Hertfordshire Minerals Local Plan

Proposed Submission January 2019



Spatial Planning Unit

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Hertfordshire

HERTFORDSHIRE MINERALS LOCAL PLAN

Proposed Submission 2019

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1 Introduction

What is this Document?

1.1 The Proposed Submission Minerals Local Plan is the minerals planning document that the county council intend to submit to the Secretary of State for consideration by an independent Planning Inspector. Subject to an Examination in Public and the Inspector's Report, the document will be adopted by the County Council and used to determine planning applications. Once adopted, the Minerals Local Plan will become part of the statutory Development Plan for Hertfordshire.

1.2 The Proposed Submission Minerals Local Plan will be referred to as 'the Plan' throughout this document and is being published by the county council as a Plan which it believes is a sound basis for future decision making.

Purpose of the Proposed Submission Minerals Local Plan

1.3 Minerals are important natural resources which make an essential contribution to the nation's prosperity and quality of life. Sand, gravel, crushed rock, chalk and clay all provide the construction industry with the raw materials required for constructing and maintaining roads, buildings and other infrastructure.

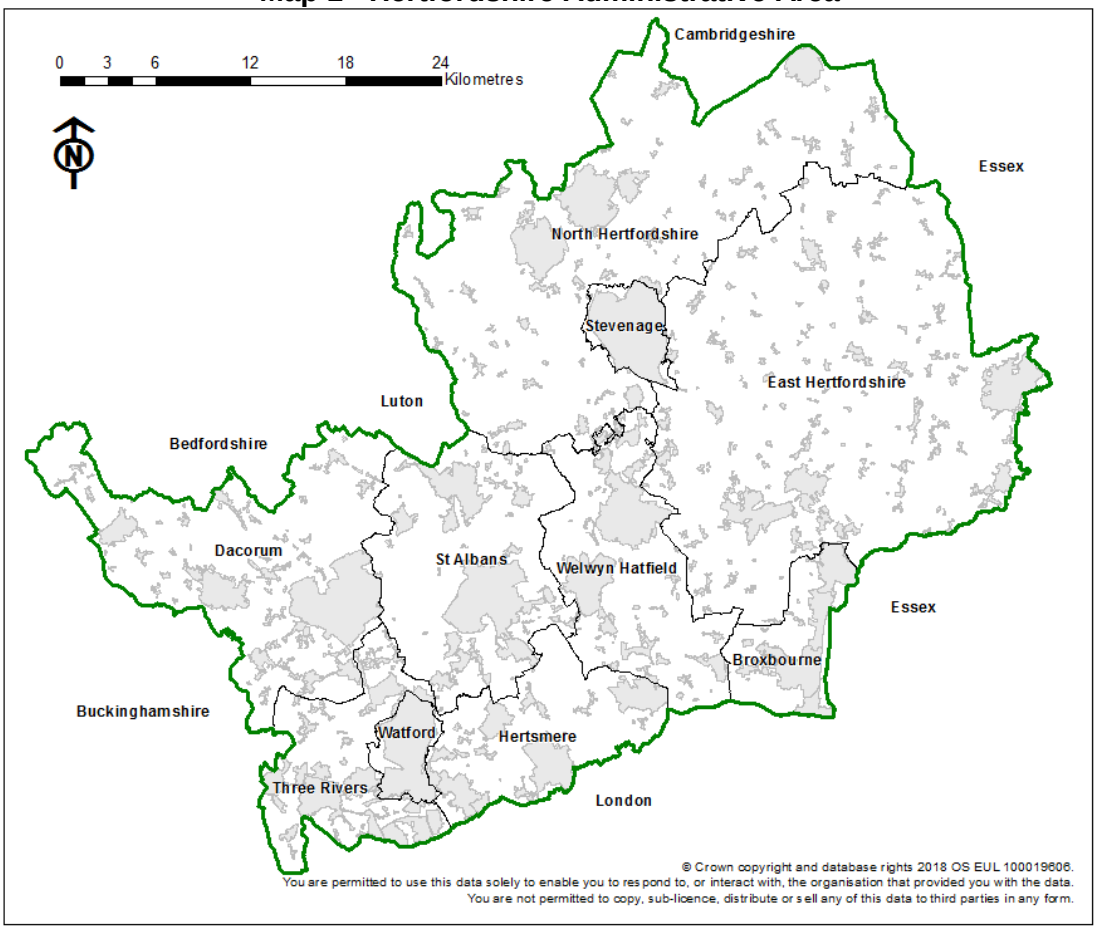
1.4 Minerals such as coal, oil and gas are essential sources of energy and enable the production of electricity and heat. Minerals are also essential elements in the production of a variety of other products. A steady and adequate supply of minerals is essential if current standards of living are to be maintained and for the economy to grow to meet the future housing requirements as the population increases.

1.5 Minerals are a limited natural resource and can only be extracted where they naturally occur. Minerals planning is essential to secure the sustainable availability of minerals and conservation of the existing environment.

1.6 Hertfordshire County Council is the Minerals Planning Authority (MPA) for the county of Hertfordshire, as defined in Map 1. The county council has a statutory responsibility to plan for future minerals supply within Hertfordshire and determine proposals for the extraction of minerals, reclamation and associated development. Associated development might include, but is not limited to, processing plants, machinery and on-site buildings and decisions should be made in accordance with the policies in this Plan.

1.7 The Plan has been prepared to meet these purposes, setting out: the spatial portrait of Hertfordshire; the vision and objectives for minerals development in the county during a 15 year period from the point of adoption; and policies to implement the Plan's vision and objectives. It considers the need to contribute to national, sub-national and local mineral requirements and seeks to balance these needs against social, environmental and economic considerations.

Map 1 - Hertfordshire Administrative Area



1.8 The document identifies sites and areas for mineral extraction as well as mineral reserves and infrastructure that should be safeguarded for future use.

1.9 The Plan should be read in its entirety so that all the information included can be used collectively to ensure the provision of minerals is met for the projected growth of the county, whilst maintaining and enhancing the environment and natural surroundings.

Preparation of the Plan

1.10 As can be seen in Table 1, this publication, highlighted in bold, is just one stage of the process to adopt a new Minerals Local Plan for Hertfordshire.

Table 1 - Timetable for the Production of the Minerals Local Plan

2014-2015		Evidence Gathering
2015	Spring	Stakeholder event
2015	Summer	Initial Consultation publication
2016	Spring	Call for Sites
2017-2018	Winter	Draft Plan consultation
2019	**January**	**Proposed Submission Plan Publication**
2019	Summer	Submission to Secretary of State
2020	Summer	Adoption of Minerals Local Plan.

1.11 The county council has prepared the Plan taking account of representations submitted in response to the Minerals Local Plan Initial Consultation document (2015) and the Draft Minerals Local Plan (2017) as well as ongoing engagement with a number of stakeholders including statutory consultees, the ten Hertfordshire district and borough councils, and adjoining authorities. In the preparation of this document, comments were sought on the wording of policies, the supporting text and site-specific planning briefs.

1.12 A six week Call for Sites exercise ran from February to April 2016 where the county council asked landowners and members of industry to put forward sites within Hertfordshire that contain mineral reserves that may be suitable for extraction. Based on the submitted sites and a separate review of the mineral reserves in the county, external consultants undertook a detailed site assessment to assess and identify the most suitable sites to provide sand and gravel throughout the Plan period. The results of this assessment informed the selection of sites for the Plan.

1.13 A Sustainability Appraisal (SA), incorporating the requirements of the European Union (EU) Strategic Environmental Assessment (SEA) Directive, has been carried out to inform the ongoing preparation of the Plan and to ensure sustainable development concerns are fully integrated and alternative options are considered. In line with these, a SA report has been published alongside the Plan.

1.14 In addition, the Plan is founded on an extensive evidence base. Background topic papers have been published alongside the Plan to provide further information about a range of issues covering Government guidance, technical reports and prior engagement, all of which have helped shape the Plan.

The Proposed Submission Minerals Local Plan's Legal Status

1.15 This version of the Plan has been published in accordance with Regulation 19 of the Town and Country Planning (Local Planning) (England) Regulations 2012 (as amended). As such, it does not have any formal status in development management (decision making) terms, does not form part of the Development Plan for Hertfordshire and only limited weight may be applied to the policies included in this document.

2 Commenting on the Plan

Commenting on the Proposed Submission Minerals Local Plan

2.1 The county council is publishing this document because it considers that it provides a comprehensive basis for making future decisions. In planning terms, this is referred to as 'soundness'. For a Plan to be confirmed as sound by an independent Planning Inspector, it must be demonstrated that the Plan is positively prepared, justified, effective and consistent with national policy[1].

2.2 The purpose of publishing a Regulation 19 planning document is for consultees to submit comments on the document regarding the four tests of soundness. As such, consultees should consider whether the Plan: provides a strategy to meet the area's objectively assessed needs; provides an appropriate strategy that takes account of reasonable alternatives and is based on proportionate evidence; contains proposals that are deliverable over the Plan period; and enables the delivery of sustainable development in line with national policy.

2.3 Responses can be submitted either through the county council's **online consultation portal (Objective)** or by sending completed response forms, available online or from the consultation portal, to us either by email or letter.

2.4 A full list of options for responding to this consultation is set out below:

Online Consultation Portal:	http://hertscc-consult.objective.co.uk/portal
Email response forms:	minerals.planning@hertfordshire.gov.uk
Address for printed forms:	Minerals and Waste Policy Team Spatial Planning Unit (CHN 216) Hertfordshire County Council Pegs Lane Hertford SG13 8DN
Phone no. for queries:	0300 123 4040

2.5 The Plan is being published for a ten week period starting at **9am on Monday 14 January 2019** and ending at **5pm on Friday 22 March 2019**. Please ensure that responses reach us by the closing date. Please note, information that you provide, excluding personal details, will be publically available for any other person to inspect. All personal data will be deleted following completion of the review.

Next Steps

2.6 Following the end of the publication period, the county council intends to submit the Plan to the Secretary of State in accordance with Regulation 22 of

[1] NPPF, 2018 - paragraph 35

the Town and Country (Local Planning) (England) Regulations 2012 (as amended).

2.7 Once submitted to the Secretary of State, an independent Planning Inspector will consider the representations received and examine the ‘soundness’ of the submitted Plan and provide the county council with a report of their findings and any suggested amendments. The county council will consider any suggested amendments and subject any modifications to the appropriate consultation prior to adopting the Minerals Local Plan, when it will become part of the statutory Development Plan for Hertfordshire.

3 Policy Context

The Planning System

3.1 The planning system was established to regulate the development and use of land. Its main aim is to balance the demand for development against the protection of the environment. Planning decisions are made having regard to the planning system and are taken in the wider public interest.

3.2 To provide a structure to the planning system, planning authorities are given responsibility for preparing, implementing, and reviewing Development Plans, and for determining planning applications (development management). Each planning authority is required to produce a Development Plan document which sets out the land-use policies that will subsequently be used when making planning decisions. This is known as the 'Plan-led system' and is provided for by Section 54A of the Town and Country Planning Act 1990.

3.3 Hertfordshire comprises eleven planning authorities: the county council and ten district and borough councils. The county council, as Minerals Planning Authority (MPA) for the whole county and also as the planning authority for waste planning, is responsible for preparing Local Plans for minerals and waste. The county council determines planning applications for minerals and waste development as well as applications made by the county council for its own development (e.g. highways, schools, hospitals, social services). It is able to impose and enforce conditions on planning permissions to minimise impacts of mineral extraction and associated developments.

3.4 The district and borough councils are responsible for preparing Local Plans which set out policies and identify sites for all remaining development in their respective areas. This includes housing, commercial, retail and recreational development, for which the district and boroughs are responsible for determining planning applications.

3.5 In addition to Local Plans, communities can shape development in their area through the production of a Neighbourhood Plan to help direct the location of development and guide what it will look like. Parish or Town Councils, or community groups in the form of a Neighbourhood Forum, lead on the production of a Plan that will become part of the Development Plan and will be taken into account when determining planning applications.

3.6 The Development Plan for Hertfordshire contains the Local Plans of each of the planning authorities and comprises of the following documents:

- The existing Minerals Local Plan (adopted 2007);
- The Waste Local Plan, which comprises:
    - The Waste Core Strategy and Development Management Policies document (adopted 2012);
    - The Waste Site Allocations document (adopted 2014);
- The 10 district Local Plans;
- Any adopted Neighbourhood Plans.

International/European, National, Sub-National and Local Policy Drivers

International/European

3.7 The key international plans and programmes which are relevant to the Plan include:

- The World Summit on Sustainable Development, Johannesburg (2002); and
- Kyoto Protocol and the UN framework convention on climate change (1997).

3.8 Historically, a number of European Union (EU) Directives have provided the international legislative context for UK Plan-making for minerals. The Strategic Environmental Assessment (SEA) Directive[2] requires the formal environmental assessment of certain plans and programmes. Article 6 of the Habitats Directive[3] requires Local Plans to be assessed for their impacts on European designated sites to avoid adverse impacts on these and must be undertaken when a Plan is being developed.

3.9 Following the decision to leave the European Union, the European Union (Withdrawal) Act 2018 was enacted. This Act will repeal the 1972 European Communities Act, ending the precedence of European law over laws passed in the UK Parliament, meaning that UK laws will not need to comply with relevant EU Directives. The Act enables the transposition of all existing European legislation into UK law to ensure a smooth transition. Therefore, at least for the short term, the legal requirements of UK Plan-making will retain their current form.

National

3.10 The Hertfordshire Minerals Local Plan is being prepared under the Town and Country Planning Act (1990), the Planning and Compulsory Purchase Act (2004) and the Localism Act (2011) as amended.

3.11 The Localism Act introduced the requirement of Duty to Cooperate. This means there is a legal duty on all planning authorities, county councils and prescribed bodies to engage with one another constructively, actively and on an on-going basis on issues of strategic cross-boundary matters. It is a requirement of the act for planning authorities to demonstrate how this cooperation has been achieved at the independent examination of a Plan.

3.12 The Government published the Revised National Planning Policy Framework (NPPF) in July 2018. The NPPF sets out the Government's planning policies for England and how these are expected to be applied, providing a framework within which local authorities can produce their own Local Plans. The Plan is

[2] SEA Directive (2001/42/EC) transposed into British law through the Environmental Assessment of Plans and Programmes Regulations 2004
[3] Habitats Directive (1992/43/ECC) transposed into British law through the Conservation of Habitats and Species Regulations 2010

considered to be in conformity with the NPPF and the emphasis on supporting economic growth and achieving sustainable development has been reflected.

3.13 The National Planning Practice Guidance (NPPG) was launched online in March 2014 to provide additional detail to the NPPF.

Sub-National

3.14 The county council is part of the East of England Aggregates Working Party (EEAWP)[4], which is a technical working group comprising Minerals Planning Authorities that cover specific geographical areas and other interested parties such as the Mineral Products Association. By working together, they are able to obtain better survey data on aggregate supply and demand in that area, which is used by individual authorities and collated in the East of England Authorities' Monitoring Report. This helps provide advice to MPAs and the National Aggregate Co-ordinating group.

3.15 In line with the NPPF, the Plan has taken into account the Local Aggregate Assessment, sub-national guidelines and other local information when basing future demand on the sub-national apportionment. The EEAWP accept the county council's continued use of apportionment figures derived from the National and Regional Guidelines for Aggregates Provision in England 2005-2020 (June 2009) in the production of the Plan. The figures are based on the Managed Aggregate Supply System which now forms part of the NPPG.

