

Oxfordshire Minerals and Waste Plan Minerals and Waste Core Strategy

Background Paper revised April 2012

Non-Aggregate Minerals

Note: This background paper was largely prepared prior to publication of the government's National Planning Policy Framework on 27 March 2012 and it has only been partially updated to reflect this new national policy document.

1. Introduction

- 1.1 This background paper is one of a series which together form part of the evidence base for the Minerals and Waste Core Strategy. The Core Strategy is part of the Minerals and Waste Plan that will set out a strategy and policies for where minerals should be worked and where waste should be managed in Oxfordshire over the period to 2030. More information about the plan can be found on the Council's website: www.oxfordshire.gov.uk
- 1.2 The background papers have been used to identify baseline data and inform the preparation of draft policies for inclusion in the Core Strategy. The papers are intended to present evidence as it stands at this stage. They build on work carried out at the previous preferred options stage, incorporating feedback from that consultation and addressing areas that require further discussion. They also provide an opportunity for stakeholders to check the information to ensure the Council's knowledge and understanding is up to date and robust.
- 1.3 The background papers are 'living draft' documents and may continue to be revised throughout the process of preparing the Core Strategy.
- 1.4 This paper sets out the information which has been collected as part of the preparation of the Minerals and Waste Core Strategy in relation to the presence and production of non-aggregate minerals in Oxfordshire. The paper discusses the non-aggregate minerals which have been worked in the past and focuses particularly on building stone as this is still worked in the county.
- 1.5 The paper presents:
 - A brief description of non-aggregate minerals in Oxfordshire which have been worked historically in the county.
 - A description of the building stone resources in Oxfordshire and identification of sites where building stone is currently extracted.
 - A review of the policy context for planning for building stone provision.
 - A discussion of safeguarding of non-aggregate minerals.

- 1.6 This paper is part of the evidence base for the County Council's Minerals and Waste Core Strategy proposed submission document, which includes policy M5 on non-aggregate mineral working and policy M6 on safeguarding mineral resources.

2. Executive Summary

- 2.1 Section 3 provides a brief description of non-aggregate minerals in Oxfordshire, both those which are currently worked and have been worked historically in the county.
- 2.2 Section 4 describes the types of building stone which have been or are currently being worked in the county. It outlines the national and local planning policies for building stone and provides a brief overview of the link between conservation areas and building stone in Oxfordshire.
- 2.3 Section 5 outlines the policies for safeguarding non-aggregate minerals.
- 2.4 Section 6 lists the consultation responses received to the previous Preferred Options consultation in 2007 and identifies where these are addressed in this paper.
- 2.5 Section 7 identifies some strategic issues associated with provision of non-aggregate minerals and especially building stone in Oxfordshire.

3. Non-aggregate minerals (excluding building stone)

- 3.1 A broad band of chalk outcrops in the south of the county in a broad band running from east to west. The chalk is divided into two categories; low purity and high purity. Low purity (the grey chalk subgroup) has a relatively high clay content. It is about 60m thick in Oxfordshire and is found along the escarpment of the Chilterns and North Wessex Downs. High purity chalk (the white chalk sub group) contains bands of flint and is about 150m thick in Oxfordshire. Chalk was used chiefly in the cement industry, but also in small quantities as an aggregate and as agricultural lime. There are permitted reserves of chalk at Ambrose Quarry in Ewelme, but these are not currently being worked.
- 3.2 Fullers Earth is a term covering a wide variety of clays which are able to absorb grease, oil and water. It was originally used for cleansing or 'fulling' woollen cloth. Fullers Earth occurs in a limited area in south west Oxfordshire, within the Lower Greensand formation to the south of Faringdon. It was extracted at one site at Baulking until 2006 in a form known as calcium montmorillonite. It is a nationally relatively scarce and potentially important mineral but extraction at the Oxfordshire site was no longer able to compete economically with imports from abroad. A further area that was permitted near Baulking (Moor Mill Farm) has not been worked.
- 3.3 The British Geological Survey published research in 1992 entitled 'An Appraisal of Fuller's Earth Resources in England and Wales'. It found that Fuller's Earth resources were limited and that the best prospects of finding potentially economic reserves of fuller's earth were in areas of existing or former working.
- 3.4 The BGS Mineral Planning Factsheet¹ on Fuller's Earth notes that: *'reserves of fuller's earth with planning permission are confined to a small satellite deposit at Moor Mill Farm, about 2km from the plant at Baulking. The deposit...contains the equivalent of about 300,000 dry tonnes of product.'*
- 3.5 Clay is used as construction fill and for lining and sealing landfill sites. Clay is found in many of Oxfordshire's sand and gravel quarries (below the sand and gravel deposits) and there can be benefits both environmentally and economically if the two minerals are worked concurrently. Clay is currently worked at Gill Mill, Sutton Courtenay and Dix Pit. Permission has also been granted for its extraction at Finmere. All these permissions are for use to line and cap landfill sites. Clay may also be used in the manufacture of bricks and roof tiles. Currently there are no brick and tile manufacturing sites in Oxfordshire. However, clays that are, or have been exploited in Oxfordshire or other counties with

¹ British Geological Survey & Office of the Deputy Prime Minister (2006) Fuller's Earth: Mineral Planning Factsheet

similar geology, including Oxford Clay, Kimmeridge Clay, Gault Clay, Reading Formation and clay with flints, are also present in Oxfordshire and may constitute a resource in the future.

