

Cambridgeshire County Council and Peterborough City Council

Mineral Safeguarding Areas

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

January 2019



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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 (NPPF), published July 2018, requires that all Mineral Planning Authorities (MPAs) in preparing their Local Plans define Minerals Safeguarding Areas (MSAs) and adopt appropriate policies so that known locations of specific minerals resources of local and national importance are not sterilised by non-mineral development. Such development should be avoided whilst not creating a presumption that the resources defined will be worked (paragraph 204). MSAs should be set out on the Local Plan policies map. In addition Minerals Consultation Areas (MCAs) should be defined based on the MSAs (National Planning Policy Guidance, NPPG, Minerals, paragraph 003).
4. In the Further Draft Minerals and Waste Local Plan (MWLP) 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. These buffers are defined as Mineral Allocation Consultation Areas (MACAs) in the Further Draft MWLP.
5. The designation of MSAs in the MWLP does not create a presumption that resources defined will be worked, nor do they preclude other forms of development from being permitted. The MWLP includes a policy to encourage the prior extraction of minerals, where practicable and environmentally feasible, if it is necessary for non-mineral development to take place.
6. MSAs are a planning tool, acting as a sign-post for the presence of mineral resources at risk of being sterilised by non-mineral development, and to facilitate local mineral safeguarding policies. Due consideration should be had to the presence of MSAs throughout the planning process, including both the preparation of District Local Plans (i.e. site allocations)

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

and during the development management process (i.e. determination of planning applications).

7. The broad methodology for defining MSAs has been developed in accordance with the NPPF, NPPG 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

8. Consultation on the draft methodology for identifying mineral safeguarding and consultation areas was undertaken alongside consultation on the Preliminary Draft MWLP during the period May - June 2018.
9. Undertaking consultation helped 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. 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. No responses that specifically commented on the draft methodology, or additional evidence regarding the extent of mineral resources, were received during the consultation on the Preliminary Draft Plan.
11. The final methodology used for the identification of MSAs within the plan area and used to inform preparation of the MWLP, is set out in this document.

Identifying mineral resources

12. 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.

13. 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)
14. Mineral resources are identified by the BGS Mineral Resource Information and Map², which delineates and describes the geographical distribution of all onshore mineral resources of historic, current or potential economic interest in the area.
15. 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) has been 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 has also been taken into consideration in defining the MSAs (no such evidence was submitted through consultation on the draft methodology May 2018).
16. 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 (including for non-conventional hydrocarbons) and negligible coalbed methane development potential (BGS 2003).

Sand and gravel

17. Economically, sand and gravel is the most important mineral resource within the plan area. The resources occurs 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.
18. River sand and gravel resources (terrace and sub-alluvial deposits) 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

² 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

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.

19. 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.
20. 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.
21. 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

22. Cambridgeshire and Peterborough have 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.
23. 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.
24. 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.
25. 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 in 2019; the results of which will be taken into account as appropriate through the plan making process.

26. 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

27. 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

28. 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.

Methodology for identifying mineral safeguarding and consultation areas

29. The methodology for identifying mineral safeguarding and consultation areas within the administrative area of Cambridgeshire County and Peterborough City Councils is set out below:
 - 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.
 - Mineral resources of local and national importance formed the basis of identifying the extent of the MSA boundaries, 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.
 - A 250m buffer was applied around all mineral resources and these buffers form the boundary of the MSAs. Buffers help to account for encroachment of non-minerals development that could potentially result in sterilisation of the resource.
 - The boundaries for MCAs are taken to be coterminous with (i.e. the same as) that of the MSAs.