Local

3.16 The Plan has been prepared taking account of other Local Plans, policy and guidance including:

- HCC Minerals and Waste Development Scheme 2018;
- HCC Local Aggregate Assessment 2017;
- HCC Statement of Community Involvement (adopted March 2013);
- HCC Corporate Plan 2017-2021;
- HCC Economic Development Strategy 2009-2021;
- Hertfordshire's Local Enterprise Partnership's Strategic Economic Plan;
- HCC Waste Core Strategy and Development Management Policies Document (adopted November 2012);
- HCC Waste Site Allocations Document (adopted July 2014);
- Local Plans for the ten district and borough councils within the county;
- Hertfordshire Local Transport Plan 4 2018-2031;
- Local Nature Partnership Guiding Principles;
- Biodiversity Action Plan for Hertfordshire; and
- Environment Agency Flood Management Plans.

The above plans are a critical component of the Minerals Local Plan and were considered throughout the Plan-making process.

[4] NPPF, 2018 – paragraph 207

4 Key Challenges for Hertfordshire

Introduction

4.1 The mineral industry is vital to the economy and our way of life. Hertfordshire residents enjoy high standards of living, high per capita income and low unemployment. Development is planned by local planning authorities to ensure this continues.

4.2 The growth outlined below will require housing, commercial and industrial buildings, transport networks and other infrastructure. The projected growth must be accounted for by the Plan. Minerals are the largest element of the construction supply chain and a key supplier of other industries. A steady and adequate supply of minerals is therefore essential to facilitate growth.

Population

4.3 The population of Hertfordshire was estimated to be at 1,180,900 in mid-2017. With no dominant city, Hertfordshire is instead characterised by a network of urban areas and its density of 7.19 people per hectare makes it one of Britain's most densely populated counties[5].

4.4 The population of Hertfordshire is projected to increase by 187,700 (15.96%) over the 25 year period from 2016 to 2041[6] with populations for each individual district sharing the increase. East Herts is set to experience the largest increase of 27,600 people by 2041 and Stevenage the lowest increase of 12,000 by 2041[7].

Housing

4.5 National policy requires local authorities (district and borough councils) to identify and update annually, a supply of deliverable sites sufficient to provide five years' worth of housing against their housing requirements (with an additional buffer of 5%). Each of the ten districts in Hertfordshire have set out housing projections within their adopted or emerging Local Plans, based on their area's objectively assessed housing needs. At the time of writing, these range from a target of 180 dwellings per annum (dpa) for Three Rivers District Council to 745 dpa for East Hertfordshire District Council.

4.6 In total, the Hertfordshire districts are planning to provide a total of approximately 90,000 homes by 2031 across the county.

4.7 The county council monitor the number of completed dwellings on an annual basis. Table 2 shows the amount of growth for the ten authorities between 01 April 2016 and 31 March 2018.

[5] ONS, Mid-Year population estimates 2017
[6] ONS, 2016 based sub national population projections, published 2018
[7] ONS, 2016 based sub national population projections, published 2018

Table 2 - Housing Completions by Authority 2016/17 and 2017/18[8]

District / Borough	01 Apr 2016 – 31 Mar 2017			01 Apr 2017 – 31 Mar 2018		
	Gross Comps	Gross Losses	Net Comps	Gross Comps	Gross Losses	Net Completions
Broxbourne	273	22	251	260	19	241
Dacorum	765	41	724	628	42	586
East Herts	666	47	619	613	150	463
Hertsmere	340	31	309	562	23	539
North Herts	556	17	539	345	64	281
St Albans	404	64	340	493	108	385
Stevenage	704	14	690	77	6	71
Three Rivers	164	20	144	286	22	264
Watford	384	38	346	357	28	329
Welwyn Hatfield	370	22	348	314	28	286
Total	4,626	316	4,310	3935	490	3,445

Economic Growth

4.8 Hertfordshire's close proximity to London, strong communication links, highly skilled workforce and good quality of life have attracted a wide range of businesses to the county. Hertfordshire is home to thriving and diverse industries including leading pharmaceutical, bio-technology, financial services, and film- and computer-related businesses. Hertfordshire's employment rate is 78.6%[9] which is greater than the rates for the East of England (77.6%) and UK (74.9%) for the 3 months up to May 2017[10].

4.9 Hertfordshire's Local Enterprise Partnership (LEP) is a business-led partnership between local businesses, academia, voluntary organisations and local government. The LEP aims '*to accelerate business-led growth in Hertfordshire*' and has secured a Growth Deal of £221.5 million from Government for infrastructure, business and skills in Hertfordshire.

4.10 The Growth Deal for Hertfordshire 2015/16-2020/21 focuses on a series of priorities including enhancing housing and employment, enhancing transport connectivity and creating jobs to support the core sector. The Deal will invest in transport infrastructure and investment will aim to provide 16,600 additional homes across the county, 15,000 jobs and the potential to unlock £430m public and private investment.

4.11 The LEP has identified three main principle radial corridors that cross the county which surround the main transport routes. These are the M1, West Coast Mainline and Midland Mainline radial corridor; the A1(M) and East

[8] Hertfordshire County Council, 2016/17 and 2017/18 Surveys
[9] Hertfordshire Local Information System, Quality of Life Report 2017
[10] ONS 2017, Summary of Labour Statistics

Coast Mainline/Great Northern Route radial corridor; and the A10 and West Anglia Mainline radial corridor[11].

4.12 The M1, West Coast Mainline and Midland Mainline radial corridor cuts across the west of Hertfordshire, close to three of the county's largest towns: Watford, Hemel Hempstead and St Albans. The A1(M) and East Coast Mainline/Great Northern Route radial corridor passes through central Hertfordshire, close to Hatfield, Welwyn Garden City, Stevenage and Hitchin. The A10 and West Anglia Mainline radial corridor cuts across the east of Hertfordshire, with links to Hertford, Ware, Broxbourne, Cheshunt and Bishop's Stortford, and in proximity to the M11.

4.13 The railway corridors and road networks in each radial corridor are the focal points to providing economic corridors between London, Hertfordshire and the North. These will help to boost the county's economic activity and mineral provision is essential to this growth.

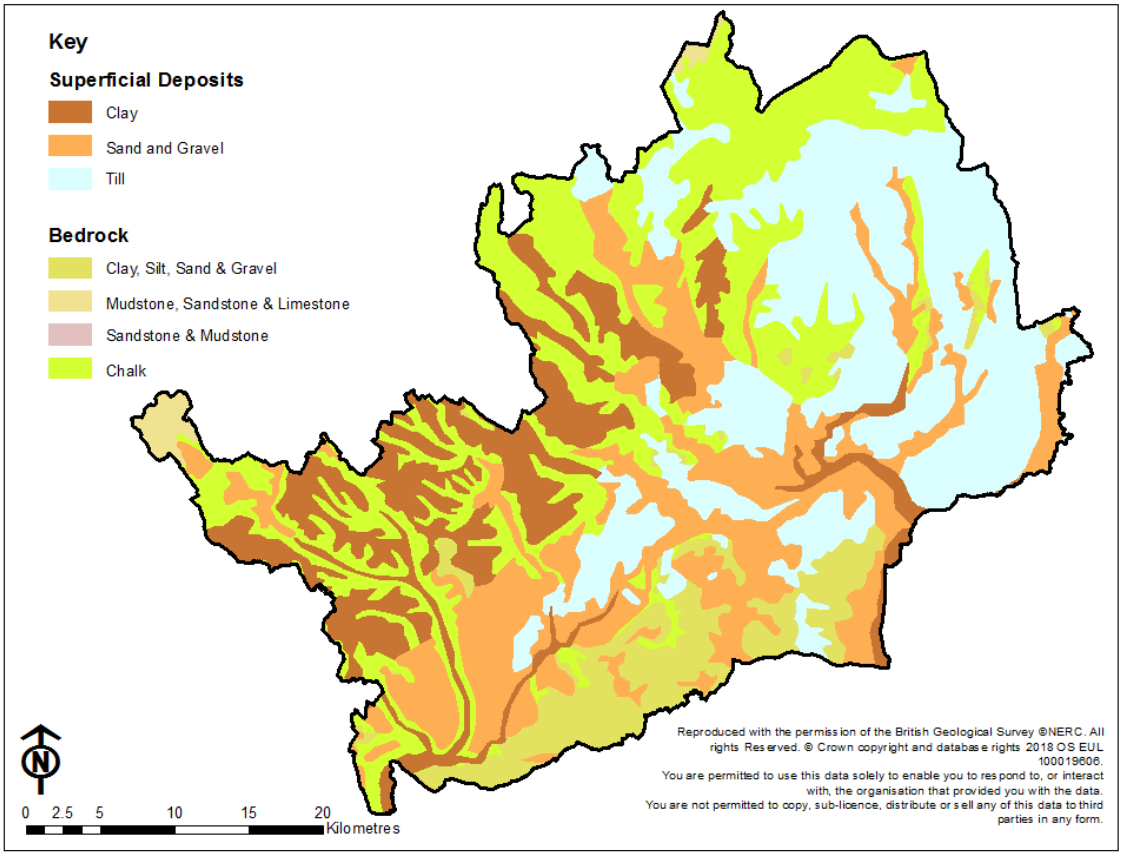
[11] Hertfordshire's Strategic Economic Plan, Hertfordshire Local Enterprise Partnership, July 2017

5 Minerals in Hertfordshire

Hertfordshire's Geology

5.1 The geology of Hertfordshire (shown in Map 2) is relatively simple, being largely Chalk of the Cretaceous period, overlain in the south and east by London Clay and in the far north and northwest by small areas of Gault Clay. Throughout much of the county, superficial deposits overlay the solid geology. These include the Clay-with-flints to the west of Hertfordshire, boulder clay in the centre and east, and gravels in the river valleys and Vale of St Albans.

Map 2 - Geological Map of Hertfordshire



5.2 Superficial deposits of sand and gravel occur throughout the county and the main deposits are found within the 'sand and gravel belt' which runs in an area in the south of Hertfordshire, between Bishop's Stortford in the east and Hemel Hempstead in the west.

The Need for Aggregates

5.3 Aggregates are essential to help secure further economic and social development through the construction industry. This importance has been recognised within the UK Minerals Strategy (July 2018). This was produced by the UK minerals and mineral products industry, facilitated by members of the Confederation of British Industry (CBI) Minerals Groups and the Mineral Products Association, to ensure that UK demand for minerals and mineral

products is supplied sustainably for the next 25 years. The Strategy explains that the country is approaching a critical period, particularly for aggregate supply, as permitted reserves nationwide are declining steadily and are not being replenished at an equivalent rate.

5.4 From a national perspective the UK Minerals Yearbook 2015[12] reported that in the UK in 2014, 56 million tonnes of sand and gravel were consumed along with 98 million tonnes of crushed rock. This figure is a reflection of the need for aggregates in Hertfordshire and the rest of the country.

5.5 A steady and adequate supply of minerals is therefore essential to ensure the maintenance and improvement of existing natural and built environment, along with enabling new developments, for the national economy and Hertfordshire's economic growth.

5.6 In order to maintain a steady and adequate supply, the amount that Hertfordshire should plan for is 1.39 million tonnes per year. The Government set out details of the quantity of mineral needed in a national guidance document[13]. Regional Aggregate Working Parties (AWPs) then shared out this requirement for sand and gravel to individual Minerals Planning Authorities. Further details are provided in Chapter 8: Strategic Aggregate Policies.

Minerals Supply

5.7 The traditional source of aggregates for construction is from reserves in the ground. Aggregates dug from the land are known as primary, land-won aggregates and include sand, gravel and crushed hard rock.

5.8 Minerals are a limited natural resource and can only be extracted where they are found. To ensure a continuous supply of materials in the future, recycling and reusing aggregates is also encouraged alongside the need to extract primary, land-won aggregate.

5.9 At present, primary aggregates are the main source of mineral. The Plan aims to reduce, as far as practicable, the quantity of material required, then to use as much secondary and recycled mineral in development as possible. The Plan looks to secure the remainder of mineral demand through primary, land-won mineral from designated extraction sites.

[12] United Kingdom Minerals Yearbook 2015, Minerals and Waste Programme Report OR/16/021
[13] DCLG, 2009, National and regional guidelines for aggregates provision in England 2005-2020

Minerals Worked in Hertfordshire

5.10 Hertfordshire contains three major types of naturally occurring worked minerals: sand and gravel, chalk and brick clay.

Sand and Gravel

5.11 Sand and gravel (which are generally worked together) are the major aggregate minerals worked in Hertfordshire.

5.12 The sand and gravel from Hertfordshire is mostly used by the construction industry. Most is washed and screened to remove clay particles and to separate the various sized stones and larger stones are usually crushed and screened again. Most sand extracted in Hertfordshire is sharp sand and is suitable for making concrete when mixed with various selections of gravel sizes, cement and water.

Chalk

5.13 The scale of working for chalk has historically been relatively small. Chalk has been quarried at a small number of sites to the north and west of the sand and gravel belt for use as an agricultural lime on farms but is no longer being worked.

Brick Clay

5.14 Historically, brick clay extraction occurred in the west of the county, most recently for use at Bovingdon Brickworks, which was Hertfordshire's last remaining specialist brickworks prior to its closure in 2017.

Hoggin

5.15 One other aggregate excavated in Hertfordshire is hoggin which is a mixture of sand and gravel held together by clay. Hoggin is suitable for use without processing and is often sold 'as raised' from the ground for lower quality purposes.

Imports and Exports

Sand and Gravel

5.16 Of the total land-won sand and gravel sales from quarries in Hertfordshire (1,170,985 tonnes) as reported in the Aggregate Minerals Survey 2014[14], 59% was used within Hertfordshire. Of this figure, 95% was transported by road and 5% by rail. The remaining percentage of sand and gravel was exported to West London (12%), unknown (but within the East of England) (12%), Bedfordshire (8%), East London (5%) and Essex, Southend and Thurrock

[14] Access database supplied with the Aggregate Minerals Survey 2014

(3%). Other exports of sand and gravel went to Cambridge and Peterborough, Derbyshire and the Peak District National Park, Lincolnshire, Northamptonshire, Cumbria and Lake District National Park and Berkshire[15].

Hard Rock

5.17 Hard rock that is crushed may be used in place of local gravel and fines from crushed rock may be used as a substitute for sand.

5.18 Hertfordshire imports crushed rock into the county via the existing rail aggregate depots totalling roughly 520,000 tonnes per annum[16]. Reserves from outside of Hertfordshire will be relied upon for this source of mineral as no hard rock is available for extraction.

Brick Clay

5.19 The NPPF requires a stock of permitted reserves of at least 25 years for brick clay to supply operational brickworks. There are no remaining brickworks in Hertfordshire and so the Plan is not required to identify sites for future clay supply.

Marine Aggregates

5.20 Hertfordshire is a land locked county and as such contains no areas suitable for the dredging of marine aggregates. A relatively small amount of marine sand and gravel is consumed in the county which is imported via Kent and London.

[15] A detailed summary of imports and exports of minerals in Hertfordshire can be found in the Local Aggregate Assessment 2017 for Hertfordshire
[16] Hertfordshire Local Aggregate Assessment 2017

6 Vision and Objectives

Proposed Submission Minerals Local Plan Vision and Objectives

6.1 The Plan sets out the county council's vision for the future and the objectives by which it will be achieved.

Vision

6.2 The following vision has been developed in consultation with key partners and stakeholders.

Vision

Throughout the Plan period, Hertfordshire will continue to provide a steady and adequate supply of sand and gravel to enable local economic growth and support wider and national supply obligations. This will be achieved by permitting sand and gravel reserves within Hertfordshire for extraction and supporting clay extraction to supply specialist brickworks.

