and is dependant on economic influences, advances in technology and environmental factors. Commercial operators often have the best local knowledge about the quality and viability of working geological formations that may be considered resources. The BGS mineral resource data was used as a basis for this consultation, which was conducted by BGS with input from in-house regional and economic geologists. All resources were included in the consultation which took the form of email, telephone and where agreeable, through on-site meetings, with the major commercial operators within Staffordshire.

Inset 1: Example of an amendment to the mineral resource data resulting from consultation with industry (brick clay)

Staffordshire has the largest output of clay and shale in Britain, producing 912,000 tonnes in 2004. The Etruria Formation is the principal clay resource in Staffordshire and one of the most important in Britain. The area of Etruria Formation safeguarded in the Staffordshire and Stoke on Trent Mineral Local Plan 1994 to 2006 covered the entire resource with the exception of areas covered by houses, roads or overlain by more than 4 m of overburden (superficial deposits such as glacial till or alluvium). As the pressure on remaining brick clay resources increases, and with advances in technology, the depth of overburden that can be economically removed to extract the mineral resource has increased. Through consultation with industry and Staffordshire County Council, it was decided that the entire extent of the Etruria Formation outcrop should be considered a resource, regardless of the depth of overburden. Furthermore, in certain circumstances, the removal of overlying bedrock in order to extract the Etruria Formation is economically feasible.

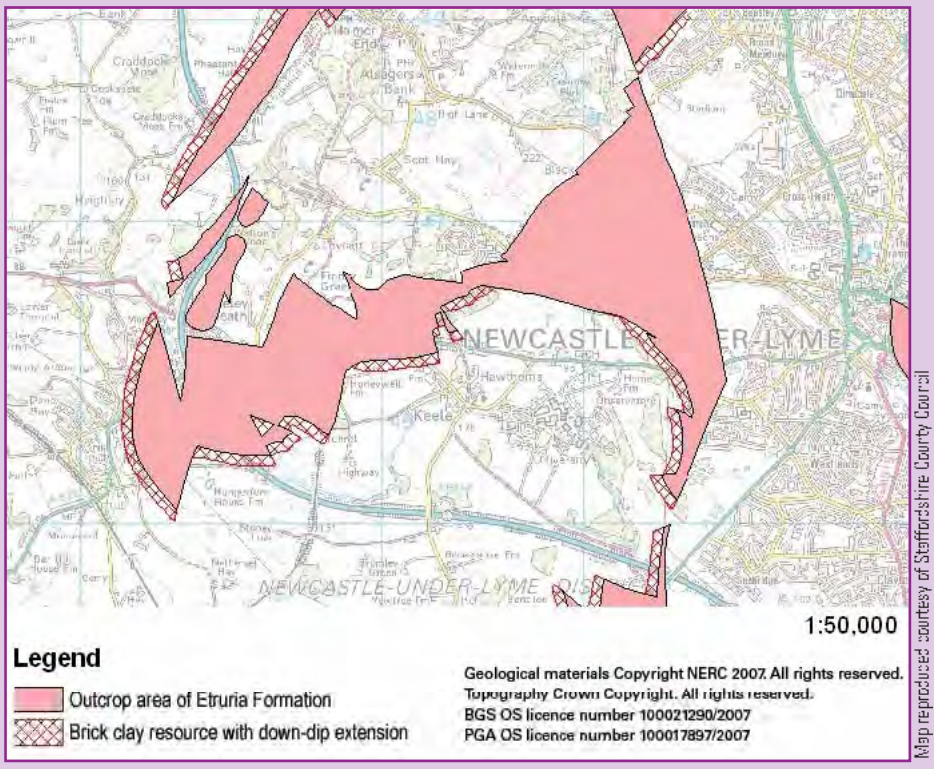


Figure 6. The down dip continuation of an area of Etruria Formation.

To reflect these changes, the BGS resource data was revised to incorporate all of the Etruria Formation, regardless of overburden thickness, and extended to take into account the likely down-dip potential of the resource. Many of the down-dip areas are considered faulted and in such areas no adjustment to the resource beyond the outcrop line was made. Where it was deemed that there could be potential for down dip continuation, the outcrop line was extended by 100 m, reflecting possible depth for working. This extension was based on an assumption that the average angle of dip is 15º and was made without consideration to topography. Figure 6 shows an area underlain by Etruria formation and where the linework was extended to account for down-dip continuation.

The consultation exercise with industry was effective and facilitated the refinement of the BGS baseline dataset to take into account of local knowledge. For example, information on the location of further areas of mineral resources not included in the BGS dataset was provided. Such areas were identified by industry through more in-depth mineral exploration surveys. In addition, areas of mineral resources perceived to be uneconomic were excluded. Two examples are provided to demonstrate where the areas of mineral resources were modified based on industry knowledge. The first case relates to brick clay obtained from the Etruria Marl Formation *(See inset 1),* and the second to the extension of shale resources around a cement works *(see inset 2).*

Stage 3: Defining MSAs

In order to safeguard a resource in its entirety, and to account for the inexact nature of mapped geological boundaries, Staffordshire County Council made the decision to apply a buffer to the mineral resource data to create their MSAs.

