

Cambridgeshire County Council and Peterborough City Council

Identifying Mineral Safeguarding Areas

**Cambridgeshire and Peterborough Minerals and
Waste Local Plan**

May 2018



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Safeguarding mineral resources

1. National policy and guidance recognises that minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs. However, since minerals are a finite natural resource, and can only be worked where they naturally occur, it is important to make best use of them to secure their long-term conservation. Sterilisation of mineral resources can occur as a result of surface development either directly overlying or situated on/close to the boundary of the resource.
2. The purpose of safeguarding mineral resources is to ensure that such matters are considered in decision-making processes for land-use planning, and that the ability of future generations to meet their needs is not compromised.
3. The National Planning Policy Framework was published in March 2012 and requires that all Mineral Planning Authorities (MPAs) in preparing their Local Plans define Minerals Safeguarding Areas (MSAs) and adopt appropriate policies in order that known locations of specific minerals resources of local and national importance are not needlessly sterilised by non-mineral development; and define Minerals Consultation Areas (MCAs) based on the MSAs (NPPF, paragraph 143). In the Preliminary Draft MWLP (May 2018), the boundaries of MCAs are deemed to be coterminous with those of MSAs and are not defined separately¹. It should be noted that in the adopted Minerals and Waste Development Framework, MCAs are defined differently, as 250m consultation buffers around existing, permitted and allocated mineral sites; defined as Mineral Allocation Consultation Areas (MACAs) in the Preliminary Draft MWLP.
4. The designation of MSAs however should not create a presumption that resources defined will be worked, nor should it preclude other forms of development from being permitted. In addition Local Plans should set out policies to encourage the prior extraction of minerals, where practicable and environmentally feasible, if it is necessary for non-mineral development to take place.
5. MSAs are a planning tool, acting as a sign-post for the presence of mineral resources that may be sterilised by non-mineral development, and to local mineral safeguarding policies. Due consideration should be had to the presence of MSAs throughout the planning process, including both the preparation of Local Plans (i.e. site allocations) and during development management (i.e. determination of planning applications).

¹ Herein reference to MSAs should be taken to also refer to MCAs.

6. The broad methodology for defining MSAs has been developed in accordance with the NPPF and Mineral safeguarding in England: good practice advice (British Geological Survey, BGS, 2011). The broad methodology is summarised below:
 - i. Identify mineral resources that are of local and national importance and define the MSAs within Cambridgeshire and Peterborough by -
 - a. utilising the best geological and mineral resource information, and
 - b. deciding which mineral resources to safeguard and the physical extent of MSAs.
 - ii. Prepare the draft MSAs (for consultation).
 - iii. Determine how matters related to MSAs are to be addressed through the Local Plan.
 - iv. Determine the need for development management policies and what mechanisms should be included to ensure that mineral resources are taken into account in planning decisions.

Consultation on the draft methodology

7. Consultation on the draft methodology for identifying mineral safeguarding and consultation areas will take place alongside consultation on the Minerals and Waste Local Plan (MWLP) Preliminary Draft document. The consultation period commences on 16 May 2018 for 6 weeks. The closing date for feedback is **26 June 2018**; all responses must be received before midnight on this date.
8. The purpose of undertaking consultation is to ensure that the methodology for identifying mineral safeguarding and consultation areas, associated policies and other planning mechanisms to be taken forward into the MWLP have an appropriate scope, that appropriate techniques and the most up-to-date information is utilised, local circumstance is given due consideration and that the methodology is in line with Government guidance. Responses received will be taken into consideration in finalising the methodology.
9. Where available industry, their agents and other stakeholders are encouraged to submit additional evidence regarding the extent of mineral resources. Where deemed appropriate such information could be used to supplement the BGS mineral resource linework.
10. A map of the mineral resources within the administrative area covered by Cambridgeshire County and Peterborough City Councils is available to view at: www.bgs.ac.uk/mineralsuk/maps/maps.html alternatively the BGS 2003 Mineral Resource Map can be downloaded from: www.bgs.ac.uk/mineralsuk/planning/resource.html