The supply of naturally occurring mineral resources of sand, gravel and clay will be conserved for future generations. This will be achieved by employing the sustainable use of minerals by using resources effectively and utilising the supply of alternative materials in construction projects. Prior extraction in cooperation with interested parties will be expected before other development takes place on land.

The sustainable use of minerals will minimise impacts and maximise improvements on the natural, built and historic environments and human health now and in the future. The effects on climate change will be managed as part of mineral development.

High quality restoration and subsequent management of mineral sites will be carried out as early as possible to conserve and enhance the character and quality of Hertfordshire's landscape and environments. Opportunities for outdoor recreation, net gain in biodiversity, improved agricultural land and water management will be delivered.

Objectives

6.3 The following objectives have been developed specifically for Hertfordshire to ensure the vision and the overarching aim of sustainable development is achieved.

Obj1.	To enable sustainable local economic growth by ensuring a steady and adequate supply of minerals across the county to meet the requirements of the Local Aggregate Assessment.
Obj2.	To conserve sand, gravel and clay resources for current and future generations and ensure the continued use of mineral infrastructure.
Obj3.	To encourage the sustainable use of minerals which includes utilising secondary and recycled aggregates, extracting minerals prior to other development taking place, and using minerals in construction on the land from which they are extracted.
Obj4.	To promote/encourage the sustainable transport of minerals by road, rail and water, including the safeguarding of railheads.
Obj5.	To protect people from harm, positively contribute to local residents' health and the natural, built and historic environments.
Obj6.	To ensure that mineral development addresses and minimises the impacts it will have on climate change and how climate change may impact upon it.
Obj7.	To positively contribute to the natural, built and historic environments with high quality, progressive and expedient restoration to achieve a beneficial after-use. The after-use will protect and enhance the environment, including agricultural land, landscape and biodiversity improvements.
Obj8.	To provide benefits for health and wellbeing through positively planned restoration of extraction sites which improve and enhance the county's green infrastructure offer for recreation and physical activity.

6.4 The policies in the Plan will help to meet these objectives. The policies will be monitored using the targets and indicators set out in the tables below each policy to assess how effectively the policies are being implemented. The targets and indicators are set out in Appendix 1.

7 Presumption in Favour of Sustainable Development

Sustainable Development

7.1 At the heart of the National Planning Policy Framework (NPPF) is a presumption in favour of sustainable development which should be seen as a golden thread running through both Plan-making and decision-taking. The policies and allocations contained in the Plan follow the approach of the presumption in favour of sustainable development and provide guidance to apply the presumption locally, in line with the Plan's vision.

7.2 The NPPF states that there are three dimensions of sustainable development: economic, social and environmental[17]. The working of minerals has the ability to affect all three dimensions and the county council will seek opportunities to achieve net gains across each dimension through the implementation of the Plan.

7.3 The county council seeks to contribute to a strong, responsive and competitive economy, supporting vibrant and healthy communities, whilst protecting and enhancing the natural, built and historic environment. The provision of a steady and adequate supply of minerals to meet national, sub-national and local needs in accordance with the policies in the Plan will help achieve this.

7.4 The county council will always work proactively with applicants to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.

7.5 Policy 1: Sustainable Development reflects the national policy presumption.

Policy 1: Sustainable Development

The county council will take a positive approach that reflects the presumption in favour of sustainable development as contained in the NPPF when considering development proposals.

The county council will grant planning permission for mineral extraction, associated development and reclamation where proposals accord with the policies in the Development Plan and will refuse proposals that conflict with the Development Plan unless material considerations indicate otherwise.

Where there are no policies relevant to the proposal or the relevant policies are out of date at the time of making the decision, the county council will grant planning permission unless material considerations indicate otherwise, taking into account:

Cont.

[17] NPPF, 2018 – paragraph 8

- **any adverse impacts of granting planning permission that would significantly and demonstrably outweigh the benefits when assessed against the policies in the NPPF; and**
- **specific policies in the NPPF that indicate development should be restricted.**

Monitoring

Related Plan Objectives	Obj1, 2, 3, 4, 5, 6, 7 & 8
Plan Targets	T2, 3, 4, 5 & 6
Plan Indicators	IN2, 3, 4, 5 & 6

Climate Change

Hertfordshire Context

7.6 Climate change continues to be a topic of interest across the county. Variations of temperature and rainfall indicate changes to the climate in Hertfordshire and across the UK. Hertfordshire experiences a lower than average rainfall and it is likely that climate change will alter this. Annual mean temperatures from Hertfordshire and Central England Temperature (CET) records show that there is a long term warming trend.

7.7 Hertfordshire emitted a total of 6,887,990 tonnes of CO_2 in 2011; this is a decrease of 7.3% since 2010 and 14.9% reduction since 2005. Of this, 37.6% was emitted by road transport and 32.7% by domestic emissions[18]. Between 2010 and 2011 all the districts in Hertfordshire showed a decrease in emissions for the domestic, industrial and commercial sectors.

Policy Background

7.8 Measures to tackle climate change nationally have been introduced through the Climate Change Act (2008) which sets a legally binding target to cut UK emissions by 34% by 2020 and by at least 80% by 2050.

7.9 Meeting the challenges of climate change is central to the principle of sustainable development and as such, climate change should be taken into account at all stages of planning to secure radical reductions in greenhouse gas emissions, minimise vulnerability and provide resilience to the impacts of climate change.

7.10 Two key aspects of climate change are most relevant to minerals planning:

- Reducing carbon emissions to minimise future climate change;
- Preparing for the effects of climate change by increasing the resilience of a location to any climatic changes.

[18] Hertfordshire Local Information System, Hertfordshire Quality of Life Report 2014. Climate Change

7.11 Measures to minimise or prepare for climate change will vary depending on the circumstances of each proposal but there are a number of key ways that minerals development can incorporate mitigation for climate change issues.

Location, Setting and Orientation:

7.12 Energy consumption can be minimised by taking account of the volume, shape and orientation of buildings as well as the landform and landscaping associated with a proposal. This might include positioning machinery where it would ease transport around the site to reduce the movement of energy-consuming vehicles, or orientating infrastructure to maximise the efficient integration of processing equipment or aspects of a micro-climate.

Renewable Energy:

7.13 Minerals development can help to reduce the reliance on centralised energy supplies and subsequent emission of key greenhouse gases. This can be achieved by the installation of renewable and low-carbon energy generation on-site, where feasible and viable.

Minimising Greenhouse Gas Emissions:

7.14 The county council would expect minerals development to be located and designed to promote energy efficiency wherever possible. Lorry movements to and from site are a major contributor to the greenhouse gas emissions of minerals extraction sites so sustainable transportation should be major considerations for applicants in accordance with Policy 20: Strategic Transport and Policy 21: Operational Transport.

7.15 Proposals can also manage emissions through building design, site layout, extraction techniques and the use of fuel-efficient and well-maintained processing plants and equipment.

7.16 As a means of demonstrating sufficient energy efficiency measures, applicants are encouraged to implement sustainability standards, such as the BREEAM published by the Building Research Establishment, into the design of operations and built development on site and greenhouse gas emissions should be addressed for the lifetime of the development.

On-Site Water Efficiency:

7.17 Mineral developments can be designed in a number of ways to reduce the threat of water-scarcity and maximise the efficient use of water on-site. Measures include site design to allow the repeated re-use of water in mineral screening or the installation of grey-water recycling systems and on-site water storage.

Reducing Flood Risk:

7.18 Minerals development should be designed to reduce vulnerability to the potential impacts of climate change and care should be taken to ensure that risks can be managed through suitable adaption measures. This could include the development of green infrastructure and the appropriate incorporation of

Sustainable Drainage Systems (SuDS) to reduce water demand, aid flood alleviation and minimise flood impacts.

7.19 Proposals should include an assessment of flood risk and include mitigation measures sufficient to satisfy the requirements of Policy 14: Water Management, incorporating up to date climate change allowances for which guidance is published by the Environment Agency. Resilience measures could involve directing operations away from areas of the site with highest risk of flooding or designing the extraction and restoration of land to increase the capacity of the floodplain.

Restoration and After-Use:

7.20 Proposals for minerals extraction should promote the benefits from restoration and after-use with particular emphasis encouraged for landscape improvements, creation of habitats for biodiversity, flood alleviation and water resource enhancement.

7.21 A Restoration Strategy for the site should be submitted as part of an application in accordance with Policy 24: Restoration.

Secondary and Recycled Aggregates:

7.22 Applicants should consider the use and provision of secondary and recycled aggregates to reduce reliance on the extraction of primary resources and to increase the availability of alternative mineral products. Minimising the requirement for mineral extraction can reduce the greenhouse emissions associated with extraction operations as well as reducing the demand on other important resources such as water during operations. Proposals should refer to Policy 5: Substitute or Secondary and Recycled Materials when proposing the use or processing of secondary and recycled aggregates.

7.23 The measures presented above are not exclusionary and the county council will expect applicants to submit innovative proposals that combine different measures where appropriate. Applicants should submit a Climate Change Statement which explains how measures to minimise and mitigate against climate change have been considered and the reasoning for either including or omitting measures in the proposed development. The applicant should also detail how they intend to continue to review their performance with regards to climate change impacts throughout the duration of the development.

7.24 The extent to which it may reasonably be expected that such measures will be incorporated to reduce the effects of climate change will be considered by the county council and proposals will be assessed taking account of the ever-changing range of mitigation measures as they evolve throughout the duration of the Plan.

Policy 2: Climate Change

Proposals for mineral extraction, associated development and reclamation must demonstrate how they have incorporated multifunctional mitigation measures to minimise future impacts of climate change and how adaption and resilience measures to potential climate changes have been incorporated into the design.

Applicants should submit details and reasoning of any measures that have been considered and included within a Climate Change Statement, having regard to relevant legislation and guidance.

Measures will vary depending on the particular circumstances of each proposal but should have regard, although not be limited, to:

- **location, setting and orientation;**
- **renewable energy;**
- **minimising greenhouse gas emissions;**
- **efficiency of processing plant and equipment;**
- **on-site water efficiency;**
- **reducing flood risk;**
- **restoration and after-use; and**
- **the use and production of secondary and recycled aggregates.**

Monitoring

Related Plan Objectives	Obj1, 2, 3, 4, 6, 7 & 8
Plan Targets	T4, 5 & 6
Plan Indicators	IN4, 5 & 6

8 Strategic Aggregate Policies

Aggregate Supply

Hertfordshire Context

8.1 The average sales figure of sand and gravel in Hertfordshire over the ten year period 2007-2016, is 1.15 million tonnes per annum[19]. Based on the 2016 levels, Hertfordshire contributed 10% of the sand and gravel sales in the East of England region[20].

Policy Background

8.2 Minerals are a finite resource and ensuring the best use of these minerals secures their long-term conservation. Primary land-won aggregate, which is mineral dug from the land, is used widely within the construction industry. This is being supplemented by secondary and recycled aggregate in construction projects, which is becoming increasingly important as the supplies of land-won aggregate decline and in promoting the sustainable use of minerals. Policy 5: Substitute or Secondary and Recycled Materials relates to the use of secondary and recycled aggregates.

8.3 The county council as Minerals Planning Authority (MPA) is required within the NPPF[21] to plan for a steady and adequate supply of aggregates to support sustainable economic growth. This can be achieved through the allocation of Specific Sites, Preferred Areas, and/or Areas of Search. The sites selected to help achieve a steady and adequate supply of minerals feature in Policy 4: Working of Specific Sites or Preferred Areas. To ensure that there are minerals available in the future Policy 8: Mineral Safeguarding is also critical for a steady and adequate supply.

8.4 To provide for future sand and gravel requirements, Hertfordshire is planning to meet the sub-national apportionment figure which has been allocated to the county covering the period of 2005-2020[22]. This figure is currently 1.39 million tonnes per annum for Hertfordshire to plan for. This figure has had much work undertaken to justify it and factors a proportion of secondary and recycled aggregate into its model. The council's continued use of the apportionment is accepted by the East of England Aggregates Working Party and is based on the Managed Aggregate Supply System (MASS) which now forms part of the NPPG.

8.5 National policy instructs MPAs to participate in their area's Aggregate Working Party and take account of its advice. MASS exists to ensure that MPAs make appropriate contribution to national as well as local aggregate supply. Whilst minerals that are not found in an authority area may travel significant distances, of the more abundant minerals, the distance they travel will be

[19] Local Aggregate Assessment 2017. This 10 year cycle coincided with a recessionary period
[20] East of England Aggregates Working Party Annual Monitoring Report 2016
[21] NPPF, 2018 – paragraph 207
[22] National and Regional Guidelines for Aggregates Provision in England 2005-2020 (June 2009)

dictated by the cost of transporting them and therefore is more likely to serve the local market. Changes to national policy and guidance will be monitored in the annual Local Aggregate Assessment.

8.6 The NPPF[23] requires MPAs to make provision for the maintenance of a landbank of at least seven years for land-won sand and gravel. This is a monitoring tool which underpins the working of the MASS. Landbanks of aggregate minerals reserves are used principally as an indicator of the security of aggregate minerals supply, and to indicate the additional provision that needs to be made for new aggregate extraction and alternative supplies in Minerals Local Plans.

8.7 Maintaining such a landbank means that the county must maintain at least seven years' worth of permitted mineral reserves at any time during the Plan period. At any one time there should be planning permission for a total of 9.73 million tonnes of sand and gravel (7 years x 1.39 mt). The landbank is calculated using the permitted reserves within the county and the sub-national apportionment figure. In order to ensure a continued supply beyond the 15 year Plan period, an additional seven years' supply of sand and gravel has been identified within this Plan, which requires the need to plan for 22 years of supply. The Plan should therefore plan for at least 30.58 million tonnes of land-won aggregates based upon the annual 1.39 million tonnes.

8.8 The county council uses the preparation of its annual Local Aggregate Assessment (LAA) to forecast future demand for mineral extraction and monitor the landbank, providing up-to-date information for Plan-making and for the determination of mineral planning applications. National policy requires the preparation of an annual LAA to capture the rolling average of 10 years sales data and other relevant information and an assessment of all supply options (including marine dredged, secondary and recycled sources).

8.9 The Hertfordshire LAA sets out the recent sales figures for sand and gravel, the current status of permitted reserves and the council's intention to continue to use the sub-regional apportionment figure to forecast future demand. It also captures potential demand in the form of proposed development schemes and housing projections at district level which can help to ascertain whether growth projections could influence a change in need for sand and gravel.

8.10 To ensure the requirement for a steady and adequate supply of minerals for the county is met, the information about the need for sand and gravel from the LAA is a key consideration when determining planning applications for extraction. This is particularly important when determining applications for extraction on unallocated sites.

[23] NPPF, 2018 – paragraph 207

Policy 3: Aggregate supply

The county council will seek to maintain a steady and adequate supply with at least a seven year landbank of sand and gravel reserves to support sustainable economic growth in accordance with the Hertfordshire Local Aggregate Assessment throughout the Plan period to enable appropriate contribution to the national, sub-national and local needs.

Monitoring

Related Plan Objectives	Obj1 & 3
Plan Targets	T2 & 5
Plan Indicators	IN2 & 5

Working of Specific Sites or Preferred Areas

8.11 The purpose of identifying sites and/or areas within the Plan is to give clear guidance and some certainty on when and where mineral extraction development may take place in the future to maintain an adequate and steady supply of minerals.