Inset 2: Example of an amendment to the mineral resource data after consultation (cement shale)

Through consultation with industry, the BGS increased the limits of the cement shale resource boundary from 1 km to 5 km from the limestone. Although costs relating to the obtaining of planning permission, mitigation of environmental effects and the freehold purchase of land or mineral rights has increased, the relative importance of transport costs has decreased and consequently shale from environmentally acceptable sources can now be transported greater distances to the cement plant than would have been economic in the past. Suitable shale units found within 5 km of the limestone resource in Staffordshire were therefore considered to be resource and the linework was modified to reflect this. The difference to the extent of shale resource is shown in Figure 7.

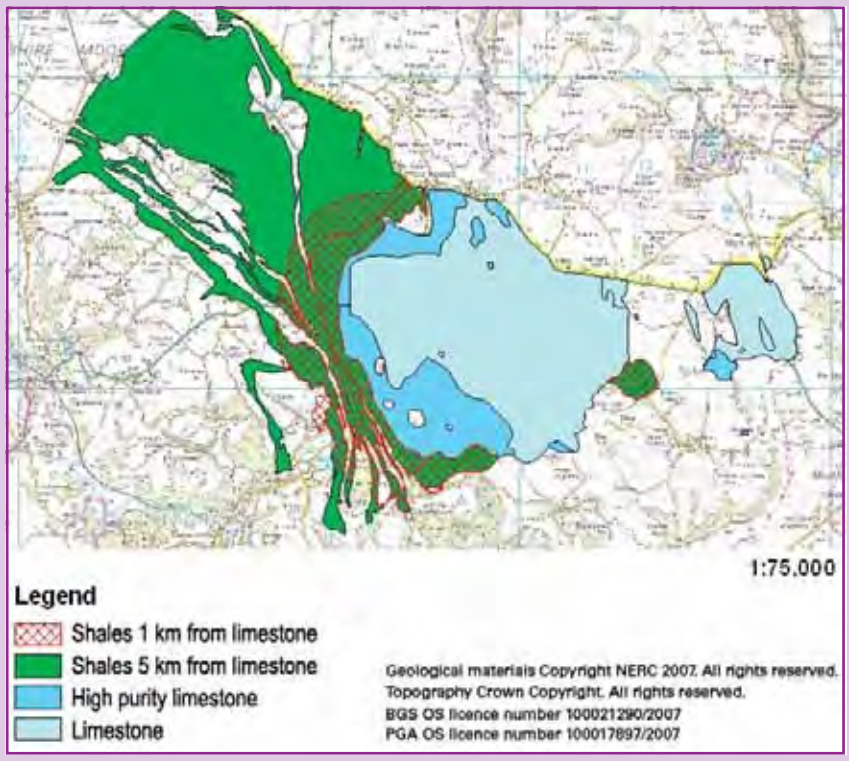


Figure 7. The difference to the extent of shale resource from 1 km distance from limestone to 5 km from limestone.

Inset 3: Defining buffers for MSA delineation

In Staffordshire a 150 m buffer around the extent of the resource was historically used to delineate MCA boundaries and is documented within the Staffordshire and Stoke on Trent Minerals Local Plan 2000 to 2006. This buffer was aimed to protect residents from the noise and dust created by quarrying whilst safeguarding the mineral resource. No consideration, however, was given to the different levels of noise and dust generated by different quarrying methods.