Identifying mineral resources

11. At the local level, MSAs should focus on mineral resource areas that are sufficiently extensive to provide for significant opportunities for current and future use and growth. They also need to centre on resources that are of local or national importance, whilst recognising the fact that market demand may change in the future.
12. So what is a mineral resource? “Mineral resources are natural concentrations of minerals in or on the Earth’s crust that are or may become of economic interest because they are present in such form, quality and quantity that there is the potential for eventual extraction. Minerals are thus defined by economic as well as physical parameters.” (BGS 2011, paragraph 2.1.1)
13. Mineral resources are identified by the BGS Mineral Resource Information and Map, which delineates and describes the geographical distribution of all onshore mineral resources of historic, current or potential economic interest in the area.
14. The Mineral Resource Information in Support of National, Regional and Local Planning: Cambridgeshire (comprising Cambridgeshire and the City Of Peterborough) was produced by BGS (2003). The Mineral Resources Map incorporates data from this report, updated with borehole data and other information as appropriate (2012); this map (and associated dataset) will be used as the base for identifying the geographical distribution of mineral resources in Cambridgeshire and Peterborough. Where available, information from other data sources and reports will also be taken into consideration in defining the MSAs.
15. Minerals present in Cambridgeshire and Peterborough that are used for both aggregate and non-aggregate purposes include sand and gravels, limestone, chalk and clay. Previous exploration for conventional oil and gas indicates that Cambridgeshire and Peterborough offer little or no hydrocarbon potential and negligible coalbed methane development potential (BGS 2003). The distribution of mineral resources within the plan area is illustrated in Appendix 1.

Sand and gravel

16. Economically, sand and gravel is the most important mineral resource within the plan area. Within the plan area sand and gravel resources occur mainly within superficial or ‘drift’ deposits, subdivided into river sand and gravel, glacial deposits, head deposits and bedrock sand. The principle uses for sand are as a fine aggregate in concrete mortar and asphalt, whilst gravel is used as a coarse aggregate in concrete.
17. River sand and gravel (terrace and sub-alluvial deposits) resources occur in both raised river terrace sequences flanking the modern floodplains and in floodplain terrace deposits associated with, and underlying, present day alluvium. The main sources of these materials in Cambridgeshire and Peterborough are Quaternary and Recent Age deposits in the valleys of the Nene, Ouse, Welland, Granta and Cam, where generally clean, well bedded sand and gravels rest on weathered

bedrock or chalky till. The quality of these deposits can vary along the river valleys. Included within these resources is what is known as Fen Gravel or Fen Edge deposits that form a discontinuous spread at the edge of the Fens and extend up to the present day valleys. The Fen Gravel or Fen Edge deposits are good quality sand and gravels. The principal existing sand and gravel sites are in areas with Fen Edge deposits and supply the majority of the plan area's sand and gravel.

18. Glacial sand and gravel deposits are mainly located in the southeast around Cambridge. Deposits are highly variable in nature and may appear as sheet or delta-like deposits or as elongated irregular lenses.
19. Head deposits comprise gravelly deposits that have been involved in mass movement downslope to their present position. Most deposits contain significant clay content and many deposits can be worked as 'hoggin'. Within the plan area these deposits tend to be less economically significant, and are restricted to low quality, isolated patches. Head deposits have low values and are generally only used as raised.
20. Bedrock sand resources are mostly confined to the Woburn Sands Formation, which has a narrow outcrop across Cambridgeshire from Gamlingay to Ely and thins north-eastwards. Sand from this formation has been worked in the past but is no longer extracted as the quality and grain size is variable. No occurrences of fullers earth (used for industrial applications) have been found within the Woburn Sands formation within the plan area.

Limestone

21. Cambridgeshire and Peterborough has limited resources of rock suitable for crushed rock aggregate. The Lincolnshire Limestone Formation (inferior oolite) crops out in the north-west of the plan area, west and north west of Peterborough, where it forms part of a prominent limestone outcrop running south to north through Corby, Stamford, Grantham and Lincoln.
22. Higher quality aggregates are required for coating with bitumen for road surfacing, or for mixing with cement to produce concrete. For applications such as constructional fill and drainage media, with less demanding specifications, lower quality materials are acceptable. Crushed Lincolnshire Limestone provides aggregates that are of relatively low strength and with poor resistance to frost damage. This material is therefore, generally only suitable for use as constructional fill or as a sub-base roadstone.
23. In the past Lincolnshire Limestone was used as an important source of building stone, however no limestone is currently worked for building stone within the plan area. Several other resources were historically used for building stone including Alwalton Marble - a thin fossiliferous limestone used for decorative stonework and Upware Limestone.
24. As part of the Strategic Stone Survey, Historic England commissioned a set of atlases covering the building stones of the English counties. The Cambridgeshire and Peterborough survey is currently being undertaken

and is likely to be available late 2018/early 2019; the results of which will be taken into account as appropriate through the plan making process.