8.12 National policy states that MPAs should plan for this steady and adequate supply of minerals in one or more of the following ways (in order of priority) designating Specific Sites, Preferred Areas, and/or Areas of Search.

8.13 In line with national policy a landbank of at least seven years should be maintained for sand and gravel throughout the Plan period.

8.14 The MPA has undertaken an extensive site selection study in order to identify the most sustainable locations for future aggregate extraction. This involved:

- Preparing a methodology for site selection;
- A desk-based evaluation of mineral resources in the county to identify economically viable resources;
- Assessing potential sites and areas against the sieving criteria including a series of environmental and other constraints to identify areas suitable for further investigation as potential sites for mineral extraction;
- Comparative evaluation of sites, incorporating feedback from the consultation exercise; and
- An independent Sustainability Appraisal.

8.15 Existing sites with permitted reserves which contribute to the landbank are listed within the Local Aggregates Assessment (LAA). The LAA is reviewed on an annual basis and reports on the status of the landbank. Sites identified in the Plan will also be monitored in the LAA.

8.16 National policy and guidance defines Specific Sites, Preferred Areas and Areas of Search as:

- **Specific Sites** – where viable resources are known to exist, landowners are supportive of minerals development and the proposal is likely to be acceptable in planning terms. Such sites may also include essential operations associated with mineral extraction;

- **Preferred Areas** – areas of known resources where planning permission might reasonably be anticipated. Such areas may also include essential operations associated with mineral extraction;

- **Areas of Search** – areas where knowledge of mineral resources may be less certain but within which planning permission may be granted, particularly if there is a potential shortfall in supply.

8.17 The Plan identifies three Specific Sites and one Preferred Area which are listed in Table 3 and Policy 4: Working of Specific Sites or Preferred Areas. Inset Maps and Site Briefs are included for all three Specific Sites and the Preferred Area in Appendix 3 of the Plan. It is anticipated that these sites/areas will contribute to the Hertfordshire landbank in future. These areas of land are likely to be required to make up the balance of the contribution to the apportionment for the Plan period and the landbank period beyond.

8.18 It is therefore intended that, unless exceptional circumstances indicate otherwise, the county's needs for land-won aggregate will be met from the sites and area identified in Policy 4: Working of Specific Sites or Preferred Areas of this Plan. Planning applications for mineral extraction at unallocated sites would not be supported unless a significant case for mineral demand could be demonstrated with particular reference to Policy 3: Aggregate Supply.

8.19 It is estimated that the three identified Specific Sites and one Preferred Area could contribute 25.25 million tonnes of sand and gravel over the Plan period.

8.20 National policy is clear that large landbanks bound up in a small number of sites should not stifle competition[24]; the MPA has not placed reliance on a single site for meeting the future aggregate need.

[24] NPPF, 2018 – paragraph 207

Table 3 - List of Allocated Specific Sites and Preferred Area

Specific Sites	**Tonnage**
Specific Site 1 – Hatfield Aerodrome	Estimated 8 million tonnes
Specific Site 2 – Hatfield Quarry – Furze Field	Estimated 0.45 million tonnes
Specific Site 3 – Hatfield Quarry – Land adjoining Coopers Green Lane	Estimated 6.6 million tonnes[25]
Preferred Areas	**Tonnage**
Preferred Area – The Briggens Estate (Olives Farm)	Estimated 10.2 million tonnes
Total Provision	**25.25 million tonnes**
Permitted Reserves as of 31/12/2017	**10.46 million tonnes[26]**

Policy 4: Working of Specific Sites or Preferred Areas

Provision for Hertfordshire's apportionment contribution will be met by the identification of Specific Sites and Preferred Areas.

Specific Sites for sand and gravel extraction are identified on Inset Maps 1-3 and the Policies Map. These sites are:

- **Specific Site 1 - Hatfield Aerodrome**
- **Specific Site 2 - Hatfield Quarry – Furze Field**
- **Specific Site 3 - Hatfield Quarry – Land adjoining Coopers Green Lane**

A Preferred Area is identified on Inset Map 4 and the Policies Map. This area is:

- **Preferred Area 1 – The Briggens Estate (Olives Farm)**

Proposals for mineral extraction within the Specific Sites or Preferred Area must fulfil the requirements as set out within the planning briefs.

Proposals for mineral extraction outside of the Specific Sites or Preferred Area will be considered against the policies within the Plan, with specific reference given to Policy 3: Aggregate Supply.

[25] This is a high estimate. Further information provided in the planning brief for Specific Site 3 in Appendix 3

[26] Up to date permitted reserve figures are published annually in the Hertfordshire Local Aggregate Assessment

Monitoring

Related Plan Objectives	Obj1
Plan Targets	T1 & 2
Plan Indicators	IN1 & 2

Substitute or Secondary and Recycled Materials

Hertfordshire Context

8.21 The growth promoted by Hertfordshire's borough and district Local Plans means that there are significant arisings of Construction, Demolition and Excavation (CD&E) waste in the county totalling roughly 2 million tonnes per annum[27]. Due to Hertfordshire's location directly to the north of London, approximately 1 million tonnes of CD&E waste are also imported into Hertfordshire from out of the county[28]. Much of this material is sent to landfill (either in or outside of Hertfordshire) but could be recycled and re-used, reducing the need to extract primary, land-won minerals.

8.22 The county council promotes the efficient use of resources, including the re-use of inert waste as an alternative to primary materials in large construction projects via the implementation of Site Waste Management Plans. In addition, Hertfordshire has a handful of facilities that can recycle inert waste to produce construction products. Capacity currently exists in the county for approximately 0.35 million tonnes per annum.

Policy Background

8.23 The NPPF is clear that Local Plans should take account of substitute materials before considering extraction of primary minerals. The county council is committed to promoting the use of alternative materials to reduce the reliance on land-won material and make the most sustainable use of finite resources.

8.24 **Secondary Aggregates** are aggregates produced as by-products of other processes, including boiler ashes, burned shale, burned clay, pulverised fuel ash, chalk and shale. They can also be created as a by-product from mineral extraction processes, which can include china clay, coal and slate extraction.

8.25 **Recycled Aggregates** are aggregates obtained from the treatment of materials formerly used for another purpose and can comprise reprocessed Construction, Demolition and Excavation (CD&E) waste, asphalt road planings and railway basalt.

8.26 Recycled aggregates currently offer the greatest potential as an alternative to primary aggregates in Hertfordshire. The principal reasons for this are that:

[27] Waste Data Interrogator 2017
[28] Waste Data Interrogator 2017

- The volumes of waste arisings are considerable;
- The waste is generated and recycling takes place at many locations across the county, often close to potential markets;
- The material can provide an end product with a variety of different construction uses;
- Where adequate sorting facilities are available, recycled aggregates can compete with a wide range of primary materials.

8.27 Support for recycling aggregates is also contained in the Hertfordshire Waste Local Plan (WLP), which forms part of the Development Plan and comprises the Waste Core Strategy & Development Management Policies document (adopted 2012) and the Waste Site Allocations document (adopted 2014).

8.28 The WLP aims to reduce the proportion of CD&E waste produced in the county that is sent to landfill. As such, existing sites with planning permission and sites on which planning permission is subsequently granted for waste management are safeguarded in the WLP.

8.29 New facilities for the production of secondary and recycled aggregates will be supported by the county council where it can be demonstrated that the proposal would reduce the need for the extraction of primary, land-won aggregates, particularly within Hertfordshire.

8.30 The location of proposals for new secondary and recycled aggregate facilities will be assessed against policies within the Waste Local Plan and other aspects of a proposal against policies contained in the Development Plan and on the merits of the application. Proposals for permanent facilities should be located where they will not have an unacceptable adverse impact on the environment or on quality of life and will be assessed taking account of the balance between the need for additional waste facilities and the need to protect the environment.

8.31 The processing of secondary and recycled aggregate is a compatible operation on an existing mineral site, including where restoration is by infilling and appropriate waste materials are already being brought to the site. Existing screening and mitigation against other environmental impacts makes this a potentially positive option, however, the secondary operation would only be permitted for the duration of the minerals operation and at a scale appropriate to the original use of the site.

Policy 5: Substitute or Secondary and Recycled Materials

The county council will support the increased use of substitute or secondary and recycled materials in place of primary land-won aggregates in development proposals to reduce reliance on land-won minerals and to maximise the quantity of Construction, Demolition and Excavation waste diverted from disposal.

The county council will support the expansion of existing and provision of new facilities to increase the current capacity for processing, distribution and where necessary the re-processing of aggregates subject to proposals being consistent with the Development Plan and subject to the criteria below unless material considerations indicate otherwise.

Proposals for recycling facilities must demonstrate that:

- **the siting, scale and design of the development is appropriate to the location and the character of the surrounding natural and built environment;**
- **the landscaping and screening of the site is designed to effectively mitigate the impact of the proposal;**
- **the proposed development would not adversely impact upon the natural, built or historic environments, amenity or human health;**
- **the transportation of aggregates will not have a significant adverse impact on highways safety and the effective operation of the highway network; and**
- **there would not be an unacceptable adverse cumulative impact on the local area.**

In addition, proposals for temporary recycling facilities must demonstrate that where facilities are proposed within an existing quarry:

- **the size and throughput of the recycled and secondary aggregate operation is of an appropriate scale to existing operations; and**
- **the duration of the development does not prejudice or unduly delay the restoration of the site.**

Monitoring

Related Plan Objectives	Obj3
Plan Targets	T3
Plan Indicators	IN3

9 Industrial Minerals Policies

Brick Clay

Hertfordshire Context

9.1 Brick clay production is very specialist in its nature and the bricks are heavily dependent on the blend of material used in the production process. Clay working and brick production has previously occurred in Hertfordshire due to the existence of isolated and localised pockets of brick clay in the north west of the county.

9.2 Due to the highly variable geology of clay resources, bricks produced in Hertfordshire were locally distinctive[29] and served sub-national and local markets as a material in the construction and restoration of traditional brick and flint building styles, complementing the local heritage. As of 2018, there is no remaining infrastructure for the production of bricks within the county.

Policy Background

9.3 The NPPF requires MPAs to plan for a steady and adequate supply of industrial minerals by providing a stock of at least 25 years permitted reserves for brick clay to support existing kilns. Permitted reserves are monitored annually in the Hertfordshire Local Aggregate Assessment. There are no national policy requirements to maintain a supply of permitted reserves because there are no existing brickworks in Hertfordshire. It is not considered necessary to identify Preferred Areas for clay production in the Plan.

9.4 As a means of protecting clay reserves for future use, a Minerals Safeguarding Area (MSA) has been identified around a wider area of known clay reserves. The MSA will ensure that any proposal submitted for non-minerals development that might sterilise the mineral reserves should follow the consultation procedure specified in Policy 8: Mineral Safeguarding in order to be granted approval.

9.5 This will promote collaborative work between the county council and district/borough councils of Hertfordshire to protect the mineral resources for future use.

9.6 Due to the nature of local clay reserves, it is possible that brickworks operating in adjoining authorities may need to be supplied by extraction sites in Hertfordshire. In instances where the county council receives an application for clay extraction to supply any out-of-county brickworks, the county council will liaise with the neighbouring Minerals Planning Authority to determine the specified brickworks' existing stock of permitted reserves as well as determining whether the proposed extraction operations are in accordance with the policies in the Development Plan for Hertfordshire.

[29] British Geological Survey: Hertfordshire and NW London Boroughs – Mineral resource Information in Support of National, Regional and local Planning 2013

Policy 6: Brick Clay

Proposals for brick clay workings will be permitted where it can be demonstrated that:

- **the level of permitted reserves for a specified brickworks is insufficient to maintain brick clay production for at least 25 years;**
- **the proposal directly contributes towards the required supply for brick clay at the specified brickworks; and**
- **the proposals are consistent with other policies within this Plan.**

Monitoring

Related Plan Objectives	Obj1 & 2
Plan Targets	T5 & 7
Plan Indicators	IN5 & 7

Chalk

Hertfordshire Context

9.7 Chalk extraction in Hertfordshire has historically been undertaken on a small scale and is not currently worked in the county. Chalk can be used as an industrial mineral in the production of cement, however in Hertfordshire it has predominantly been used as an agricultural lime on farmland.

9.8 Many of the chalk deposits in the county contain flints that can be extracted as a by-product of the chalk extraction process. Flints are common within chalk reserves throughout the wider Chiltern Hills area. Once separated from the chalk, the flints are processed and sold for use in the construction and maintenance of roads or buildings, often as part of heritage restoration of older buildings.

Policy Background

9.9 There are no national policy requirements to maintain a supply of permitted reserves because chalk previously extracted in Hertfordshire was not used as an industrial mineral. Due to the low use and unlikely requirement for further chalk supply in the county, no additional Specific Sites or Preferred Areas are identified in this Plan for the extraction of chalk.

9.10 Support will be given to proposals for small-scale chalk extraction only where it can be demonstrated that there is additional need for the agricultural use of chalk and if a proposal complies with the other policies within the Development Plan. The need should be linked to the seasonal agricultural

application of chalk to land and applicants should use trends in historical sales figures over a period of at least ten years to demonstrate the increased need for extraction.

Policy 7: Chalk

Proposals for chalk extraction will be permitted where it can be demonstrated that:

- **there is a need for additional chalk supply for agricultural use; and**
- **the proposals are consistent with other policies within this Plan.**

Monitoring

Related Plan Objectives	Obj1 & 2
Plan Targets	T7
Plan Indicators	IN7

10 Safeguarding

Mineral Safeguarding Areas

10.1 Much of Hertfordshire is underlain by sand and gravel deposits which provide valuable resources for construction materials and the future needs of Hertfordshire. Minerals are finite resources and can only be worked where they are found. Allowing new built development to take place on top of these deposits could make these valuable mineral resources inaccessible for future extraction, by 'sterilising' them from potential future use. This sterilisation can occur either directly by building on top of the deposits, or indirectly, for example, by building new houses close to a mineral deposit, and thus preventing extraction due to the proximity to the new development.

10.2 It is recognised in national policy that known locations of specific mineral resources of local and national importance should not be sterilised by non-mineral development where this can be avoided[30]. It is therefore important that the county council conserves (safeguards) areas of known mineral resources appropriately so that unnecessary mineral sterilisation does not occur, to ensure that resources are protected for future generations.

10.3 National policy is also clear on adopting a systematic approach for the safeguarding of mineral resources which should be evident within development management policies. The policy should contain action for applicants to address the risk of losing the ability to extract the resource and policies should encourage the prior extraction of minerals where practicable and environmentally feasible.

10.4 In order to prevent sterilisation, the Minerals Local Plan (MLP) has identified Mineral Safeguarding Areas (MSAs) for sand and gravel and brick clay resources. These are shown in Appendix 2 on the Policies Map.

10.5 National policy defines a MSA as an area designated by a Minerals Planning Authority (MPA) which covers known deposits of minerals which are desired to be kept safeguarded from unnecessary sterilisation by non-mineral development[31].

10.6 For Hertfordshire, MSAs have been identified for sand and gravel and for brick clay. The MSAs are based on British Geological Survey (BGS) data at 1:50,000 scale with previously worked areas removed and the addition of 100 m buffer area to the remaining resource areas.

10.7 In accordance with paragraphs 4.2.9 to 4.2.11 of the British Geological Survey: Mineral Safeguarding in England: Good Practice Advice (2011) the MSAs cover the whole of the mapped resource areas and do not exclude areas which are already subject to other designations or those which are already sterilised by existing urban development. Mineral safeguarding is not

[30] NPPF, 2018 – paragraph 204
[31] NPPF, 2018 – Annex 2: Glossary

precluded by the presence of national and international environmental designation.