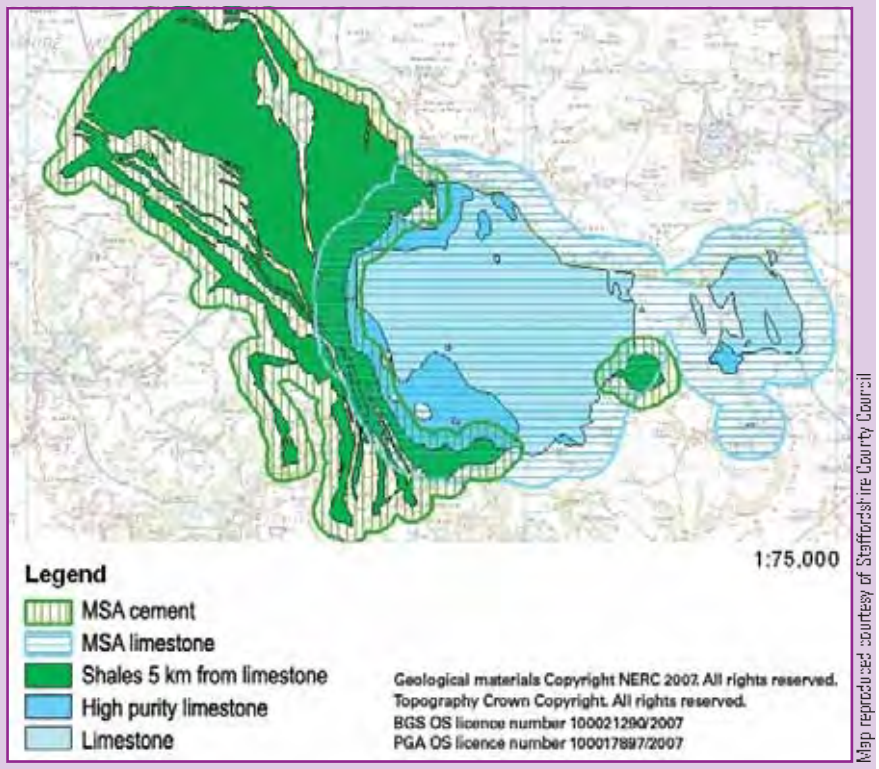


Figure 8. MSAs for limestone and shale.

Consultation with members of industry in Staffordshire revealed that the quarrying techniques employed to extract different minerals require different stand-off limits to protect nearby residents and on the other hand protect the resource from sterilisation by nearby development. For example, limestone, as a hard rock resource, generally requires drilling and blasting with explosives before the mineral can be extracted for processing. Quarry operators within the limestone resource area in Staffordshire currently use a 500 m stand-off from residential dwellings when blasting, in order to prevent adverse problems caused by vibration. In contrast, brick clays are generally worked on a smaller scale, using mobile plant and with no requirement for blasting. This means the stand-off distance can be substantially less than those required for aggregate. Through consultation with industry and BGS, Staffordshire County Council agreed upon a set of minimum buffer limits, which would be applied to the different mineral resources to create the MSAs. These are shown in Table 1 and are demonstrated for limestone and shale in Figure 8.

Rock type and extraction method	Resource	Buffer
Hard rock (generally requires blasting)	Limestone	500 m
Soft rock (requires no blasting)	Sand and gravel, coal and fire clay silica sand, cement shale, building stone	250 m
Clay (uses small excavators)	Brick clay	50 m
Underground gypsum mining	Gypsum	0 m

Table 1. Minimum buffer limits defined through consultation.

Buffering the mineral resource will ensure that developments proposed in close proximity of the resource area do not impact on the potential winning of that resource. The width of the buffer was determined through consultation with industry. Inset 3 shows how buffer widths were determined and why they vary by resource type.

Stage 4: Defining MCAs

Planning for development in Staffordshire is administered by two-tiers of local authorities and therefore the County Council needed to also define MCAs to ensure that mineral resources are given consideration in land-use planning at the district planning authority level. The MSAs were modified to form the MCAs. This modification was based on local factors in order to make the consultation process as practical and as straightforward as possible.

For a clearly defined and easy to implement MCA process, Staffordshire County Council provides its districts with a list of the types of application which, if proposed within an MCA, they require to be consulted upon (e.g. sports development). They also provide a list of those applications which are exempt from consultation (e.g. development and extensions to existing buildings within the curtilage of existing development). Furthermore, on the basis of practical planning experience within their area, the MPA also remove medium to large urban areas (greater than 20 hectares) from within MCAs. The rationale for this decision is two-fold:

- Staffordshire requires that MCAs should be as practical as possible. It does not wish the MPA to be burdened with an unnecessary influx of consultations from the district authorities which are likely to be approved because existing urban areas have already sterilised any potential mineral resource; and
- it is rare for situations of prior extraction to occur within urban areas in Staffordshire.

The methodology applied to define urban areas and remove them from the MCA is described in inset 4.

However, contrary to the methodology used in Staffordshire County Council, we would strongly advise other MPAs to define MCAs (or MSAs) for important mineral resources in urban areas, such as coal, scarce clays and sand and gravel. This will facilitate the potential for extracting these valuable or scarce minerals as part of regeneration projects. In such a situation, if an MSA was not shown to extend beneath the urban area, the mineral may not have been considered for prior extraction and hence unnecessarily sterilised.

In addition to the removal of urban areas, Staffordshire County Council required current and previously worked areas to be removed from MCAs. By removing the existing planning permissions it can highlight the real extent of viable resource and thus highlight its need for safeguarding.

Consideration was given to the safeguarding of existing, planned and potential rail heads and their associated storage/handling facilities at this stage of the MCA delineation. It was found that no additional measures for safeguarding were required.