25. Limestone is also used for non-aggregate purposes. Upware Limestone is quarried on a small scale for use as agricultural lime and asphalt filler with sites located to the south of the plan area closer to Cambridge.

Chalk

26. A relatively soft, fine-grained material, chalk is divided into two categories, grey and white. Located in a physically extensive band running from the south-west of the plan area running north-easterly across to Newmarket. Chalk extraction for agricultural lime was once widely practised and there are numerous small, disused quarries. Grey chalk, together with 'clunch' and underlying chalk marl, is extracted at Barrington for cement manufacture and other building products, whilst white chalk is extracted at Steeple Morden for the production of chalk whiting.

Brick clay

27. The Lower Oxford Clay found in the Peterborough area was historically one of the major sources of brick clay in Britain, with extraction on a significant scale. Extraction is now concentrated at a very limited number of locations (west of Whittlesey). It is predominantly used in the manufacture of bricks and, to a lesser degree, roof tiles and clay pipes. In addition these clays may also be used as a source of construction fill for road building and for lining and sealing landfill sites.

The draft methodology for identifying mineral safeguarding and consultation areas

Draft methodology

28. The proposed methodology for identifying mineral safeguarding and consultation areas within the administrative area of Cambridgeshire County and Peterborough City Councils is set out below:
 - Minerals resources of local and national importance are included in the MSAs, i.e. sand and gravel (river and glacial), limestone (Lincolnshire limestone formation), brick clay (Lower Oxford Clay – Peterborough member) and chalk (white and grey) resources surrounding major operational chalk quarries.
 - The identification of MSAs focuses on surface-won materials as these are of relevance to Cambridgeshire and Peterborough and are the most vulnerable to sterilisation by surface development.
29. Mineral resources are taken to be those identified on the BGS Mineral Resources Map. Where available and relevant other data sources will be taken into consideration and may be used to refine the BGS linework in order to identify the mineral safeguarding and consultation areas. The MSAs will act as the trigger for application of mineral safeguarding policy

and related planning mechanisms. Jointly these mechanisms will act to inform strategic planning and development control in relation to mineral resources.

- The boundaries for MCAs will be taken to be coterminous with (i.e. the same as) that of the MSAs.
- Regarding bricklay, the BGS mapping does not include an extensive area of brickclay around Whittlesey. This area includes the adopted allocation at Must Farm, Whittlesey. The intent is to carry forward the adopted MSA boundaries defined in respect to brickclay as the BGS data does not fully cover this geological resource.
- Areas and sites that were previously worked or that are existing operations will be excluded from MSAs. These areas have either been worked out or are already recognised within the mineral planning context and hence safeguarded from inappropriate forms of development.
- Areas that have existing planning permission but are not currently operational and those identified as allocations (in both the adopted and emerging plans) will not be excluded as there is the possibility that these may not be developed by industry during either the permission or plan period and hence may experience sterilisation from non-minerals development.
- Environmental designations will not be excluded. The presence of environmental designations does not preclude mineral safeguarding on the basis that sterilising development will not take place in these areas (BGS 2011, paragraph 4.2.9).
- Where possible areas that are considered likely to form part of a large regeneration project and/or large brownfield sites likely to be redeveloped will be identified with the remainder of the urban area excluded. Where this is not possible MSAs will be defined in urban areas with exemption criteria applied to avoid unnecessary trigger of consultation and assessment requirements. This reflects that mineral resources are present and may allow for future extraction where associated with large redevelopments (BGS 2011, paragraph 4.2.10).
- Buffers will be applied around all mineral resources included in the MSAs. This will help to account for encroachment of non-minerals development that could potentially result in sterilisation of the resource. The buffer area for sand and gravel, brick clay, chalk and limestone² is 250 metres (m) extending outwards from the boundary of the BGS mineral resource linework.
- MSA mapping (including associated buffers) for Cambridgeshire and Peterborough will extend up to the administrative boundaries of Cambridgeshire County and Peterborough City Councils.
- Where made publicly available online (e.g. interactive mapping), the MSAs as well as any sites allocated for mineral extraction in the

² Extraction of limestone within the plan area has not previously required blasting.

adopted Local Plans of adjoining MPAs will be viewed to inform the identification of MSAs within Cambridgeshire and Peterborough.