- 3.6 Annex 2 of MPS 1 notes that:
'When developing planning policies and considering planning applications, MPAs ... should take account ... of the need to recognise the potential for sales of clay for other uses, particularly engineering purposes, such as lining, daily cover and capping material for landfill sites'.(para 3.4)
- 3.7 Concealed coal measures underlie much of the northern and western parts of Oxfordshire, at depths of between 300 and 1500 metres. The coal seams are thin and are of no current economic interest. Coal bed methane is a form of natural gas which can be extracted from un-mined coal seams. It is a renewable resource, because the bacterial action that forms the methane is ongoing. Annex 4 of MPS 1 encourages the extraction of methane from coal beds as an alternative source of energy, where its extraction is environmentally acceptable. The Coal Measures succession in Oxfordshire is not considered to be economically viable for Coal Bed Methane because of its low gas content. The County Council is not aware of any proposals to develop coal bed methane in the coal beds of Oxfordshire over the next 20 years.

4. Building stone²

- 4.1 The geology of Oxfordshire is diverse. The outcrops of rocks progress across the county, with the oldest rocks of Lower Jurassic age in the north, and the youngest of Upper Cretaceous age in the south. A table showing building stone resources in Oxfordshire is at Appendix 1.
- 4.2 The oldest stone is marlstone, also known as Hornton Stone or Banbury Ironstone. It is an iron-rich limestone which weathers to a golden orange/brown colour. Many cottages in villages such as Great Tew, Deddington, Adderbury and Bloxham are built from marlstone. It was also used in the construction of stately homes such as Broughton Castle and Chastleton House and for ornamental work on the Christ Church Buildings in Oxford. It is still worked in Oxfordshire.
- 4.3 Clypeus Grit is a coarse grained, pale buff oolitic limestone which only occurs in the west of the county and thins to the east; it is no longer worked in Oxfordshire.
- 4.4 Chipping Norton limestone is a medium to coarse grained oolitic limestone and historically has been quarried extensively around Chipping Norton and Charlbury. Many cottages in the Chipping Norton

² Strategic Stone Study: Building Stone Atlas of Oxfordshire (2009) English Heritage, Oxfordshire Geology trust, British Geological Survey, Department for Communities and Local Government

area are built of this stone, which is still worked in the county at Castle Barn Quarry, Sarsden.

- 4.5 Taynton stone is an oolitic limestone which is strong and durable and was quarried for hundreds of years from quarries around Taynton village, near to Burford. It has been used in many of the Oxford colleges and has also been transported and used in buildings such as Windsor Castle and St Paul's Cathedral. It is no longer quarried in Oxfordshire.
- 4.6 Other types of building stone that have been quarried in the past in Oxfordshire include Stonesfield slate, Bladon stone, Forest Marble and Headington stone. Stonesfield slate is a flaggy grey sandstone found in a limited area around Stonesfield. It can be split into thin tiles and was widely used for the roofs of Cotswold cottages and Oxford colleges until the mid 18th century. It has now been almost completely worked out. Bladon stone was used in building the 14th century Merton College Library in Oxford and in walling in 19th and 20th century buildings. Forest Marble is a richly fossiliferous limestone which was quarried in the Wychwood Forest area for building stone, walling stone roofing tiles and ornamental stone. Headington stone was used during the 18th and 19th centuries in the construction of the Radcliffe camera and the gate pillars of County Hall.
- 4.7 Further south in the county, Upper Portland stone was once quarried around Great and Little Milton and Great and Little Haseley. Chalk block was quarried in the 17th century from a small area in south west Oxfordshire and can be seen in buildings around Ashbury, Uffington and Woolstone. A less durable chalk clunch is seen in buildings along the base of the chalk escarpment, at Wallingford, Watlington and Benson. It is quite friable and flakey due to its tendency to absorb water.
- 4.8 Two quarries currently produce only building stone in Oxfordshire; they are Great Tew quarry which has planning permission to extract and sell approximately 95,000 tonnes marlstone to be worked by 31st December 2017 and Castle Barn quarry, Sarsden which has planning permission to extract and sell between 3,300 and 5,000 tonnes limestone per annum until 2020. Other limestone & ironstone quarries which mainly produce aggregates but also produce some building or walling stone include Burford, Alkerton, Wroxton and Rollright.
- 4.9 To ensure the continued supply of building stone, paragraph 3.6 of MPS 1³ states that:
MPAs and LPAs should have regard to the local, regional and national need for certain building and roofing stones for the conservation and restoration of England's historic built environment where their use is specified:

³ Minerals Policy Statement 1 (2006) Planning and Minerals

- *because of aesthetic or technical properties, particularly where English Heritage advises that stone used for restoration or conservation purposes must be a compatible match, usually from a similar lithological horizon as the stone that was originally used;*
- *to help meet the objectives of PPS 5*

and paragraph 3.9 notes that:

'MPAs should, as far as is practicable, identify in their LDDs, quarries of importance to the built heritage, whether disused or active, and describe the approach to be taken to these in terms of minerals and other planning applications.'

4.10 Planning Policy Statement 5⁴ states that:

'local development frameworks should set out a positive, proactive strategy for the conservation and enjoyment of the historic environment in their area, taking into account the variations in type and distribution of heritage asset, as well as the contribution made by the historic environment by virtue of:

- (i) its influence on the character of the environment and an area's sense of place*
- (ii) its potential to be a catalyst for regeneration in an area, in particular through leisure, tourism and economic development*
- (iii) the stimulus it can provide to inspire new development of imaginative and high quality design*
- (iv) the re-use of existing fabric, minimising waste*
- (v) its mixed and flexible patterns of land use that are likely to be, and remain, sustainable.'*

4.11 Much of the oolitic limestone in the north west of the county lies within the Cotswolds Area of Outstanding Natural Beauty (AONB). The Cotswolds Management Plan 2008-2013 notes in its Natural Resources section that:

'Seams of high quality limestone occur within the AONB and have been quarried extensively for centuries. These represent a very valuable resource. It is important to maintain supplies of high quality building stone to ensure that repairs and new buildings can be constructed in a way that is in keeping with their distinctive surroundings, particularly within the Cotswolds area itself, but also at important sites elsewhere.'

4.12 The Minerals and Waste Local Plan was adopted in July 1996 and covered the period to 2006. Under the Planning and Compulsory Purchase Act 2004, certain policies of that plan have been 'saved' until such time as they are replaced by new policies in the emerging Minerals and Waste Development Framework.

4.13 Policy SD3 is a 'saved' policy. It states that:
'Planning permission will not normally be granted for new limestone and

⁴ Planning Policy Statement 5 (2010) [Planning for the Historic Environment](#)

chalk quarries..... Very small quarries to supply traditional local building stone to the immediate area may be permitted as an exception to this policy.'

- 4.14 Paragraph 2.24 also notes that:
'there may be cases where a very small quarry to supply traditional local building stone is acceptable, even possibly within an Area of Outstanding Natural Beauty (AONB).'
- 4.15 District Local Plans and emerging new development plan documents provide the local planning policy basis for development and investment for the five districts within Oxfordshire. The active building stone quarries are in Cherwell and in West Oxfordshire Districts. The current local plans for these districts do not have any policies specific to building stones. However, the preservation of special characteristics within the historic built environment is addressed through West Oxfordshire's design guide.
- 4.16 Paragraph 2 'Local Characteristics' of the West Oxfordshire Design Guide⁵ notes that;
'The architectural and landscape character of West Oxfordshire is chiefly determined by the local oolitic limestone underlying much of the District.'
- 4.17 A Conservation Area is defined as an '*area of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance.*'⁶
- 4.18 The use of local building stone is characteristic of many buildings and historic places in Conservation Areas. There are 200 Conservation Areas in Oxfordshire, distributed between the Districts as follows: Oxford City – 16; South Oxfordshire– 24; Vale of White Horse – 52; West Oxfordshire – 50; Cherwell – 58.
- 4.19 Many of the Conservation Areas are linked to local geology. For example, the designation of many of the villages in Cherwell and West Oxfordshire as Conservation Areas is related to the stone from which their buildings are constructed. A diagram showing building stones used in villages is at Appendix 2.
- 4.20 Large quantities of waste stone are often generated, particularly in the initial phases of extraction of building stone. Waste stone can potentially have a use as aggregate; the use or disposal of it is an issue which needs to be considered on a case by case basis at the planning application stage.

⁵ West Oxfordshire Design Guide, adopted as Supplementary Planning Guidance on 27th September 2006.