Inset 4: Methodology for defining and removing urban areas from MSAs

Two existing digital (vector) urban area datasets were considered when determining how to remove urban areas from MSAs. The first was the ODPM's 2001 Urban Settlements (previously called Urban Areas) which defines all settlements above 20 hectares where the land-use is urban in character, the second was the Ordnance Survey (OS) Strategi dataset (2002) based on mapping at 1:250 000. After close examination of these datasets against more recent OS raster mapping at 1:10 000 and 1:25 000 within Staffordshire, it was felt they were too out of date and in the case of OS Strategi, too coarse scale, to fully realise urban development that may have taken place in more recent years (see Figure 9). The use of OS MasterMap® (which is updated 6 monthly) to define urban areas was therefore proposed.

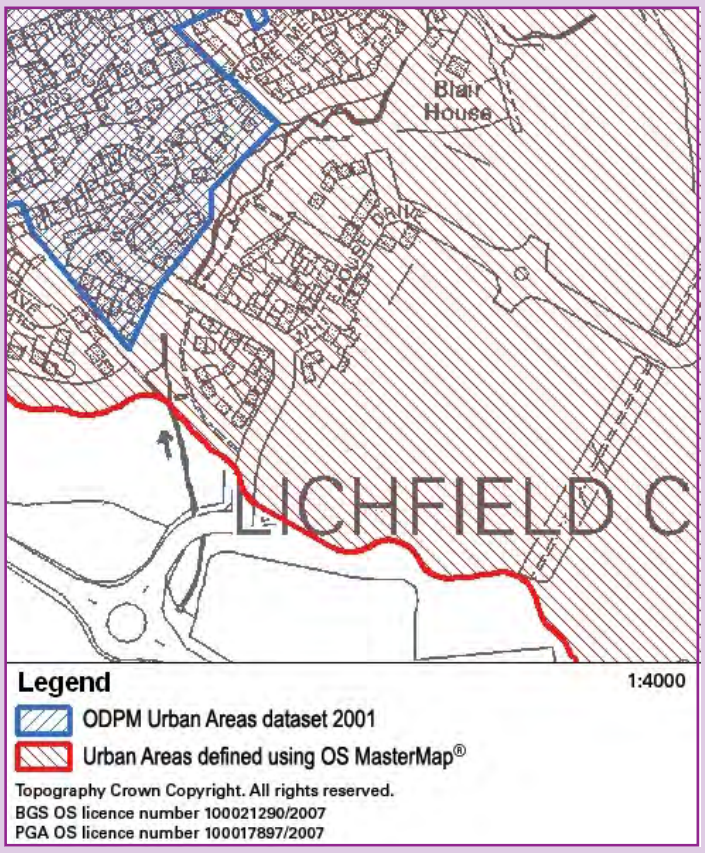


Figure 9. Urban areas against 1: 10 000 raster backdrop (2001).

Staffordshire County Council licences the OS MasterMap® which is the UK Ordnance Surveys flagship large-scale vector dataset showing the UK land cover. It comprises nine land cover themes, one of which is buildings. It does not, however, differentiate between urban and rural buildings. A methodology to delineate urban areas using this dataset was therefore required. In the ODPM's 2001 Urban Settlement data, urban settlements were defined as areas of built-up land with an associated population in excess of 1000 and a minimum area of 20 hectares. Settlements separated by less than 200 m were linked. Research conducted as part of the Ordnance Survey AGENT project, created building clusters based on a building separation of 50 m. Clusters greater than 20 hectares were taken to be urban areas. After careful analysis, it was decided that a 50 m buffer, equating to a 100 m separation, identified building clusters relating to the urban areas shown on the OS 1:10 000 raster map more appropriately than either a 50 m or 200 m separation. This was therefore applied within the methodology for creating an urban area dataset in Staffordshire. The effect of using MasterMap® to define urban areas is highlighted in Figure 10 and can be compared against using the ODPM's 2001 dataset in Figure 9.

The following methodology was defined and implemented within a geographical information system (GIS). The resultant urban areas compared well against the ODPM Urban area settlements dataset but clearly show where development has taken place since 2001. It should be noted that MasterMap® is an immensely large dataset and subsequently requires a large amount of processing capacity and this should be taken into consideration before replicating it.

1. Select all buildings (feature code 10021) from MasterMap® within a 5 km buffer of the MPA. This ensures that any urban areas continuing over MPA boundaries are including in the analysis.

2. Buffer all buildings by 50 m (equating to a 100 m separation) to generate overlapping building.

3. Dissolve the buffered buildings to formulate the clusters where buildings are within 100 m of each other.

4. Infill interior polygons. Consideration was given to the size of the interior polygons (which may equate to recreational land) but all interior polygons in Staffordshire were considered too small to be economical to work and were therefore infilled.

5. Remove the buffer effect from the building clusters by using a negative buffer (-25 m). This leaves a 25 m buffer around the edge of the outermost buildings to allow for detached development.