Assumptions, limitations and uncertainties

30. The following assumptions will be made in identifying the MSAs:
 - The BGS Mineral Resources Map (and the other data sources listed) will form the best and most up-to-date source of information for determining the occurrence and extent of mineral resources. It is acknowledged that the delineation of mineral resources is considered as approximate in the majority of instances.
 - The following resources found within the plan area are not considered of local or national importance due to the lack of current and future demand of product and therefore do not require safeguarding: sand and gravel – head gravels and bedrock sand deposits; other limestone's (i.e. other than Lincolnshire limestone). In addition the extensive chalk resources within the wider plan area (i.e. not surrounding major operational chalk quarries) are also not included, this is because given the limited scale of working it was not considered necessary to include the entire chalk resource but rather focus on those resources associated with existing and/or permitted operations.
 - No technical limits have been placed on the data, e.g. application of a minimum threshold size, grouping of smaller deposits and inference of larger deposits.
 - Sites that have planning permission and are operational, and those that have previously been worked (i.e. the mineral reserves have been removed) do not require safeguarding.
 - Buffers of 250m have been applied around mineral resource polygons included in the MSAs to ensure an adequate safeguarding margin.
31. The Cambridgeshire and Peterborough Strategic Stone Survey is currently being undertaken and is likely to be available late 2018/early 2019; the results of which will be taken into account as appropriate through the plan making process.
32. Mapping undertaken for MSAs is indicative in nature for the purpose of strategically identifying where a mineral resource exists and the potential for a development proposal to sterilise a mineral resource.

Data sources

33. Data sources used to inform the development of this methodology include:
 - BGS 2003 Mineral Resource Information in Support of National, Regional and Local Planning – Cambridgeshire (comprising Cambridgeshire and the City of Peterborough) (Report and Map),
 - BGS 2012 Mineral Resources datasets/layers,
 - Cambridgeshire County and Peterborough City Councils' minerals planning permission datasets/layers,

- Cambridgeshire County and Peterborough City Councils' historic minerals planning applications and adopted plan datasets/layers,
- Local Aggregate Assessments - Cambridgeshire County and Peterborough City Councils,
- MSA maps of adjoining MPAs, and
- Aggregate Working Party annual reports.