10.8 If planning applications for non-minerals development submitted to the district/borough councils (unless it falls within the stated thresholds for excluded development) fall within an MSA, the MPA must be consulted to have the opportunity to consider whether the development proposed would lead to unacceptable sterilisation of potentially extractable mineral resources. This process allows for the county council and district/borough councils to work together to protect the resources within the identified MSAs.

10.9 There are some types of development that would not normally bring about the sterilisation of an underlying mineral deposit, for example development within urban areas (where the mineral deposits are already sterilised by the built-up nature of the area), or developments involving only temporary uses (which by definition will not lead to the permanent or long-term sterilisation of mineral deposits).

10.10 In order to avoid an unnecessary number of consultations on applications that are unlikely to be objected to on minerals grounds, some types of planning application will be exempt from the consultation procedures. The exempt categories, on which consultation will not be required, are as follows:

Excluded Development List	
Mineral Type	Excluded Development
Sand and Gravel and Brick Clay	• Householder planning consent: Applications for alterations to existing single buildings including works within the boundary/garden of a house i.e. domestic extensions, conservatories, loft conversions, dormer windows, garages and similar structures (car ports, outbuildings) within the curtilage of an existing dwellinghouse; • Applications for Advertisement Consent; • Applications for Listed Building Consent; • Lawful Development Certificate (LDC) for existing use, proposed use, or operation or activity in breach of a planning condition; • Prior Notifications (telecommunications; forestry; agriculture; demolition); • Applications for removal, variation and approval of conditions; • Applications for Tree Works (including consent under Tree Preservation Orders and notification of proposed works to trees in conservation areas); • Applications for change of use of existing development, unless intensifying activity on site; • Applications for reserved matters including subsequent applications after outline consent has been granted; • Application for non-material amendments; • Applications that are in accordance with the Development Plan where the district/borough Local Plan took account of the prevention of unnecessary mineral sterilisation and determined that prior extraction should not be considered

	when an application for development in a MSA come forward (Sand and Gravel, and Brick Clay only); • Applications for small-scale urban infill development within existing built-up areas i.e. the development of a small gap between existing buildings/enclosed by other types of development; • Developments within a conservation area within existing urban areas; and • Applications for prior approval.

10.11 The county council should be consulted on all proposals for non-mineral development which fall within MSAs and do not meet these stated criteria. After consultation, the county council will determine whether applications should be supported by a Mineral Resource Assessment, carried out by a suitably qualified and competent professional. As a minimum, this assessment should establish the extent and quality of the resource, the likelihood of being able to work it in an environmentally acceptable way, and its economic viability in association with the proposed scheme. From this information the MPA can consider whether it is necessary for the mineral to be extracted or allowed to be sterilised. Further information can be found in the county council's Mineral Resource Assessment Technical Note.

10.12 The MPA encourage early engagement and involvement in the preparation of district/borough Local Plans in addition to engagement at the pre-application stage to ensure that potential issues of sterilisation can be addressed.

Prior Extraction:

10.13 To prevent the sterilisation of known mineral resources, there may be an opportunity to extract a significant proportion of the mineral resource prior to built development taking place in. This is known as prior extraction and can be considered as sustainable development. If identified as viable within a Mineral Resource Assessment, to prevent the permanent loss of minerals, and in accordance with national policy, the MLP encourages prior extraction.

10.14 Strategic allocations within district Local Plans offer the greatest opportunity to promote prior extraction of minerals on site. This is due to the large scale of allocations, which make it more likely that workable mineral resources will be present, and their early identification, which allows more time and flexibility for extraction to be incorporated into the masterplanning of the development. Prior extraction is dependent on site-specific issues relating to the resource and phasing of potential non-mineral development. The scale and phasing of the mineral operations will be dependent on the size of the site, the depth of mineral, the type and quality of the mineral, and the nature of the proposed development.

10.15 Notwithstanding the potential built development, in most circumstances, the deposit would usually be commercially viable as a minerals site. Extraction would likely be a separate activity to the non-minerals development and may include restoration of the land to make it suitable for the specified future non-

mineral development. Mineral extraction proposals at these prior extraction sites would still have to accord with all other relevant policies of this Plan. However it is also recognised that proposals would also need to ensure timely working of the mineral in co-ordination with other development.

10.16 The county council and district/borough councils will work collaboratively through early engagement during Local Plan preparations and pre-applications to promote mineral safeguarding in line with the Mineral Safeguarding Areas procedure.

10.17 Where prior extraction is necessary, a separate mineral planning application is required to be submitted to the MPA for determination. Reference should be made to the criteria set out in Policy 8: Mineral Safeguarding. The policy seeks to ensure that appropriate weight is given to the prior extraction of minerals which would otherwise be sterilised or would enhance the land use proposals by improving despoiled land.

10.18 It should be noted that there is no presumption that land included within a MSA for the safeguarding of mineral resources will ever be worked for minerals. It is a method to protect the resources for the future and mineral extraction will be subject to assessment at the planning application stage and against other policies within this Plan.

Opportunistic Use:

10.19 In cases where full prior extraction is not considered feasible, based on the findings of the Mineral Resource Assessment, there may still be the opportunity to use sand and gravel found on site during construction projects to reduce the need to import material, this is known as opportunistic use.

10.20 The term opportunistic extraction refers to cases where preparation of the site for built development may result in the extraction of suitable mineral that could be processed and used on site as part of the development. This may include excavating the foundations and footings or landscaping works associated with the development resulting in minimal quantities that would not be commercially viable to extract the full resource. In these cases, a separate minerals applications is not usually required.

10.21 Some large-scale regeneration projects may also provide an opportunity for extraction of previously sterilised mineral. For example, this may occur in cases where the surface area is sufficient to extract the mineral or where the proposed depth of excavation of basements or underground car parking exposes mineral which can be extracted as part of the proposed development.

10.22 The policy below will supersede the adopted Mineral Consultation Area Supplementary Planning Document (adopted November 2007).

Policy 8: Mineral Safeguarding

The county council will safeguard known mineral resources of sand and gravel and brick clay from unnecessary sterilisation by non-mineral development by implementing Mineral Safeguarding Areas as indicated on the Policies Map.

Any proposals for non-mineral development which fall within the Mineral Safeguarding Areas, other than applications considered as 'excluded development', will be subject to consultation with the Minerals Planning Authority.

After consultation with the Minerals Planning Authority, the submission of a Mineral Resource Assessment may be required to establish the existence or otherwise of a viable mineral resource. Assessments shall be site specific and include geological survey data undertaken by a suitably qualified professional.

The Minerals Planning Authority will object to proposals for non-mineral development within the Mineral Safeguarding Areas, as shown on the Policies Map, based on the findings of the Mineral Resource Assessment, unless it is clearly demonstrated to the Minerals Planning Authority that:

- **mineral extraction is not environmentally acceptable; or**
- **the need for the non-mineral development clearly outweighs the need for the mineral resource and therefore sterilisation of the mineral resources; or**
- **the proposed development does not constrain potential future extraction i.e. playing fields or open land; or**
- **the development would not constrain effective present and future mineral development.**

Prior extraction will be sought where practicable unless it is demonstrated that the mineral cannot practically be extracted in advance of the proposed development. In these circumstances, full consideration should be given to the use of raised sand and gravel material on site in construction projects to reduce the need to import material as opportunistic use.

Monitoring

Related Plan Objectives	Obj2 & 3
Plan Targets	T5
Plan Indicators	IN5

Bulk Mineral Transport, Handling and Processing Sites

10.23 Mineral development is not restricted to the extraction, processing or manufacture of minerals. It also includes the transportation of minerals and associated development such as rail heads/rail aggregate depots, aggregate recycling, and secondary processing facilities such as asphalt and concrete batching plants, all of which are safeguarded by national policy.

Bulk Transport

10.24 As detailed in the transport section of this document, the sustainable movement of minerals includes by rail and water. When moving minerals over long distances, rail heads and wharves can serve as important strategic mineral infrastructure for the supply of minerals in Hertfordshire. The county does not have any coastline and as a result does not have the potential for marine wharves, however there is the potential for wharves on the rivers within the county such as the River Lea, where boats can dock and unload minerals[32]. At the time of writing this Plan, the county does not have any operating or disused wharves.

10.25 There are five rail aggregate depots (rail heads) in the county at the following locations which are safeguarded for their important contribution to the long distance movement of aggregate:

- Harper Lane, St Albans;
- Langley Sidings, Stevenage;
- Orphanage Road, Watford;
- Rye House, Hoddesdon; and
- Walsworth Road, Hitchin.

10.26 Rail heads are used for the import and export of sand and gravel and they are essential infrastructure within Hertfordshire for importing hard rock as the county does not contain deposits of hard rock. They form part of a strategic network of transportation of sub-national and national importance for the movement of minerals as well as construction, demolition and excavation wastes. This transportation is particularly important when insufficient land exists close to the waste's origin for suitable waste management facilities as is frequently the case in London. Facilities for bulk transport are hard to re-locate due to the increasing demands for land and the associated impacts with their operation, adding to the importance of their safeguarding.

Bulk Handling and Processing

10.27 Facilities for the bulk handling and processing of minerals and mineral products also play an important role in the operation of the UK minerals

[32] Town and Country Planning Association Policy Advice note: Inland Waterways (2009)

industry. Concrete and asphalt are often produced at these facilities and are vital materials for most construction projects.

10.28 Concrete is produced at batching plants, some of which are static structures with the benefit of planning permission located at existing mineral sites or rail aggregate depots or standalone, and others are mobile plants for on-site concrete production which can be dismantled and moved from one site to another. Asphalt or coated stone plants can also either be standalone facilities or co-located with other facilities, and produce materials for the construction and maintenance of roads, car parks, pavements, other footways and cycleways as well as playgrounds, runways and roofing of buildings.

10.29 Where facilities have permanent planning permission from the Minerals Planning Authority (the county council), they will be safeguarded from development which would compromise their continued operation.

10.30 The following sites are currently safeguarded within the county:

- Birchall Lane/Cole Green, Welwyn Garden City;
- Burnside, Hatfield;
- Eleanor Cross Road, Waltham Cross;
- Harper Lane, St Albans;
- Orphanage Road, Watford;
- Skinner's Yard, Hertford; and
- Tyttenhanger, Colney Heath.

10.31 These sites are safeguarded under Policy 9: Safeguarding Bulk Transport and Bulk Handling and Processing Sites to ensure their continued operation is not compromised by other incompatible development proposed in its vicinity. These sites are not easy to replace due to environmental considerations and their need to be located in close proximity to the primary route network.

Mineral Infrastructure Consultation Areas

10.32 In line with national policy, existing, planned and potential sites for the bulk transport, handling and processing of minerals (including storage) should be safeguarded for their continued use, to prevent their redevelopment for other uses, and to prevent encroachment of incompatible land uses and any loss of mineral infrastructure which is not easy to replace. Safeguarding of these sites includes existing operational and non-operational sites which have the potential to be re-opened and serve as important facilities in the future.

10.33 The Minerals Local Plan has identified Mineral Infrastructure Consultation Areas (MICAs) to safeguard existing, planned and potential sites for the bulk transport, handling and processing of minerals. These MICAs are defined as the site and a 250m area surrounding the site boundary.

10.34 Local Planning Authorities are expected to consult with the MPA where there are proposals within a MICA, other than those which fall within the stated

thresholds for excluded development and take account of its views before making planning decisions.

10.35 Existing mineral infrastructure across the country is coming under threat from new sensitive developments being implemented close to operations which commonly create noise, dust and visual impacts, amongst others, which are considered unsuitable as neighbouring land-uses for the new development.

10.36 By implementing MICAs, the MPA will have the opportunity to consider whether proposed developments would lead to unacceptable impacts on the mineral infrastructure. This process allows for the county council and district/borough councils to work together to protect the facilities within the identified MICAs.

10.37 Protection can incorporate the use of appropriate buffer areas within the proposal so that sensitive development does not encroach too close to the existing mineral infrastructure operations. It can also incorporate appropriate design so that nearby proposals take account of the potential impacts from the existing facility. This could include including increased mitigation measures, such as reduced windows or increased noise bunding, on the side of a development facing the existing mineral infrastructure. It could also include designing separate access arrangements to keep proposed traffic away from HGV movements.

10.38 The design of protection measures is an opportunity for creative and multi-faceted mitigation to ensure appropriate protection from the potential wide range of adverse impacts associated with the established mineral infrastructure.

10.39 There are some types of development that would not normally cause unacceptable impacts on mineral infrastructure. In order to avoid an unnecessary number of consultations on applications that are unlikely to be objected to, some types of planning application will be exempt from the consultation procedures. The exempt categories, on which consultation will not be required, are as follows:

Excluded Development List	
Mineral Infrastructure	Excluded Development
MICAs for Bulk Transport and Bulk Handling and Processing sites	• Householder planning consent: Applications for alterations to existing single buildings including works within the boundary/garden of a house i.e. (domestic extensions, conservatories, loft conversions, dormer windows, garages and similar structures within the curtilage of an existing dwellinghouse – car ports, outbuildings); • Applications for Advertisement Consent; • Applications for Listed Building Consent; • Lawful Development Certificate (LDC); • Prior Notifications (telecommunications; forestry;

	agriculture; demolition); • Applications for prior approval; • Applications for removal, variation and approval of conditions; • Applications for Tree Works (including consent under Tree Preservation Orders and notification of proposed works to trees in conservation areas); and • Application for non-material amendments.

Policy 9: Safeguarding Bulk Transport and Bulk Handling and Processing Sites

Existing, planned and potential bulk transport, bulk handling and processing, and quarry site processing facilities will be safeguarded for the importation, exportation, storage, handling and processing of minerals (including secondary/recycled aggregates and Construction, Demolition and Excavation waste).

The following bulk transport sites will be safeguarded through Mineral Infrastructure Consultation Areas:

- **Harper Lane, St Albans;**
- **Langley Sidings, Stevenage;**
- **Orphanage Road, Watford;**
- **Rye House, Hoddesdon; and**
- **Walsworth Road, Hitchin.**

The following bulk handling and processing sites will be safeguarded through Mineral Infrastructure Consultation Areas:

- **Birchall Lane/Cole Green, Welwyn Garden City;**
- **Burnside, Hatfield;**
- **Eleanor Cross Road, Waltham Cross;**
- **Harper Lane, St Albans;**
- **Orphanage Road, Watford;**
- **Skinners, Hertford; and**
- **Tyttenhanger, Colney Heath.**

Any proposals for non-mineral development which fall within the Minerals Infrastructure Consultation Areas, other than applications for 'excluded development', will be subject to consultation with the Minerals Planning Authority.

Proposals which would conflict with the effective operation of bulk transport, handling and processing facilities will be opposed unless:

Cont.

- **the existing or disused facility can be satisfactorily relocated within the development proposals in terms of operational requirements and environmental criteria; or**
- **the facility is replaced in an appropriate alternative location.**

Where bulk handling and processing facilities are situated within a host quarry or bulk transport facility, they are safeguarded until the host quarry has been fully restored or for the life of the bulk transport facility.

Mineral Infrastructure Consultation Areas are shown on the Policies Map and Inset Maps in Appendices 2 and 3.