6. Extract those clusters which are greater than 20 hectares in size. These are considered to be urban areas.

7. Clip urban areas from the MSA dataset to create the MCA dataset.

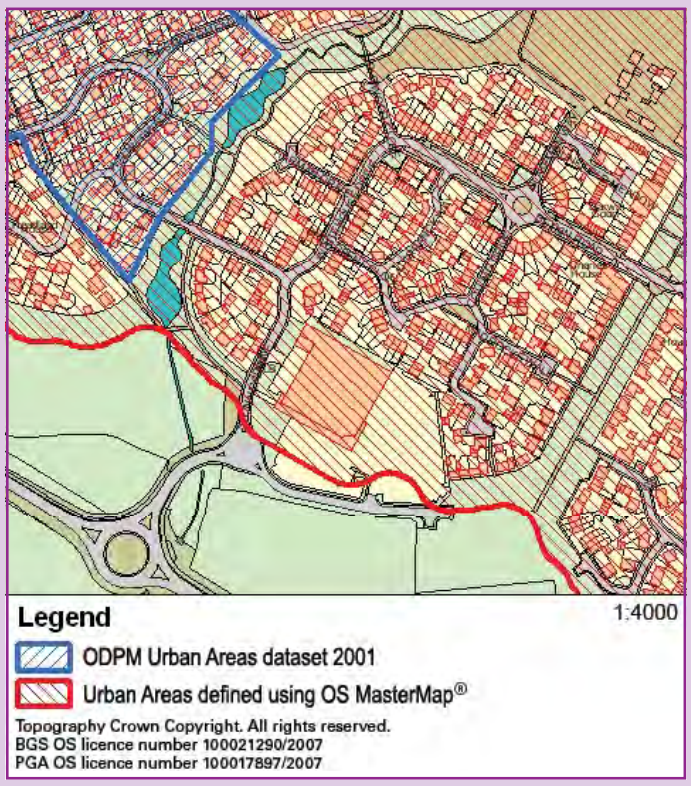


Figure 10. urban areas against OS MasterMap® backdrop.

Limitations

- All buildings were considered in the analysis, irrespective of type. This therefore included buildings such as farmhouses, power stations and retail outlets.
- Rivers may separate an urban area into two. This may have the undesired effect of not identifying a town which actually is greater than 20 hectares in size, but split across a river, with one or both halves being less than 20 hectares in size. It is therefore important to cross check the results against other datasets such as a raster base map.
- Interior open spaces which could be used for mineral working e.g. golf courses, recreational grounds, urban parks, will be included in the building clusters polygon. Consideration to the size of permitted interior polygons needs to be given by the MPA.

Stage 5: Implementation

In Staffordshire, MSAs are those areas which show not only the economic mineral resource within the county, but also the areas required to safeguard this mineral resource in its entirety. MCAs, on the other hand, are tools to ensure that mineral resources are considered at the district level by consultation with the county. MCAs are based on Staffordshire's practical planning experience within its areas and local conditions. The MCAs highlight those areas within the MSAs where districts are encouraged by local policy to consult the MPA but avoid the need for consultation in areas where mineral development would be unlikely to be acceptable within built up areas.

The first part of the review of the Minerals Local Plan is to prepare a Minerals Core Strategy to tackle the significant issues associated with the supply of minerals within Staffordshire over the next 10 to 15 years. One of the associated issues to be addressed is to review the current mineral safeguarding policies and at the first stage of preparing the core strategy, alternative options were considered as to the extent of safeguarding that might need to be carried out.

Staffordshire's current safeguarding policy is that non-mineral development should not be permitted within the MCA unless:

- the mineral is proved to be of no economic value. This requires the developer of the 'other' development to prove the existence or otherwise, quantity and quality of the mineral prior to determination of the planning application of the 'other' development. On the basis of the information provided, a decision is made as to whether to object to the application, recommend prior extraction of the mineral prior to other development taking place or to raise no objections;
- extraction of the mineral would be environmentally unacceptable; or
- an acceptable quantity of mineral can be extracted in an environmentally acceptable manner prior to the other development taking place.

The next stage in the preparation of the Minerals Core Strategy is to define preferred options and in particular, to confirm the objectives for the strategy. These will be determined as a result of the issues and options process and in light of MPS1. After consulting on the preferred options, policies will be prepared that will then be submitted to the Secretary of State for examination. The purpose of the examination is to test the 'soundness' of the policies and following examination, it may then be possible to adopt the policies as part of the Development Plan for Staffordshire subject to any modifications required by the Secretary of State. Staffordshire intends to consult on preferred options in April 2007 and to submit the Core Strategy to the Secretary of State in October 2007.