- Regarding brick clay, the MSA includes (in addition to that identified by the BGS mineral resource maps) two areas where an extension has been included based on information supplied by industry as part of the adopted Core Strategy plan-making process. These areas are: north of Bythorn / Molesworth and west of Ramsey St Mary's / Pondersbridge / Whittlesey.
- Areas and sites that were previously worked and those that have extant planning permission were not removed from the MSAs.
- Environmental designations were not removed. This is because 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).
- Urban areas were not removed. The Plan includes exemption criteria to avoid unnecessary consultation and assessment requirements. This reflects that mineral resources are present and there may be opportunities for future extraction where associated with large redevelopments (BGS 2011, paragraph 4.2.10) in line with the Plan's policies.
- MSA mapping (including associated buffers) for Cambridgeshire and Peterborough extends up to the administrative boundaries of Cambridgeshire County and Peterborough City Councils.
- MSAs of adjoining MPAs were viewed where made publicly available online (e.g. interactive mapping) to inform the identification of MSAs within Cambridgeshire and Peterborough.

Assumptions, limitations and uncertainties

30. The following assumptions were made in identifying the MSAs:
- Mineral resources were taken to be those identified on the BGS Mineral Resources Map and BGS digital mapping. The BGS Mineral Resources Map (and the other data sources listed) 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.
 - Regarding brick clay the information supplied by industry as part of the adopted Core Strategy plan-making process is taken to still apply.
 - The following resources found within the plan area were not considered of local or national importance due to the lack of current and future demand for product and therefore do not require safeguarding: sand and gravel – head gravels and bedrock sand deposits; and other limestone's (i.e. other than Lincolnshire limestone).
 - No technical limits were applied to the digital dataset, e.g. application of a minimum threshold size, grouping of smaller deposits and inference of larger deposits.
 - Buffers of 250m have been applied around mineral resource polygons to define the MSAs to ensure an adequate safeguarding margin.

31. The resulting MSAs within the plan area are illustrated in Appendix 1. 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

32. 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 and Peterborough Minerals and Waste Core Strategy July 2011 Mineral Safeguarding Areas methodology,
 - 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

33. The emerging MWLP carries the adopted policy intent forward, amended to align with NPPF requirements. The identification of mineral resources included in the MSAs reflects the methodology used in the adopted plan. This is complemented by a policy in the emerging MWLP 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.
34. The MSAs will act as the trigger for the application of mineral safeguarding policy and related planning mechanisms. Jointly these mechanisms will act to inform strategic planning and development management in relation to mineral resources.
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 identifies developer reporting requirements, set out in Appendix 2.