Monitoring

Related Plan Objectives	Obj1, 2 & 6
Plan Targets	T4 & 5
Plan Indicators	IN4 & 5

11 Non-conventional Aggregate Extraction

Borrow Pits

11.1 Development proposals for mineral extraction outside of Specific Sites or Preferred Areas may occur in relation to borrow pits where mineral extraction takes place over a limited period for an exclusive use in a specific construction project. Pits would be located in close proximity to the project and worked in conjunction with it, such as a new infrastructure scheme. Borrow pits have advantages and it is important to ensure that the short term nature of borrow pits are not outweighed by environmental damage. Particular features that need to be considered with a proposal for a borrow pit include biodiversity, landscape and archaeology. Applications will need to be considered against all policies within the Plan.

11.2 Proposals for borrow pits must demonstrate that it is an appropriate location and is the most suitable source of material for that specific project. This includes ensuring that appropriate safeguards are in place for the working of the site and restoring it. Restoration would not be expected to generate additional impacts on an area as they should not require material from outside the adjoining construction project. Proposals for borrow pits could be incorporated into an application for the whole construction project or may be suitable for a separate, standalone planning application depending on the location, scale and timing of developments.

Policy 10: Borrow Pits

Proposals for borrow pits will be permitted where all of the following can be demonstrated:

- **the site's proximity to the construction project is more sustainable than importing aggregate;**
- **the mineral extraction is being used solely for the intended construction scheme;**
- **the borrow pit will not be retained longer than the life of the construction project it serves;**
- **the borrow pit will be restored expediently and at least within the same timescale as the completion of the construction project it relates to;**
- **the proposals are consistent with other policies within this Plan.**

Restoration of borrow pits should be achieved without the need for imported material other than that generated from the associated construction project. If importation of additional material is proposed, it must be demonstrated that the use of additional material is the most sustainable option.

Monitoring

Related Plan Objectives	Obj1, 3 & 4
Plan Targets	T4
Plan Indicators	IN4

Incidental Extraction

11.3 The majority of mineral extraction takes place in established quarries with the principal aim of supplying resources to traditional markets. However, minerals can also be extracted as a secondary activity to other development outside of sites and areas identified by the Minerals Planning Authority (MPA).

11.4 Common examples of incidental extraction include the construction of agricultural or potable water reservoirs. Whilst these developments may be proposed to reduce vulnerability to the impacts of climate change, and other incidental extraction may occur for alternative valid reasons, the construction could involve the extraction of significant quantities of mineral. Where this is the case, or where extracted mineral is to be removed from site, the proposal should be determined by the MPA.

11.5 In these instances, it is important that a requirement can be demonstrated for the development that necessitates the extraction and that the extraction will be limited to a quantity of mineral that is consistent with the scale of the development to prevent the excessive extraction of finite resources. The county council would expect that the restoration of the land forms a central part of the development proposals. Details of both the non-minerals and minerals aspects of the proposed works should be submitted within a working plan including technical details, phasing and proposed timescales for the development. The submission of these details will help to avoid any undue delays in completing the development and prevent land from being left in a partially developed state for an extended period of time.

11.6 Proposals would be looked upon favourably where they are in line with the presumption in favour of sustainable development and where they are consistent with the other policies within this Plan. This could include proposals where the extracted mineral is to be used on-site or close to the extraction site, to minimise the required transportation of mineral to an end-use by road, or where the mineral is to be used to enhance the character and quality of Hertfordshire’s landscape and environments.

Policy 11: Incidental Extraction

Proposals for development involving the incidental extraction of mineral as a subordinate and ancillary element of other development outside of Specific Sites and Preferred Areas will only be permitted where it can be demonstrated that:

- **there is a proven need for the non-mineral development;**
- **the amount of mineral to be extracted is consistent with the purpose and scale of the development;**
- **the extracted mineral will be put to sustainable use;**
- **the transportation of extracted mineral to processing sites will not have a significant adverse impact on highways safety and the effective operation of the highway network;**
- **the phasing and duration of development proposals guarantee the worked land is restored as early as practicable and without the need for imported material; and**
- **the proposals are consistent with the other policies within this Plan.**

Applicants must submit details of the location where extracted minerals will be transported for processing, where appropriate, and the proposed use of extracted minerals.

The county council will expect a working plan to be submitted, providing details of how and when the non-mineral developments are to be undertaken and completed.

Monitoring

Related Plan Objectives	Obj1 & 3
Plan Targets	T4
Plan Indicators	IN4

12 Protecting Hertfordshire

Green Belt

12.1 The NPPF states that the fundamental aim of Green Belt Policy is to prevent urban sprawl by keeping land permanently open and that the essential characteristics of the Green Belt are its openness and permanence. With over half of Hertfordshire designated as Metropolitan Green Belt, the need to protect the Green Belt is an important local consideration.

12.2 Taking into account the temporary nature of mineral extraction and associated development, the NPPF deems mineral extraction 'not inappropriate' within the Green Belt, provided it preserves the openness of the Green Belt and does not conflict with the purposes of including land in Green Belt. Minerals working can therefore be accommodated within the Green Belt provided that the associated developments, including buildings and processing machinery, are designed and positioned appropriately to prevent conflict with the purposes of the Green Belt.

12.3 Each proposed facility will need to be appraised on a site- and technology-specific basis and all development should be tied to the life of the extraction with plant and machinery removed expediently following the completion of the mineral extraction.

12.4 In addition to the need to protect the Green Belt, there is also an opportunity to enhance its beneficial use following the restoration of the site. Mineral extraction proposals that are restoration-led can be used to enhance Hertfordshire's Green Belt. The county council will plan positively to enhance the beneficial use of the Green Belt through opportunities that provide access, outdoor sport, recreation, retain and enhance landscapes, visual amenity and biodiversity, and repair damaged and derelict land.

12.5 Minerals can only be worked where they are found and this must be considered when determining mineral proposals within the Green Belt.

Policy 12: Green Belt

Proposals for mineral extraction and associated development in the Green Belt will be permitted subject to the development complying with national Green Belt policy and other policies set out in this Plan.

Proposals must site machinery to preserve the openness of the Green Belt and prevent conflict with the purposes of including land in the Green Belt throughout the duration of mineral operations.

Inappropriate development will not be approved except in very special circumstances. Very special circumstances will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations. ***Cont.***

The proposed restoration of the site must not conflict with any of the five purposes and should preserve the openness of the Green Belt and where possible enhance the beneficial use of the Green Belt and improve the character and appearance of the countryside.

Monitoring

Related Plan Objectives	Obj5. 7 & 8
Plan Targets	T7
Plan Indicators	IN7

Cumulative Impact

12.6 Minerals development can have significant impacts upon the environment and local communities. This can be magnified by simultaneous and/or successive extraction in close proximity, by individual sites which cause numerous significant impacts, or by the extended working of a site resulting in many years of activity in one location.

12.7 National policy is very clear that cumulative impacts should be a material consideration and that environmental criteria should be set out to ensure that permitted operations do not have unacceptable adverse impacts on, amongst others, the following considerations:

Natural Environment:

- Appearance, quality and character of the landscape;
- Biodiversity;
- Geological interest;
- Flood risk and flood alleviation
- Quality of the water courses, groundwater and surface water;
- Best and most versatile agricultural land; and
- Land stability.

Built Environment:

- Delivery of strategic non-mineral Local Plan allocations
- HGV movements

Historic Environment:

- Heritage and archaeological assets; and
- Social, cultural, economic and environmental benefits of conservation.

Human Health and General Amenity:

- Unavoidable noise, dust and particle emissions and any blasting vibrations; and
- Public Rights of Way.

Transport Networks:

- Local roads;
- Primary Route Networks;
- Safety and congestion;
- Additional trip generation; and
- Access to and effective operation of the Transport Network;

Aviation Safety:

- Risk of bird strike within the Aerodrome Safeguarding Areas around London Luton Aerodrome and London Stansted Aerodrome.

12.8 The list is not exhaustive and proposals will be appraised with regards to the cumulative impact of a proposal on a site-by-site basis taking into account any sensitive properties in close proximity to the proposal and the management and reclamation of other sites locally.

Policy 13: Cumulative Impact

Proposals for mineral extraction, associated development and reclamation will be permitted where the cumulative impact would not result in unacceptable adverse impacts on the environment of an area or on the amenity or health of a local community, either in relation to the collective effects of different impacts of an individual proposal or in relation to the effects of a number of developments occurring either concurrently or successively.

Proposals will need to take into account the potential cumulative impacts and demonstrate that appropriate mitigation has been incorporated with regards to the following potential matters:

- **natural environment;**
- **built environment;**
- **historic environment;**
- **human health and general amenity;**
- **transport Networks; and**
- **aviation safety.**

Monitoring

Related Plan Objectives	Obj5, 7 & 8
Plan Targets	T7
Plan Indicators	IN7

13 Environmental Policies

Water Management

Hertfordshire Context

13.1 Hertfordshire overlaps two main river catchments: the Colne in the west and Upper Lee in the east, with several others at the extremities, such as the Thames Valley in the far west of the county.

13.2 The River Lee and its tributaries, which rise in Hertfordshire and flow south to the Thames, have a significant flood plain area, especially to the south - Bishop's Stortford, Ware and Hertford all lie on or immediately adjacent to the floodplain. There are a number of settlements along the flood plain on the Broxbourne-Epping Forest border, including Broxbourne and Cheshunt and there are additional floodplains along other rivers in the county.

13.3 The county lies within two Environment Agency river basin districts, the Anglian and Thames and the Agency has recently updated long-term strategies for both[33]. The Anglian region is the driest region in England and Wales, and exhibits large areas where no further water is available during summer and some areas where damage is already occurring. In general winter surface water is available across the region. The Thames region also suffers from demand pressures, with summer surface water now fully committed and with licensing for further consumption highly constrained. Whilst winter surface water resources in the Lee Catchment are generally available, parts do suffer from periods of unsustainable abstraction in terms of winter surface water availability.

13.4 The Environment Agency flood maps, based on indicative natural flood plains, indicate that areas of Hertfordshire are at risk of flooding . These represent land which lies beneath the fluvial 1:100 year return period water level.

13.5 Climate change and rising demand are all likely to affect water quantity and quality, and so more efficient use of water is vital to cope with these changes. The Environment Agency has recently updated guidance on the inclusion of Climate Change Allowances in Flood Risk Assessments for proposed development.

Strategic Flood Risk Assessment:

13.6 The NPPF[34] requires Local Plans to be supported by a Strategic Flood Risk Assessment (SFRA). The county council prepared a Level 1 SFRA[35] in line with guidance published by the Environment Agency[36] at the outset of the review of the Minerals Local Plan.

[33] Anglian river basin district River Basin Management Plan 2015 & Thames river basin district River Basin Management Plan 2015
[34] NPPF, 2012 - Paragraph 156
[35] Hertfordshire Minerals Local Plan Review Level 1 Strategic flood Risk Assessment, March 2015
[36] Strategic Flood Risk Assessments, Guidance to support the National Planning Policy Framework, July 2013

13.7 The Hertfordshire SFRA is a desktop based study and has been written using information available from published district/borough SFRAs, and other reports that identify areas at risk of flooding. It provides an overview of flood risk within Hertfordshire and has been used as a tool for assessing flood risk in the preparation of the Plan and will continue to be used in future stages of Plan-production.

13.8 An addendum to this document was produced to include site-specific assessments in preparation for the publication of this document.

Policy Background

13.9 Mineral workings have the potential to impact water resources at a specific site or as part of the wider area. Planning applications must address the likely effects of a proposed development on surface water and groundwater in terms of changes to flow, water table, water temperature and quality.

13.10 The Water Framework Directive (WFM) dictates that mineral developments must not cause any unacceptable adverse impact on local water bodies. As roughly 70% of Hertfordshire is covered by Source Protection Zones[37], which provide much of the county's drinking water and maintain the flow in many of our rivers, this is of particular local importance.

13.11 National policy states that development should be steered towards areas of lower flood risk but considers that where it cannot be avoided, minerals development can be an appropriate land use in areas of higher flood risk. In these instances, infrastructure and operations on site should be directed away from areas of higher flood risk and the county council would support proposals that provide beneficial impacts related to flooding. This may involve increasing the capacity of the floodplain and/or the free flow of floodwater through the development's design.

13.12 In accordance with national guidance, proposals for developments over 1 hectare or within flood risk zones 2, 3a or 3b must be accompanied by a site-specific Flood Risk Assessment and must contain mitigation measures with regards to either the Thames or the Anglian River Basin Management Plans, should the proposal affect a relevant water body. Assessments should incorporate climate change allowances to help to minimise vulnerability and provide resilience to flooding in the future. The level of climate change allowances to be included in a site-specific flood risk assessment is set by the Environment Agency. Guidance can be found on the Environment Agency website to determine what allowances should be used as part of an assessment. These are based on the river basin, flood zone and duration of development amongst other categories.

13.13 Consultation should be undertaken with the Environment Agency at an early stage in the application process to determine any additional concerns that

[37] Environment Agency Groundwater Protection Zones Map 2016

need addressing as part of the proposal and the level of detail required. Following submission of a planning application, the Environment Agency will then advise the county council whether the applicant's proposed mitigation measures are sufficient for planning permission to be granted.

13.14 The county council, as Lead Local Flood Authority (LLFA) for Hertfordshire will determine whether the application requires a Sustainable Drainage System (SuDS) to be incorporated into the design of the development. If a SuDS scheme is considered necessary, the county council will be required to approve the submitted SuDS before development can commence on site.

13.15 Measures will be expected as part of a proposal to mitigate against the potential impacts both during mineral extraction and following restoration of the worked land. Water management should be a key focus of a restoration plan, specifically to ensure that restored land does not cause greater runoff levels than expected from green field.

Policy 14: Water Management

Proposals for mineral extraction, associated development and reclamation will be required to take into account the impact on water supply, water quality and flood risk. Proposals will be permitted where it can be demonstrated that:

- **there are no unacceptable adverse impacts to water quality, nature conservation and amenity value of water resources from the proposed development;**
- **the proposals, including reclamation of the site, reduce flood risk, taking account of climate change allowances;**
- **proposals do not cause adverse impacts on the flow and quality of surface water and groundwater on the site and elsewhere;**
- **development or operations on the site are directed away from areas of high risk of flooding;**
- **developments meet the National and Local principles/standards for Sustainable Drainage Systems (SuDS) design to reduce surface water run-off; and**
- **restoration of the site will conserve and enhance water management.**

Monitoring

Related Plan Objectives	Obj5, 7 & 8
Plan Targets	T7
Plan Indicators	IN7

Historic Environment

Hertfordshire Context

13.16 With a rich history and culture, Hertfordshire's environment contains an interesting variety of archaeology, buildings and structures, areas of historic landscape, conservation areas and historic parks and gardens. These include:

- Scheduled Monuments;
- Listed buildings and their setting;
- Conservation areas; and
- Registered Parks and Gardens.

13.17 There are Mesolithic and Bronze Age sites, nationally important late Iron Age and Roman remains, as well as medieval moated sites, historic parks and timber farm buildings. There are numerous historic towns and villages, including pioneering 20th century settlements such as garden cities and new towns, historic market towns and World War Two remains.

13.18 There are around 170 Scheduled Monuments throughout the county with certain concentrations around historic towns in the north, such as St Albans, and along communication routes, such as the Lee Valley. There are a significant number of Listed Buildings with concentrations in the county's historic towns such as Hertford and St Albans. There are 110 Grade I, 472 Grade II* and 7,477 Grade II listed buildings. There are 45 parks and gardens of special historic interest in Hertfordshire, as listed by Historic England and these include two Grade I, nine Grade II* and 34 Grade II parks and gardens.

13.19 As well as all of the known heritage assets, there are many non-designated heritage assets and archaeology sites in Hertfordshire. They may be of equal significance and must be considered during minerals planning and development to ensure these areas and assets are safeguarded.