Part 4: Annexes

Annex 1: History of safeguarding and examples of ineffective safeguarding

The protection of mineral resources from unnecessary sterilisation by other development, regardless of whether or not the mineral will ever be extracted, has been a theme of the planning process since the 1947 Town and Country Planning Act. That theme was continued into the Local Government, Planning and Land Act 1980 and the Town and Country Planning Act 1990. The principle has become increasingly more relevant in recent years, as sustainable development issues have become more prominent in the planning process. While the planning process supported safeguarding in principle, there have been many cases where mineral resources have been overlooked and have become needlessly sterilised by non-mineral development. This can be attributed to a combination of factors including lack of mechanisms for safeguarding provided by MPG1, poor levels of consultation in two-tier authorities, absence of relevant policies from local development plan documents and concern about future extraction. Whatever the cause, the process was ineffective clearly indicating the need for stronger policy and more effective mechanisms to make the process more robust. Five real case examples of when, in the recent past, mineral resources were needlessly sterilised by non-mineral development are provided below.

Example 1: Ball Clay resource sterilisation

One reason why the process was less than successful in the past may have been the nature of guidance regarding which development plan documents should show Mineral Consultation Areas (MCAs). Guidance in MPG1 suggested that MCAs should be defined in mineral plans but was silent on their designation in district local plans. This was surprising given that a district local plan was normally the relevant policy document against which development that might sterilise mineral would be determined and was the only development plan document that would normally be taken into account by a developer.

MCAs were therefore mainly excluded from district local plans. Guidance then appears to have become interpreted as specifically not requiring designation in local plans. In one district, which contained nationally important industrial minerals, the minerals industry objected to the draft local plan because it excluded the designation of, and a policy on, MCAs for the industrial mineral. In considering the objection the Inspector specifically discounted the need for a policy and designation, because guidance did not require designation in a district local plan.

MPS1 now makes it clear that MSAs, and relevant policies, must be shown in district LDDs. This is a positive step forward.

Example 2: Sand and gravel resource sterilisation

The sterilisation of mineral by development with more immediate economic benefit is a relatively common occurrence. In one case a major freight depot was allocated in the district local plan and a subsequent application was permitted, subject to a Section 106 agreement. However, prior to the allocation the site had been identified in an MCA and part of the land had been granted permission for extraction. The MCA was

reconfirmed in the minerals local plan (adopted 2 years before the district local plan) and the operational area and surrounding mineral resource was identified in policy as a key location for mineral supply for the future.

Despite the strategic importance of the location for minerals, the MPA made no objection to the depot application because of the perceived strategic considerations in its development. However, while minerals can only be worked where they occur, there were alternative options for the depot off of the mineral resource which, it would seem, were not properly considered (even though an Environmental Statement was undertaken which should have considered this point) and would have been equally acceptable in locational and planning terms.

This process was less satisfactory because both the mineral and district Local Plans considered the status of the site in isolation and because the decision was driven by 'strategic' considerations which did not adequately take account of resource scarcity and sustainability considerations. In excess of eight million tonnes of mineral resource was sterilised. There have been significant delays (over seven years) in bringing the depot forward (construction has yet to start). Unfortunately the option of some prior extraction has not been taken.

MPS1 now advises that districts should not include proposals for development in MSAs. This is a positive addition, but to work it requires better coordination between authorities and a commitment to that principle and, as noted below, wider not narrower definition of MCAs.

Unfortunately, MCAs have historically been defined quite narrowly by this MPA being focussed mainly around operational quarries. Further, a number of MCAs have been deleted by the MPA over the last 25 years even though the resource was still present. The impact of narrowly defined MCAs has created a further sterilisation issue in the area. A further non-mineral development is now proposed on the same resource outcrop but, because of the limited definition of MCAs, not within an MCA. This non-mineral development would sterilise up to 15 million tonnes. To date neither the MPA nor the district has considered the impact on mineral resources, or the potential for prior extraction. If the development has to go ahead in the location, prior extraction of some of this resource would recover a proportion of the mineral and help overcome potentially severe visual impacts associated with the non-mineral development.

Example 3: Limestone resource sterilisation

The failure of the consultation process in two-tier planning areas was one of the major downfalls of the previous system. The reasons the process failed in the past varies, but substantially relates to district councils ignoring the need for consultation. This was unexpected given that consultation on all manner of other matters was normally rigorously applied. The impact of failure to consult could be quite dramatic as even a minor development permission could cause major sterilisation impacts.