Addressing the safeguarding of minerals resources through land use planning

The emerging Minerals and Waste Local Plan

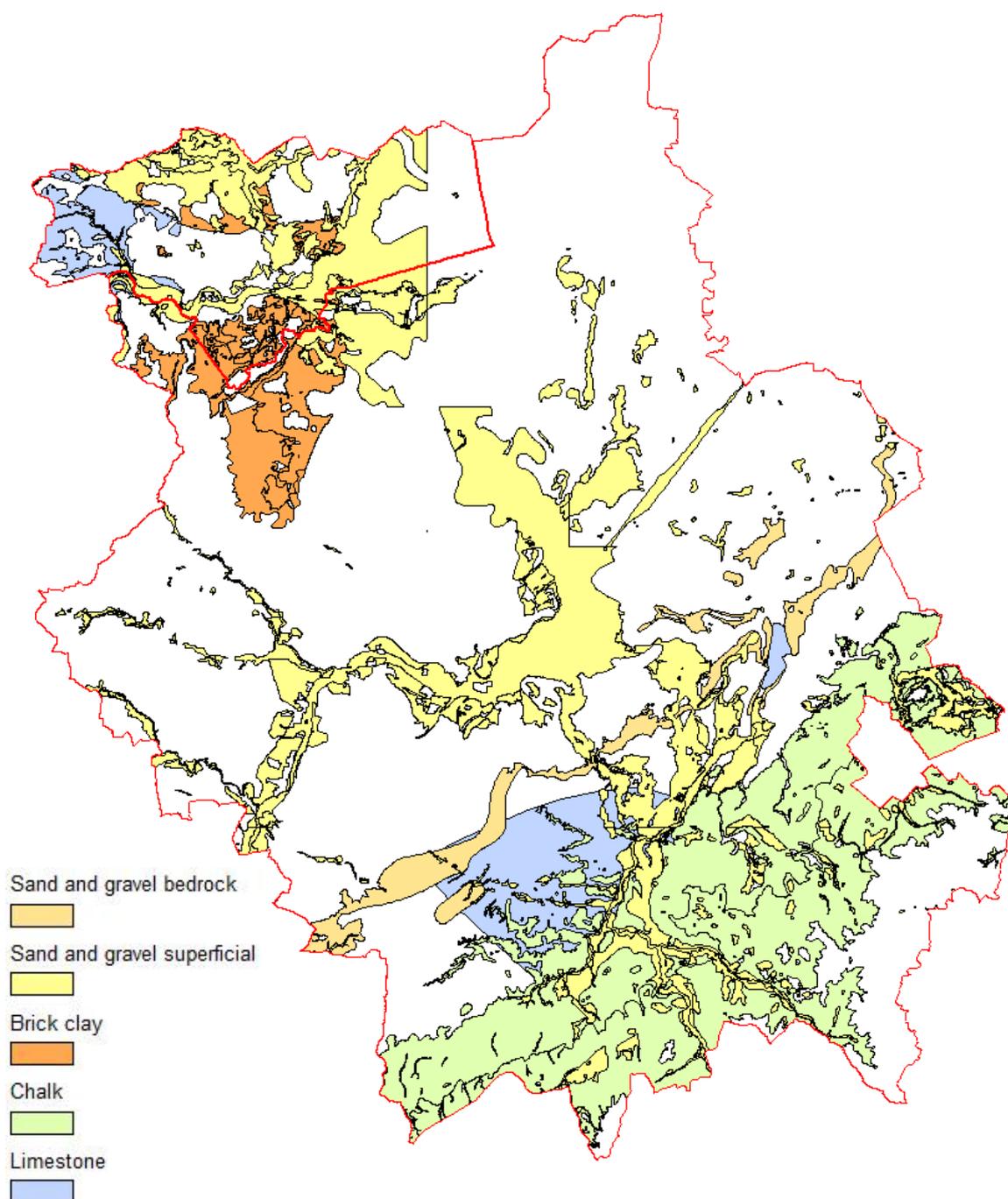
34. The emerging MWLP will carry the adopted policy intent forward, amended to align with NPPF requirements. The identification of mineral resources to be included in the MSAs reflects the methodology used in the adopted plan. This is proposed to be complemented by a policy outlining the strategic direction for the safeguarding of mineral resources including planning provisions and criteria to ensure that mineral resources of local and national importance are not needlessly sterilised by non-mineral development.
35. The identification of MSAs may present opportunities for prior extraction of minerals in conjunction with other forms of development in order to avoid sterilisation. Such instances may be of economic advantage to developers as the extractive operation could act as a feedstock for the development, significantly reducing costs associated with importing aggregates. This demonstrates the importance of having due regard to mineral interests. Under such circumstances it may be necessary for detailed site investigations to be undertaken to determine the quality and extent of the resource, economic viability of prior extraction and the need for the development; the emerging MWLP will identify developer reporting requirements. For the purpose of informing the plan-making process proposed reporting requirements are set out in Appendix 1.
36. The specific scope and detail of the emerging Local Plan policy and related planning mechanisms will be developed and consulted on through the plan-making process.
37. Cambridgeshire County Council is an upper-tier local authority, it should be noted that consultation related to MSAs is implemented at the local planning authority (District Council) level. District Councils within the Cambridgeshire administrative area are: City of Cambridge, South Cambridgeshire, Huntingdonshire, Fenland and East Cambridgeshire. It is expected that MSAs will be incorporated into the District Council Local Plans at an appropriate level (as would other safeguarding mechanisms as appropriate). Peterborough City Council is a unitary authority and so consultation will take place within the organisation between relevant sections/departments.