Policy Background

13.20 The NPPF[38] requires a level of protection for the continued conservation, enhancement, enjoyment and understanding of Hertfordshire's historic environment.

13.21 Mineral operations have the potential for unavoidable negative impacts to the heritage and setting of a site and surrounding area. Impacts associated with the mineral activity could include noise, vibration, dust, light pollution or heavy traffic. Conversely, they may also offer opportunities to improve access to historic sites, enhance the setting of historic features and lead to significant archaeological discoveries and enable historical research due to the size of the proposed developments.

[38] NPPF, 2018 – paragraph 170

13.22 Policy 15: Historic Environment therefore aims to conserve and enhance the physical structure, setting and features of historic interest and puts provisions in place for their protection as well as the recording, interpretation and publication of findings where the potential impact on a feature necessitates its removal from site. It is acknowledged that mineral extraction is likely to cause temporary negative impacts. These negative impacts should be balanced against the long term benefits that mineral developments can provide, including the reversal of previous impacts on heritage assets. As a baseline, proposals should seek to conserve existing heritage assets and, where appropriate, enhance them.

13.23 Applicants should review the relevant and most up-to-date historic, environment and heritage asset records and submit a desk-based assessment and, where necessary, a field evaluation (which may include intrusive investigations) as part of an application for minerals development. The applicant should use appropriate expertise and seek correspondence with the county council early in the planning application process to determine the level of detail required for an assessment and if there is a requirement for subsequent mitigation prior to, and throughout, the duration of the development.

13.24 Proposals should take into account the significance of any heritage assets affected and the contributions made by their setting. Regard should also be given to the relative importance of designated and non-designated assets including locally listed buildings and unidentified heritage assets such as sites of historic and/or archaeological interest, along with the potential for previously unrecorded archaeological remains and the impacts on historic landscape character. Where the restoration of proposed mineral development allows the opportunity to improve the heritage asset or setting of an asset, this should be incorporated into the requirements of Policy 24: Restoration.

Policy 15: Historic Environment

Proposals for mineral extraction, associated development and reclamation will be permitted where it can be demonstrated that the proposal will protect, conserve and where appropriate enhance the historic environment.

Proposals will be required to describe the significance of any heritage assets affected by the proposals, including any contribution made by their setting, integrity and distinctiveness and the level of the impact within an appropriate desk-based assessment and, where necessary, a field evaluation, which is linked to a Landscape and Visual Impact Assessment where necessary. The assessment should use relevant historic, archaeological, environmental, the Historic Environment Record and appropriate expertise, where necessary, and inform mitigation measures proportionate to the affected heritage assets' importance.

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The county council will expect developers to record the evidence and make any archives and subsequent assessment publically accessible to promote the understanding of the heritage asset.

Monitoring

Related Plan Objectives	Obj5, 7 & 8
Plan Targets	T7
Plan Indicators	IN7

Landscape and Green Infrastructure

Hertfordshire Context[39]

13.25 Hertfordshire comprises a rich variety of landscapes, each with its own distinct character and 'sense of place.' The natural, Green Infrastructure (GI) and cultural features that shape these landscapes are described within a suite of landscape character assessments, produced at three spatial scales:

- National Character Area Profiles (NCAs), Natural England
- East of England Landscape Typology, Landscape East
- Hertfordshire Local Landscape Character Assessments

13.26 Across the county there are several landscape designations and landscape scale initiatives that have strong landscape objectives:

- The Chilterns Area of Outstanding Natural Beauty;
- The Lee and Colne Valley Regional Parks;
- Watling Chase Community Forest;
- Heartwood Forest:
- Registered parks and gardens and other landscapes of historic interest; and
- Landscapes of local value.

13.27 Many of these features contribute to the county as GI which can be defined as 'the network of natural and semi natural features, green spaces, rivers and lakes that intersperse and connect villages, towns and cities[40]'. When appropriately planned, GI can deliver multiple environmental, social and economic benefits such as surface water management, recreation and health, and biodiversity enhancement.

13.28 The Hertfordshire Green Infrastructure Strategies provide an overview of existing strategic GI assets within the county, and identifies opportunities for the creation and enhancement of GI. Mineral extraction can offer such opportunities.

[39] Hertfordshire Landscape Character Area Statements (2000-2005)
[40] Landscape Institute Position Statement, Green Infrastructure, March 2013

Policy Background

13.29 National policy is clear that the importance of the natural environment should be taken into account in Plan-making and decision-taking.

13.30 When assessing potential impacts, proposals should distinguish between the hierarchy of international, national and locally designated sites. Proposals should demonstrate how they will protect and enhance valued landscapes, and recognise the intrinsic character and beauty of the countryside. In addition, reference should be made to Policy 15: Historic Environment and Policy 17: Biodiversity.

13.31 The county council encourages proposals to conserve and enhance these aspects and demonstrate their importance and the contribution that they make to wider ecological networks. As a baseline, proposals should conserve the existing landscape and green infrastructure and seek to provide net environmental gains.

13.32 Reference should be made to the Hertfordshire Local Nature Partnership Guiding Principles and the relevant landscape character assessments. These landscape character assessments help to:

- Identify what environmental and cultural features are present in a locality;
- Monitor change in the environment;
- Understand a location's sensitivity to development and change; and
- Inform the conditions for any development and change.

13.33 The landscape character assessments should be used to assist in all aspects of mineral planning, however further areas of work may need to be commissioned to support these assessments, for example a full Landscape and Visual Impact Assessment (LVIA).

13.34 A LVIA should follow the guidelines for LVIA produced by Landscape Institute and Institute of Environmental Management & Assessment.

13.35 It is acknowledged that mineral extraction is likely to cause temporary negative impacts. These negative impacts should be balanced against the long term benefits that mineral developments can provide, including improved leisure-use, vital for health and well-being.

13.36 Proposals for mineral extraction should seek to meet local green infrastructure needs and deliver opportunities for protecting, conserving and enhancing multifunctional green infrastructure assets and networks, for example ecological networks, as set out in the Hertfordshire Green Infrastructure Strategy and local Green Infrastructure strategies.

13.37 Landscape mitigation and enhancement measures should be considered as an integral part of any scheme for mineral working and restoration. In

designing final restoration schemes reference should also be made to Policies 24 and 25 of this Plan.

13.38 In circumstances where mitigation measures are needed, the mitigation hierarchy should be applied to ensure that in the first instance any negative impacts are avoided, where they cannot be avoided they should be reduced, and where they cannot be avoided or reduced they should be compensated for.

Policy 16: Landscape and Green Infrastructure

Proposals for mineral extraction, associated development and reclamation must take into account the existing landscape and green infrastructure, and should protect and/or enhance the landscape character, quality, visual amenity and green infrastructure.

Proposals for mineral extraction and associated development will be permitted where it can be demonstrated that throughout the life time of the development (including restoration):

- **there are no unacceptable landscape and visual effects;**
- **any unavoidable landscape and visual effects have been minimised through appropriate mitigation;**
- **valued landscapes are protected and enhanced;**
- **continued long term improvements are made to the wider ecological networks and green infrastructure; and**
- **after reclamation, the landscape is conserved and enhanced and the highest practicable environmental standards are achieved.**

Proposals must assess the landscape character, quality and visual effects of the development through a full Landscape and Visual Impact Assessment with reference to current landscape character assessments, green infrastructure strategies and management plans for the area.

Monitoring

Related Plan Objectives	Obj5, 7 & 8
Plan Targets	T7
Plan Indicators	IN7

Biodiversity

Hertfordshire Context

13.39 Natural England has identified a series of National Character Areas (NCAs) which form distinct geographical areas across England in terms of their landscape, wildlife and historic characteristics. Hertfordshire contains four main NCAs: the Chilterns, Northern Thames Basin, South Suffolk and North Essex Claylands, and East Anglian Chalk, as well as small sections of the Bedfordshire Claylands and Thames Valley in the north west and south west of Hertfordshire. These reflect the distinctive landscapes and habitats across the county, from the chalk scarp grasslands and chalk streams of the Chilterns to the hornbeam woodlands and remnant heaths of the London clay and gravels.

13.40 On behalf of the Hertfordshire Environmental forum, the Herts and Middlesex Wildlife Trust (HMWT) prepared a Local Biodiversity Action Plan (BAP) for the county in 1998 which was revised in 2006. This sets out a series of Habitat and Species Actions Plans reflecting national and local priorities. Whilst these remain technical documents, the BAP process was formally superseded by the Local Nature Partnership (LNP) in 2012. This has replaced the High Biodiversity Areas with the Ecological Network Mapping to identify priority habitats and areas for potential ecological restoration. The LNP has published a series of high level guiding principles and also provides planning guidance and embraces other conservation initiatives.

13.41 Key to delivering these objectives are Sites of Special Scientific Interest, of which Hertfordshire has 43 and which provide statutory protection and management for these nationally important ecological and geological sites. A number of these also contribute to the internationally important designations of the Chilterns Beechwoods Special Area of Conservation, Wormley Hoddesdon Park Woods Special Area of Conservation (and National Nature Reserve), and the Lea Valley Special Protection Area and Ramsar (International wetland) site. There are also 42 Local Nature Reserves, mainly managed by HMWT, as well as (currently) 1,812 non-statutory Local Wildlife Sites and Regionally Important Geological / Geomorphological Sites recognised for their significant contribution to the biodiversity within Hertfordshire.

Policy Background

13.42 National policy is clear that the planning system should contribute to and enhance the natural and local environment by:

- Protecting and enhancing valued landscapes, geological conservation interests and soils;
- Recognising the wider benefits of ecosystem services;
- Minimising impacts on biodiversity and provide net gains in biodiversity, where possible including establishing coherent ecological networks that are more resilient to current and future pressures.

13.43 For Hertfordshire, sites of importance to biodiversity can cover international, national and locally designated sites including:

- Special Areas of Conservation (SAC);
- Special Protection Areas (SPA);
- Ramsar sites;
- Sites of Special Scientific Interest (SSSI); and
- Locally designated sites including Local Wildlife Sites.

13.44 When determining mineral planning applications, the county council will have reference to the distinction between the hierarchy of designated sites and to the priority habitats and species for Hertfordshire as identified through the S41[41] list requiring special consideration.

13.45 Reference should also be given to the Local Nature Partnership Guiding Principles for planning for biodiversity and the natural environment which are:

1. Recognise the value of the natural environment and the range of benefits and services it provides;
2. Protect and enhance existing biodiversity assets;
3. Seek opportunities to improve habitat connectivity;
4. Integrate biodiversity opportunities within new development;
5. Make decisions informed by the best available ecological information and data;
6. Secure the long term management of existing and new habitats/sites.

13.46 Any proposals for mineral development should be accompanied by an Ecological Survey and assessment of the impacts on habitat, species and connections to existing ecological networks that may be affected[42].

13.47 Where possible, extraction sites and mineral operations should be sited on land with the least environmental or amenity value. Any proposals should demonstrate how the development will mitigate any potential impacts in accordance with the mitigation hierarchy.

13.48 The county council as Minerals Planning Authority (MPA) will, where appropriate, seek a net gain to local biodiversity through restoration. Net gain to habitats will be assessed by applying an appropriate biodiversity impact assessment metric[43].

13.49 Sites should be restored at the earliest opportunity and to a high environmental standard. It should be recognised that there may be opportunities for mineral development to contribute or enhance the natural and

[41] Species and Habitats of Principle Importance included in the England Biodiversity List published by the Secretary of State under section 41 of the Natural Environment and Rural Communities Act 2006
[42] Guidance is currently provided in BS 42020:2013 Biodiversity – Code of practice for planning and development
[43] This could be the DEFRA biodiversity impact assessment metric (Biodiversity Impact Calculator, Environment Bank 2015)

local environment, including ecological networks, and restoration should be influenced by appropriate local data sources[44].

13.50 When determining proposals, the county council will take into account the contents of any existing biodiversity policies in relevant local or neighbourhood plans as well as any other local biodiversity-related plans.

13.51 The county council will consider the need for biodiversity surveys or monitoring during and after the lifetime of the development, to ensure adequate protection of species and habitats. Where necessary, applicants may be required to submit a framework for management and control during the operation and reclamation of a site[45].

Policy 17: Biodiversity

Proposals for mineral extraction, associated development and reclamation should be consistent with national and local biodiversity policies and guidance, informed by existing and new ecological information as necessary and green infrastructure plans.

In line with the mitigation hierarchy, proposals for mineral extraction and associated development will be permitted where it can be demonstrated that throughout the life time of the development (including restoration):

- **the impact on biodiversity through loss of or damage to habitats and/or species is minimised;**
- **there is a measurable net gain in biodiversity, during restoration and aftercare, demonstrated by an acceptable method;**
- **biodiversity networks can be enhanced and contribute to the wider ecological networks and local green infrastructure;**
- **there are no irreversible or unacceptable impacts on International, National and Local statutory nature conservation sites (e.g. Special Areas of Conservation, Special Protection Areas, Ramsar sites, National Nature Reserves, Sites of Special Scientific Interest);**
- **there is no loss or deterioration of irreplaceable habitats including ancient woodlands, veteran trees;**
- **the requirements of protected species can be fully and satisfactorily demonstrated at all stages of the development; and**
- **adequate mitigation is in place to compensate for irreversible damage or loss of European Protected Species including their place of rest/shelter.**

Proposals must submit an acceptable ecological survey and scheme for monitoring the biodiversity within the site prior to, during and after extraction.

[44] An example being the Herts Ecological Networks Mapping system to direct appropriate habitat restoration, creation and enhancement measures

[45] This could be in the form of a Construction Environmental Management Plan or Biodiversity Enhancement Plan

Monitoring

Related Plan Objectives	Obj5, 7 & 8
Plan Targets	T7
Plan Indicators	IN7

General Amenity Protection

Hertfordshire Context

13.52 Hertfordshire residents enjoy a relatively good quality of life with high levels of employment, access to services and recreation, and a range of high quality built and natural environments. These all contribute to the county's amenity, which is an important consideration in planning. A broad range of features contribute to amenity, including land uses such as private/public gardens, sports fields, country paths and an extensive public Rights of Way network. There are also natural features which further contribute, including mature trees and water bodies.

13.53 There are sensitive receptors in the county which will be impacted by varying degrees to amenity issues caused by mineral extraction and associated development. The Plan therefore seeks to protect these receptors from impacts such as light, noise, and air pollution (eg. dust).

Policy Background

13.54 The purpose of the Plan is to balance the need for mineral extraction against potential impacts that mineral extraction can have on the local community and the environment.

13.55 The process of extracting minerals, processing the material, transporting material around the site and off to the market all need to be fully considered and addressed at an early stage in the planning process to minimise any adverse impacts associated with the activity to protect the environment and amenity in the area. Amenity is defined as a combination of the positive element or elements that contribute to the overall character or enjoyment of an area. For example, open land, trees, historic buildings and the inter-relationship between them, or less tangible factors such as tranquillity. Impacts associated with the mineral activity on amenity include noise, vibration, dust, light pollution or heavy traffic.

13.56 The quality of the environment plays a key role in both maintaining and enhancing quality of life and contributing to the wider economic development in the county. Impacts on the quality of the environment will be used as an indicator of any impacts on health and safety and the quality of life.

13.57 Some noisy short-term activities are unavoidable when carrying out mineral extraction as identified within the NPPF. Noise should be fully appraised in a

Noise Impact Assessment which should include in its analysis, evidence of any potential rise which may cause significant adverse effect(s) as a result of the development and details of ensuring a good standard of amenity.