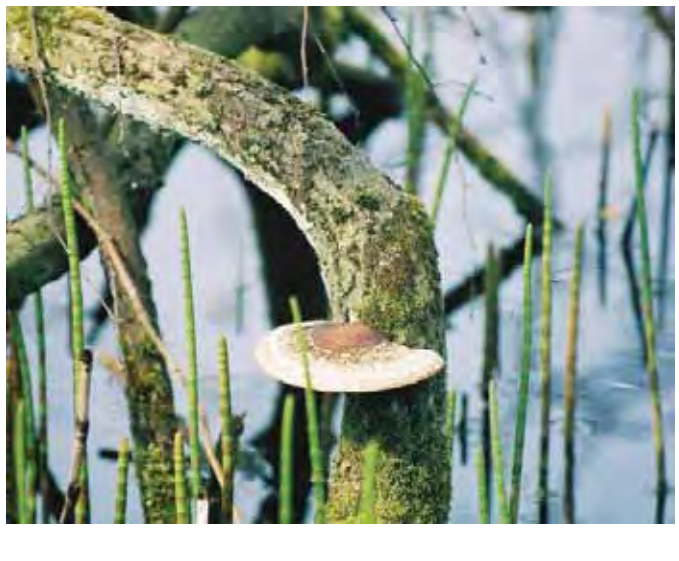
One district granted permission to rebuild a single isolated derelict property located on mineral and between two permitted areas. The area lay within an MCA previously provided to the district council. However, this was not shown on the district local plan and as a result was not picked up during the registration process of the application to rebuild. The county council was therefore not consulted and permission was granted by the district. This resulted in the amenity considerations of that property seriously affecting the viability of subsequent extraction operations and became a significant issue in the determination of a planning application.

Having MSAs designated in DPDs will raise awareness of the issues and could prevent reccurrences of the above. However, while the consultation was a statutory requirement, the link to MCAs was not clearly defined with no agency having oversight of its effectiveness. The process was therefore weak and was sometimes forgotten or disregarded in comparison with other more explicit consultations. Concern about the validity of permissions granted without consultation with the MPA should remind districts of the need to comply with this requirement.

Example 4: Building stone sterilisation

A substantial concern has been the failure of decision makers to give due weight to the position that mineral resources can only be worked where they are found, whereas other development normally has a range of location choices. This failure is of particular concern where it leads to sterilisation of scarce and valuable minerals.

An application to use a former garden centre with a single dwelling unit for residential use (24 units) was submitted on land underlain by building stone and where the mineral was owned by an extraction company. The adjacent land was used by the company as a processing site and as an adit access to working stone underground. The stone in the application site was capable of being worked underground from the processing site to produce high value building stone. The application site itself was not in an MCA but policy required protection of valuable resources from sterilisation. The planning application was refused by the district but without referring to the mineral sterilisation point. There was no need for housing land over and above allocations in the adopted district plan. The developers appealed against the decision.



In evidence the owner of the mineral drew attention to the need to protect the stone and its limited outcrop. In his decision letter the Inspector noted that stone is scarce but also noted that powers exist to restrict working beneath structures on the surface. He then concerned himself with consideration of the ability of the planning process to prevent harm by subsidence to future residential units on the site and the impact on amenities of residents, rather than the impact development would have on sterilising mineral and the need to prevent development approaching possible sources of noise, dust and vibration. He concluded that as there was one dwelling on site there would be no additional sterilisation if the whole of the site was developed for housing and allowed the appeal.

This failure to appreciate the need to prevent sterilisation of minerals needs to be resolved. Unfortunately there is an ambiguous approach to mineral issues across the planning process. At the strategic level the process recognises the desirability of preventing sterilisation, but at the decision level the fixed nature of mineral resources may often be dismissed. This conflicts with action taken to protect other fundamental resources. The reasons for this may vary, but a stronger emphasis on the requirement to protect mineral resources is clearly needed.

Example 5: Sand and gravel sterilisation

The objective of protecting mineral resources must take account of other planning objectives. It will not be desirable to totally

inhibit development that would sterilise mineral. In such cases the potential of prior extraction should be explored, although frequently short-term objectives requiring construction of the non-mineral development may sweep this potential aside. Because of the short-term objectives there appear to be few examples of prior extraction taking place. This is short-sighted, not just because of the loss of mineral, but also because of the loss of income generation from sales of mineral and resolution of planning concerns arising from visual impact.

A successful example was located in the urban fringe. There was a need for further employment land but suitable locations were limited. One area was included in an MCA. An application for the employment development of the area in the MCA was submitted with provision for prior extraction of some of the mineral. A substantial quantity of mineral was removed prior to the development generating a significant net income. Lowering the site by removing the mineral also both created and subsidised level development platforms and helped to reduce the visual impact of the development.

Where mineral might have to be sterilised, prior extraction can therefore be a very positive route. However, the cases where this happens appear to be few. Unfortunately, a further application near the above site did not lead to prior extraction, even though the land was in an MCA, because the developers did not wish to delay the construction period. This can be a legitimate concern, but often construction is delayed providing a window of opportunity to remove mineral. Further, where allocations in development plans propose development, such commitment could allow prior extraction of minerals. What is required is more focussed awareness on the prospects for prior extraction and effective communication on this within the planning process.