⁶ Section 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990

5. Safeguarding non-aggregate minerals

- 5.1 National planning policy on minerals safeguarding is set out in Minerals Policy Statement 1 (MPS 1) Minerals and Planning, 2006. This is accompanied by a Good Practice Guide to help planning authorities and other interested parties interpret Government policy at the more local level.
- 5.2 Paragraph 9 of MPS 1 states that one of the Government's objectives for minerals planning is to safeguard mineral resources as far as possible. Paragraph 10 goes on to state that to achieve this objective, Mineral Planning Authorities should:
'define Minerals 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.'
- 5.3 Annex 2 of MPS 1 notes in para 2.1 that an objective of the document is *'to safeguard and where necessary, stockpile supplies of clays'*.
- 5.4 Para 3.2 of Annex 3, Natural Building and Roofing Stone of MPS 1 states that:
'English Heritage and the industry are encouraged to make mineral planning authorities (MPAs) aware of important sources of building and roofing stone that they consider should be safeguarded from other forms of development through policies in their local development documents (LDDs). Safeguarding will be most appropriate where stone is believed to be of suitable quality, and is:
➤ *scarce in terms of its technical properties and/or aesthetic characteristics; or*
➤ *has been identified as having characteristics which match those required for repair and preservation purposes, including those related to individual, or groups of culturally important buildings.'*
- 5.5 The government's National Planning Policy Framework (NPPF) was published on 27 March 2012 and has replaced MPS 1 with immediate effect. The NPPF states that *"local planning authorities should define mineral safeguarding areas 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"* (para 143).
- 5.6 With specific reference to building stone, the NPPF states that *"local planning authorities should consider how to meet any demand for small-scale extraction of building stone at, or close to, relic quarries needed for the repair of heritage assets"* (para 144).
- 5.7 It is difficult to identify workable building stone resources without detailed geological information, and without being site specific. Building stone quarries are small scale, with low output, and the quality of stone

and suitability for working as building stone is very variable. Therefore building stone resources are not proposed to be safeguarded in the consultation draft minerals planning strategy.

- 5.8 There is no current working of chalk in Oxfordshire. Working of chalk for cement manufacture is no longer economically viable and there is no current demand for chalk for agricultural lime or construction use. The chalk resource in Oxfordshire is extensive. It is therefore considered that this resource does not need to be safeguarded.
- 5.9 Clay is now only worked in Oxfordshire to supply material used in the engineering of landfill sites. Occurrence of this mineral is widespread in Oxfordshire and it can be worked in conjunction with sand and gravel extraction. It is considered that clay resources do not need to be separately safeguarded.
- 5.10 Fuller's Earth is a nationally scarce and potentially important resource. Therefore, although working of this mineral is not currently economically viable, it is considered that identified resources should be safeguarded; this is addressed in Mineral Profile 6 in the topic paper on mineral safeguarding.

6. Consultation responses; Preferred Option 2007

- 6.1 Table 1 shows the consultation responses which were received on the first Minerals and Waste Core Strategy Preferred Options consultation, in 2007, and identifies any actions proposed to be taken.

Table 1: Consultation responses to Preferred Options consultation, 2007

Consultation responses to Minerals and Waste Core Strategy Preferred Options, 2007	Action proposed to be taken
It was suggested that as well as safeguarding aggregate resources, the Core Strategy should also safeguard natural stone resources, which may be suitable for maintenance of historic buildings and monuments.	Paragraph 5.7 above explains why policies in the Core Strategy do not propose to safeguard building stone resources.
The framework should provide a policy on mineral site extensions.	This is covered in policy M5 on non-aggregate mineral working.

7. Summary of issues for non-aggregate minerals in Oxfordshire

7.1 This paper has identified the following issues relating to non-aggregate minerals which require further consideration:

- (i) The use or disposal of waste stone from building stone extraction, particularly in the initial stages of quarrying, should be taken into account in the consideration of planning applications.
- (ii) Clay, chalk and coal bed methane resources are of limited or no economic importance and do not need to be safeguarded in the Minerals and Waste Plan.
- (iii) Building stone resources should not be safeguarded in the Minerals and Waste Plan due to their localised occurrence and variable nature and the small scale of quarry operations.
- (iv) The Fuller's Earth in the south west of the county is a nationally scarce resource of potential importance and should be safeguarded in the Minerals and Waste Plan.

Appendix 1 Table of Oxfordshire's main building stones

Geological Period	Geological Name	Examples of local stone names
Upper Cretaceous	Chalk	
Upper Jurassic	Corallian Group	Headington Hardstone
Middle Jurassic	Great Oolite Group	Forest Marble Bladon Stone Taynton Stone Stonesfield Slate Chipping Norton limestone
	Inferior Oolite Group	Clypeus Grit
Lower Jurassic	Middle Lias	Marlstone/Hornton Stone/Banbury Ironstone

Appendix 2 Village building stones in Oxfordshire