38. MSAs trigger consultation and facilitate discussion between and within authorities when minerals interests could be compromised by proposed non-minerals development. As such discussion of such matters will occur between the District and County Councils within the administrative area of Cambridgeshire and internally within Peterborough. Where the MSAs abut the administrative boundary it is expected that cross-boundary discussions will take place where a development is proposed on an adjoining authority's boundary that may impact on safeguarding of mineral resources.
39. It is not necessary for every planning application within a MSA to be subject to such consultation. Consultation requirements for MSAs will be set out through the emerging MWLP and include a development threshold that reflects the level of risk (of sterilisation) associated with the development proposals. For example, planning applications for 'minor' development such as an extension to an existing dwelling house within the settlement boundary may present little risk and therefore may not require consultation. In addition some development could be considered exempt. Thresholds for exempt (minor) development may be derived from the Town and Country Planning (General Development Procedure) Order 1995 as these are widely recognised and will simplify procedures.
40. The specific scope and detail of the emerging Local Plan policy and related planning mechanisms will be developed and consulted on through the plan-making process.

Other land use plans within Cambridgeshire and Peterborough

41. District Councils within the administrative area of Cambridgeshire are: City of Cambridge, South Cambridgeshire, Huntingdonshire, Fenland and East Cambridgeshire. Peterborough City Council is a unitary authority. Each of these is at varying stages regarding the preparation of Local Plans. Cambridgeshire and Peterborough will have regard to the adopted and emerging Local Plans, and other relevant plans and strategies, at an appropriate level throughout the preparation of the MWLP.
42. Local Plans prepared by the District Councils and non-minerals and waste Local Plans prepared by Peterborough City Council should have regard to the emerging MWLP and, specifically regarding safeguarding of mineral resources, should not include policies and proposals in Local Plans for non-minerals development or sensitive development around safeguarded mineral areas that may result in sterilisation of mineral resources; these plans should also reflect areas identified as MSAs in their Policies Map, as well as other safeguarding mechanisms as appropriate (e.g. MACAs).

Appendix 1: Distribution of mineral resources



Map A1.1: Distribution of mineral resources within the plan area

Derived from British Geological Society Geology 50K and Mineral Resources data 1:50,000 digital data under licence 2017/134B(Cambridgeshire County Council) and 2007/110D (Peterborough City Council) British Geological Survey. Copyright NERC.

Appendix 2: Proposed developer reporting requirements for the assessment of potential mineral reserves in Mineral Safeguarding Areas

Proposers of surface development on mineral resources need to supply information to the MPA that quantifies the extent and nature of the mineral deposit and whether it is of suitable quality that would indicate that it is a potential economic reserve in mineral resource terms. Specialist advice should be sought for this work. Applicants may want to contact BGS directly or seek appropriate geological advice. The BGS is unlikely to hold detailed information on specific sites; as such a reconnaissance study of the mineral resources of the land in question will be needed.

A programme of investigation, based on best available information, should be prepared and involve the drilling of boreholes and removal of some bulk samples for testing. The results of the programme of investigation should address the following:

- i. Identification of mineral resources on-site.
- ii. Depth of mineral resources. A representative number of boreholes would need to be carried out providing coverage across the site. For example, for sand and gravel on a simple site with flat topography would need a borehole density of 1.3 boreholes per hectare of site area or a maximum spacing of 140 metres between boreholes. If the boundary of the mineral resource runs through the land in question then a number of additional boreholes would be needed to ascertain the edge of the deposit.
- iii. Distribution of the mineral resource and any areas of barren ground if present.
- iv. Estimated volume of mineral resources within the land taking into account:
 - a. any excavation standoff distances from boundaries to support adjacent land; and
 - b. safeguarding of any known infrastructure within the site e.g. high pressure gas mains.
- v. Quality of the mineral resource providing evidence such as sampling of any deposit, e.g. recording the ratio of sand to gravel (by grading analysis) and checking for any contaminants such as chalk or lignite.

The results of the survey should be presented in the form of a report produced by a Chartered Geologist. Should information indicate that the mineral deposit should not be regarded as a potential economic resource in mineral terms then the reasons for this should be clearly stated.

The report should also make it clear if there is any intention to recover the mineral resource during the carrying out of the development. In certain cases this may be possible e.g. a landscaped water feature could provide an opportunity to recover some of the resource. If the resource is to be sterilised justification for this decision should be given.