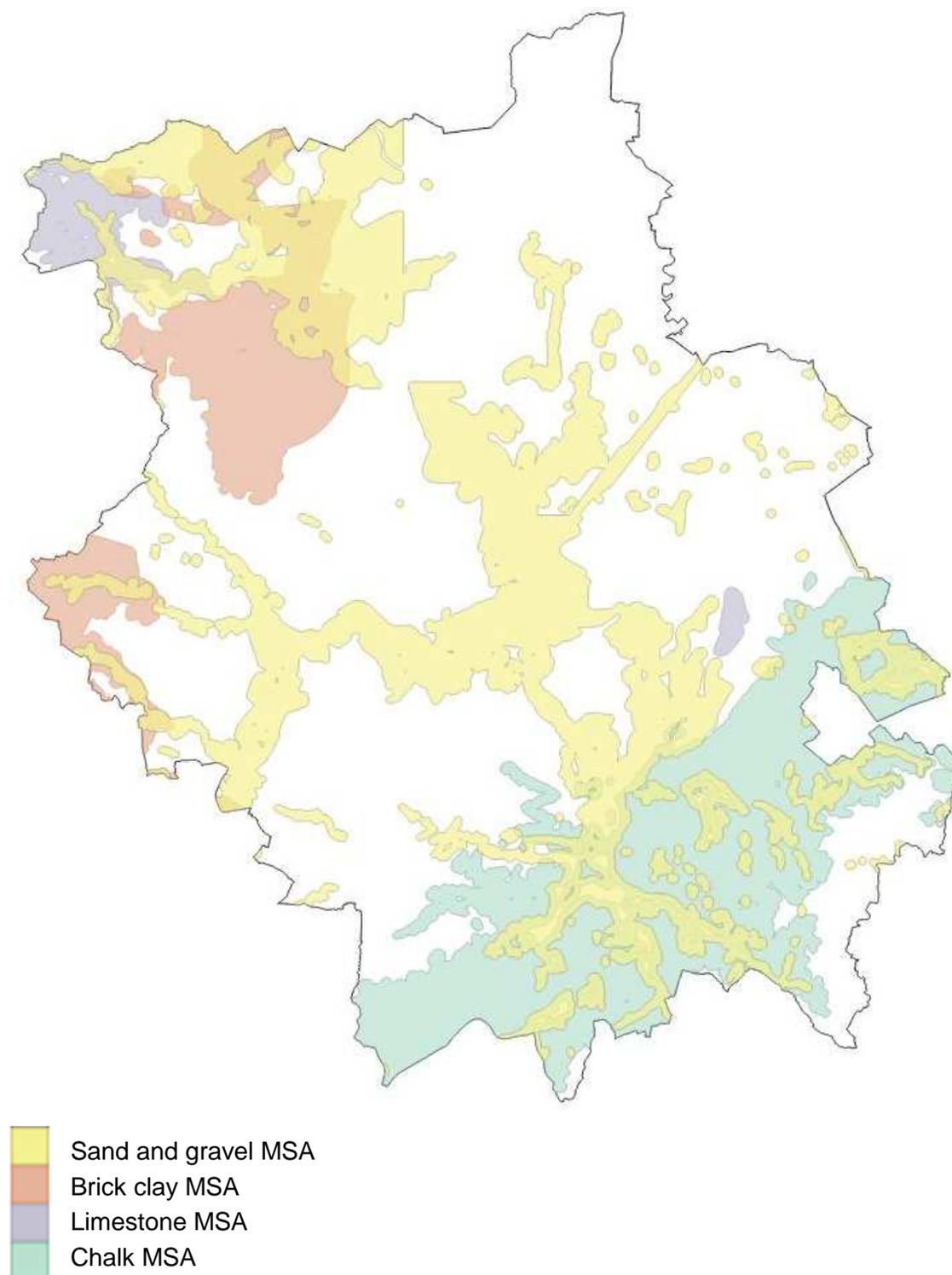
36. The specific scope and detail of the emerging MWLP policy and related planning mechanisms is set out in the MWLP document.
37. Cambridgeshire County Council is an upper-tier local authority, It should be noted that consultation related to MSAs is implemented at the local planning authority (District Council) level. District Councils within the Cambridgeshire administrative area are: City of Cambridge, South Cambridgeshire, Huntingdonshire, Fenland and East Cambridgeshire. Peterborough City Council is a unitary authority and so consultation will take place within the organisation between relevant sections/departments. MSAs (along with other safeguarding mechanisms) will be incorporated into the District Council Local Plans' policies maps and the policies map for the Peterborough Local Plan.
38. MSAs trigger consultation and facilitate discussion between and within authorities where there is the potential for mineral interests to be compromised by proposed non-minerals development (and vice versa). As such discussion of such matters will occur between the Districts and the County Council 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 is 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 or development within the settlement boundary are considered to present little risk and therefore do not require consultation. In addition some forms of development are exempt. Thresholds for exempt (minor) development were derived from the Town and Country Planning (General Development Procedure) Order 1995 as these are widely recognised and adoption of existing mechanisms assists in simplifying procedures.
40. The specific scope and detail of the emerging MWLP policy and related planning mechanisms is set out in the MWLP document.

Other land use plans within Cambridgeshire and Peterborough

41. The District Councils within the administrative area of Cambridgeshire and Peterborough City Council are at varying stages regarding the preparation of their Local Plans. Cambridgeshire and Peterborough will continue to 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 Peterborough City Council should have regard to the emerging MWLP and, specifically

regarding safeguarding of mineral resources, should not include policies and proposals for non-mineral 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: Mineral safeguarding areas



Map A1.1: Mineral safeguarding areas 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.