Annex 2: Minerals Policy Statement 1

Planning and Minerals

Paragraph 9 of MPS1 sets out the National objectives for minerals planning, four of which are dependant, either directly or indirectly, upon the effective safeguarding of mineral resources:

- to ensure, so far as practicable, the prudent, efficient and sustainable use of minerals and recycling of suitable materials, thereby minimising the requirement for new primary extraction;
- to conserve mineral resources through appropriate domestic provision and timing of supply;

- to safeguard mineral resources as far as possible;
- to secure adequate and steady supplies of minerals needed by society and the economy within the limits set by the environment, assessed through sustainability appraisal, without irreversible damage.

Paragraph 10 of MPS1 sets out in the form of National policies, the duties of RPBs, MPAs and LPAs in order to meet those objectives.

Paragraph 13 lists those which are specific to mineral safeguarding, as follows:

- define Mineral Safeguarding Areas (MSAs) in LDDs, 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 unitary planning areas, define MSAs in LDDs to alert prospective applicants for non-minerals development to the existence of valuable mineral resources;
- in two-tier planning areas, include policies and proposals to safeguard mineral resources within MSAs in county LDDs and show MSAs in district LDDs. Counties should define Mineral Consultation Areas (MCAs) based on their MSAs. MCAs should also be reflected in district LDDs. 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 LDDs for non-minerals development in those areas, or sensitive development around safeguarding minerals areas, where such policies would affect the potential for future extraction of minerals;
- safeguard existing, planned and potential rail heads, wharfage and associated storage, handling and processed facilities for the bulk transport by rail, sea or inland waterways of minerals, particularly coal and aggregates, including recycled, secondary and marine-dredged materials;
- identify future sites to accommodate the above facilities and reflect any such allocations in the LDDs of district councils in two-tier planning areas. District councils in these areas should not normally permit other development proposals near such safeguarding sites where they might constrain future use for these purposes;
- safeguard existing, planned and potential sites including rail and water-services, or concrete batching, the manufacture of coated materials, other concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material. Where appropriate, identify future sites for these uses and reflect any such allocations in the LDDs of district councils in two-tier planning areas.

Practice Guide

Safeguarding of mineral resources

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 area (MSAs) are identified and that appropriate safeguarding policies are incorporated in DPDs. MSAs can be defined objectively using the best available geological and mineral resources 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.

Paragraph 33

In two-tier planning areas, safeguarding of mineral resources can be achieved only through county and district councils co-operating in the exercise of their respective planning powers over land with potential for mineral extraction. This can be

facilitated by defining all, parts of, or marginally more than a MSA as a minerals consultation area (MCA). These provide the mechanism for district councils to consult county councils before granting planning permission, on any planning applications they receive for non-mineral developments which fall within the boundary of a MCA, and which would be likely to affect the winning and working of minerals.

Annex 3: Glossary

Mineral resource

A mineral resource is a concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction.

Generally a mineral resource is known to exist within the boundaries outlined by geological mapping, which may be supplemented by more in depth geological data. The BGS mineral resource linework, for example, shows the surface extent of mineral resources, inferred from available geological information. With the exception of industrial minerals assessment areas (IMAU), they have not been evaluated by drilling or by other sampling methods on any systematic basis. Mineral resources defined delineate areas within which potentially workable minerals may occur. What may be of potential economic interest may change over time, and is dependent upon a number of factors, such as mineral markets and extraction technology.

Mineral reserve

A mineral reserve is that part of a mineral resource which can be economically extracted. Appropriate assessments demonstrate that the quality and quantity of the mineral can be estimated to a level of confidence which could reasonably justify planning permission being granted.

More detailed evaluations of a mineral resource (such as trenching and drilling) may result in the identification of an area where the volume and quality of mineral are such that they could be economically extracted. In the context of land-use planning, however, the term mineral reserve should strictly be further limited to those minerals for which a valid planning permission for extraction exists (i.e. permitted reserves). Without a valid planning consent, no mineral working can take place and consequently the inherent economic value of the mineral resource cannot be released and resulting wealth created. The ultimate fate of mineral reserves is to be either physically worked out or to be rendered non-viable by changing economic circumstances.

The most widely accepted reporting standard for minerals is that of the JORC code. The latest copy (2004) can be downloaded from http://www.jorc.org

Areas of Search

These are broader areas where knowledge of mineral resources may be less certain than in Preferred Areas, but within which planning permissions could be granted to meet any shortfall in supply if suitable applications are made. MPAs should not solely identify Areas of Search as the public, mineral and non-mineral developers need a degree of certainty regarding the location and timing of areas to be worked that is not provided by this designation.

Preferred Areas

These are defined as areas of known resource where planning permission might reasonably be anticipated providing the proposals are environmentally acceptable or appropriate conditions can be applied to mitigate adverse impacts. In selecting Preferred Areas it is suggested that sites that could be most sustainably worked are selected in preference to less sustainable sites.

Specific Sites

These are areas with viable mineral resources within which the landowners are willing to allow mineral development, and in which granting of planning permission may be more likely to be acceptable in planning terms than in a Preferred Area.

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