13.58 Dust is also a consequence of all mineral extraction operations. It is an important consideration set out within the NPPF which establishes five key stages of a Dust Assessment Study. Due to its presence in mineral operations a management plan will be required for the suppression of dust on site related to extraction, processing and transportation.

13.59 Air quality can be affected by increased traffic and the extraction activity at a site. Early analysis of this potential impact should be provided in the form of an Air Quality Assessment compliant with Environment Agency guidelines as part of the proposal. This will establish any need for mitigation measures to protect human health and the integrity of any internationally designated Natura 2000 sites (that is, Special Areas of Conservation, Special Protection Areas) and Ramsar sites.

13.60 The Local Air Quality Management (LAQM) regime, supported by Department for Environment, Food and Rural Affairs (DEFRA), requires every local authority and district to review and assess air quality in their area. If national objectives are not met, then the local authority must declare an Air Quality Management Area (AQMA) and prepare an action plan. There are currently 32 AQMA's across Hertfordshire and there may be the requirement to assess air quality impacts of minerals development against Air Quality Impact Assessment Areas.

13.61 Artificial lighting on mineral sites can result in light pollution in the surrounding area. The most appropriate level of directional lighting will be required on sites to minimise as far as possible any light emitted into surrounding areas which could impact upon local wildlife habitats or nearby residential development.

13.62 In order to ensure that mineral extraction takes place in a planned and orderly manner, whilst minimising any adverse environmental and amenity effects, an Environmental Impact Assessment may be required in support of a planning application, which would consider health impacts. A Health Impact Assessment may be an appropriate tool to assess the full range of potential impacts on health as a result of the proposed development, and the following policy criteria shall apply. Consideration of other impacts is dealt with under other policies within the Plan.

Policy 18: Protection and Enhancement of Amenity

Proposals for mineral extraction and associated development will be permitted where they are accompanied by an assessment which clearly demonstrates that consideration has been given to amenity, which includes the natural, built and historic environment, public health and safety, and quality of life. The assessment must show that:

- **proposals will not cause any unacceptable adverse impacts or harm to amenity;**
- **appropriate mitigation measures have been incorporated to conserve amenity; and**
- **where possible, enhancements have been made to amenity.**

Monitoring

Related Plan Objectives	Obj5, 7 & 8
Plan Targets	T7
Plan Indicators	IN7

Health and Wellbeing

13.63 The Health and Social Care Act 2012 gave local authorities new responsibilities to improve the health of their populations and specifically to reduce health inequalities. A range of health and wellbeing issues face the UK both at individual and population level, including physical inactivity, increasing obesity, growing mental ill health, dementia and social isolation.

13.64 There is a growing body of evidence from published peer-reviewed and grey literature to suggest that contact with a wide range of natural environments can provide multiple benefits for health and wellbeing. The continued need to strengthen the connection between people and nature is an area of key focus in the Government's 25 Year Environmental Plan, which aims to: improve access to natural, green and open spaces; increase tree planting; and create more green infrastructure to help people connect better with nature.

13.65 The geology of Hertfordshire means that historic mineral extraction sites are a part of the county's landscape with some noteworthy extraction sites now offering access to high quality natural environments, such as the Lee Valley Regional Park and the Amwell Nature Reserve.

13.66 The Plan has a role to play in ensuring the legacy of extraction sites, once they come to the end of operation, is positively planned with health and wellbeing in mind, with the restoration of the countryside seen as a way in which to improve and enhance the county's green infrastructure 'offer' for recreation and physical activity. Research suggests, for example, that when

people have good access to green space (perceived or actual) they are 24% more likely to be physically active[46]. The potential cost savings to the health service from improved access to green space are significant. For example, outdoor exercise delivers an estimated £2.2bn of health benefits to adults in England each year[47].

13.67 Positive outcomes from mineral extraction restoration might include:

- Opportunities for environmental improvements such as new or increased habitat;
- Improved public access;
- Enhanced green infrastructure;
- New and/or improved local amenity and recreational facilities;
- Increased opportunities for walking and cycling and other physical activity;
- Increased opportunities for informal sport and recreation;
- Improved environmental and wildlife education opportunities; or
- Improved community facilities and accessibility to natural services.

13.68 The benefits for health and wellbeing from an improved natural environment include:

- Improvements to physical health (through increased physical activity); and
- Improvements to psychological and social wellbeing in a number of ways, including:
    - Reductions in stress and anxiety;
    - Increased positive mood, self-esteem and resilience; and
    - Improvements in social functioning and in social inclusion.

13.69 Environments rich in wildlife are also associated with improved wellbeing, through emotional, social and psychological benefits. Evidence also suggests that biodiverse natural environments may be associated with good health and wellbeing, with improvements ranging from better mental health outcomes, to associations with increased healthy behaviours.

13.70 Increasing access to a wide range of nature-based activities across Hertfordshire's communities can provide benefits to public health and provide savings to the UK economy. Policy 19 therefore seeks positive health and wellbeing outcomes from mineral workings.

13.71 Planning regulates land use and thus has great potential to influence health and it is recognised by the county council that individual site proposals that come forward through the Plan may have the potential to impact on health and that these may be a concern to members of the public. In line with Environmental Impact Assessment (EIA) requirements, it is important to explore the potential health impacts and benefits of/from mineral extraction.

[46] An estimate of the economic and health value and cost effectiveness of the expanded WHI scheme 2009, Natural England Technical Information Note TIN055, 2009
[47] https://www.sciencedirect.com/science/article/pii/S0091743516302298

Undertaking a Health Impact Assessment may be an appropriate mechanism for assessing these health impacts and benefits.

13.72 The need to undertake a full Health Impact Assessment for site specific proposals should be assessed via the EIA screening process and in consultation with the county council as the Minerals Planning Authority and Public Health.

Policy 19: Health and Wellbeing

Where appropriate, proposals for mineral extraction, associated development and reclamation will be permitted where it can be clearly demonstrated:

- **that the potential health impacts have been adequately assessed;**
- **how the proposals offer enhanced access to the natural environment; and**
- **how the reclamation will contribute to positive health and wellbeing outcomes.**

Monitoring

Related Plan Objectives	Obj5, 7 & 8
Plan Targets	T7
Plan Indicators	IN7

14 Highways and Transport

Strategic Transport

Hertfordshire Context

14.1 Hertfordshire's current transport system is complex. With several main road and rail arteries, Hertfordshire is a well-connected county with a north-south focus serving London, the Midlands and the North. The M1, A1, M25, A414 and A10 are some of the busier routes by road. The West Coast and East Coast Main Lines are two of the key rail routes through the county along with the Midland Mainline and West Anglia Mainline.

14.2 With no dominant centre in Hertfordshire to act as a central point for transport and many medium sized towns separated by only a few miles, Hertfordshire has a dense population which contributes to capacity problems on the county's road network.

14.3 In 2017, an average of 38.37 million kilometres was travelled by vehicles on roads in Hertfordshire per day. This is a 2.3% increase on the figure of 37.51 million km per day from 2016[48].

Policy Background

14.4 There is heavy reliance on road transport within the county for the movement of people and goods. Any mineral operations within the county need to acknowledge the existing highway situation and, in accordance with national policy, seek to minimise travel and actively promote alternatives to road transport. It is recognised that more sustainable modes may not always be feasible.

14.5 Mineral extraction can generate heavy lorry traffic in and around the site which can have a significant adverse impact on the highways network in some locations of the county. Mineral resources are not wide spread across the county and are predominantly restricted to the sand and gravel belt where they naturally occur. As a result there is more chance of there being mineral related traffic in some areas more than others. In addition the use of minerals extracted in Hertfordshire is not restricted to the county and can supply markets across the country which can also generate mineral related traffic on the highway. For example, in 2014, 22% of Hertfordshire's primary aggregate sales went to the East of England and 21% to other destinations, as reported in the Local Aggregate Assessment 2017.

14.6 Movement of minerals is two-fold. Firstly there is the movement of the mineral at the extraction site on the quarry to the processing plant; and secondly the transport from the plant site to the customer. Whilst the first stage of moving minerals can be kept off public roads through using haul routes or conveyor

[48] Hertfordshire's Traffic and Transport Data Report 2018

belts, movement to the market often involves heavy goods vehicles on the public highway.

14.7 Any potential impact on the highways network needs to be assessed as part of any mineral planning application due to heavy goods vehicles contributing to noise, dust and congestion on the roads. The county council would seek to use planning controls to manage lorry movements associated with mineral operations such as access improvements, restrictions on single lengths of roads or bridges or area wide bans to channel heavy lorry traffic on the most suitable routes.

14.8 Mineral related traffic is more suited to the primary route network as defined by the county council as Local Highway Authority. The Local Transport Plan[49] states that the county council will promote a road hierarchy and encourage heavy goods vehicles to use the primary route network. This will help keep traffic away from local roads and reduce impacts on residential development or other amenity.

14.9 The following policy sets the overarching position in terms of transport and seeks to encourage the use of alternative means of transport for minerals traffic to that of the road network.

Policy 20: Strategic Transport

Mineral extraction sites and associated development must be well located in relation to the primary route network as defined by the Local Highway Authority.

Proposals for mineral extraction, associated development and reclamation should seek to use sustainable transport and where possible minimise transport movements and distance travelled by road, through the use of sustainable methods such as rail or water or use on site.

Proposals for mineral extraction and associated development must demonstrate:

- **how opportunities for alternative methods of transport have been evaluated;**
- **how movements on the highway have been minimised; and**
- **the consideration of the site's location in relation to the primary route network.**

Proposals for new or replacement aggregate terminals for rail and water transport will be supported, subject to the suitability of the local road network for secondary collection and distribution.

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[49] Policy 16: Freight and Logistics. Hertfordshire's Local Transport Plan (May 2018)

All proposals will need to take into account any unacceptable adverse impacts on the local road and rights of way networks, public health, amenity, wildlife habitats and the natural, built and historic environment.

Monitoring

Related Plan Objectives	Obj4, 5 & 6
Plan Targets	T7
Plan Indicators	IN7

Operational Transport

14.10 Mineral developments contribute to additional traffic movements on the highway network, particularly heavy goods vehicles. In some instances there will be the need to make highway improvements as part of a mineral development to ensure safety of access to and from the site and free flowing movement of traffic on the highway for all users. Depending on the location of a site there may be the need to manage the direction of heavy goods vehicles associated with the mineral development to direct them away from sensitive areas such as residential areas or roads with limited width or weight limits.

14.11 If a development were to lead to severe impacts on the highway network, the NPPF states that planning permission could be refused when the impacts are assessed cumulatively.

14.12 All development that generates significant amounts of transport movement should be supported by a Transport Assessment which should detail the cumulative impacts of the development from transport and vehicle movements.

14.13 Where appropriate, the Transport Assessment should set out measures to minimise movements by road based HGVs.

14.14 Proposals may be required by condition to prevent unacceptable adverse impacts on the highway network. In some cases, there may be the requirement to address potential issues by way of a planning obligation. Matters to be covered by such planning obligations include monitoring extra ordinary wear and tear or damage to carriageways, footways, verges and street furniture, due to lorry movements generated from the development.

Policy 21: Operational Transport

Proposals for mineral extraction, associated development and reclamation will be permitted where it is clearly demonstrated that the provision for vehicle movements within the site, access to and from the site and the conditions of the local highway network are such that the

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traffic impacts likely to be generated would not have an unacceptable adverse impact on:

- **highway safety;**
- **the effective operation of the highway network;**
- **amenity;**
- **human health; and**
- **the natural, built and historic environment.**

Proposals which generate significant transport movements must be supported by a Transport Assessment. The Transport Assessment must detail all of the following:

- **the potential cumulative impacts arising from transport movements and how the impacts will be mitigated if necessary;**
- **the scale of the proposed development and its potential for additional trip generation;**
- **how access to the strategic highway network is suitable and how impacts on road safety, congestion and any current restrictions have been addressed;**
- **existing intensity of transport use and the availability of public transport;**
- **proximity to nearby environmental designations or sensitive areas;**
- **impact on other priorities/ strategies including the Local Transport Plan for Hertfordshire and local Growth and Transport Plans; and**
- **any specific impacts that the proposal may generate;**

Where needed, proposals must include one or more of the following:

- **highway improvements; or**
- **traffic management; or**
- **other mitigating measures that may be provided in association with the development to minimise the impact of traffic movement.**

Routing agreements and planning obligations will be sought, where appropriate, to mitigate and/or compensate for the effects of minerals development where unacceptable adverse impacts cannot be mitigated by planning conditions.

Monitoring

Related Plan Objectives	Obj4, 5 & 6
Plan Targets	T7
Plan Indicators	IN7

Rights of Way

14.15 The location of mineral extraction sites are usually within the countryside, which means there is the potential for impacts upon existing Rights of Way and general access to open space. The county council does not wish to see the loss of public Rights of Way as a result of mineral extraction.

14.16 If proposals were to impact upon access to existing Rights of Way it is expected that operators would provide alternative routes either on a temporary basis and reinstate them upon completion of extraction or as a permanent diversion. Where possible, the provision of alternative routes should link to Hertfordshire's Rights of Way Improvement Plan which identifies required changes and improvements to the local Rights of Way network.

14.17 It is recognised that there is a need for a well-managed network of Rights of Way which could be improved with enhanced public access creating potential new routes through Green Infrastructure pathways.

14.18 This policy seeks to ensure that mineral operations are carried out sensitively in respect of maintaining and where possible enhancing public Rights of Way, both during extraction and restoration.

Policy 22: Public Rights of Way

Mineral extraction and associated development must, where possible, ensure that public Rights of Way are protected and not adversely affected by the proposal. Where this is not possible, proposals need to ensure that good quality, safe and convenient alternative provision is made or suitable replacement Right(s) of Way is secured.

The use of Rights of Way to obtain vehicular access to a site will not be permitted unless it can be clearly demonstrated that the safety of Rights of Way users can be adequately protected.

Proposals should improve and enhance access into the countryside, through the Rights of Way network and/or open space, creation of new Rights of Way and link where possible to the Rights of Way Improvement Plan and Green Infrastructure Plans.

Monitoring

Related Plan Objectives	Obj5, 7 & 8
Plan Targets	T7
Plan Indicators	IN7

15 Protection of Soils

Soils and Agricultural Land

15.1 Soils must be adequately protected and maintained throughout the life of the development, particularly if a site comprises land that qualifies as best and most versatile agricultural land.

15.2 National Policy is clear that in circumstances where significant development of agricultural land is considered to be necessary, poorer quality land should be used in preference to that classed as best and most versatile, provided this is consistent with other sustainability criteria.

15.3 It is recognised that mineral development will often need to temporarily remove soils in order to access minerals; this policy aims to protect the soils and agricultural land within the county.

15.4 Soils are an important and valuable restoration material and their proper handling and conservation is essential. Mismanagement of the soil resource is likely to seriously prejudice the standard of restoration.

15.5 Proposals will require a comprehensive assessment of existing soils including a detailed soil survey to identify soil types, profiles and depths. A soil management and handling strategy will also be required to demonstrate how a proposal will undertake any soil operations including stripping, movement, storage and replacement.

15.6 Where different soils are recorded, separate stripping, storage and replacement may be required to plan for reinstatement of the original soil profiles or an appropriate alternative soil profile in line with the restoration scheme.

15.7 Any proposals should take into account the economic and other benefits of the best and most versatile agricultural land and demonstrate any improvements that can be made to improve the quality of the soils.

Policy 23: Soils and Agricultural Land

Proposals must be accompanied by an assessment of existing soils (where appropriate through an Agricultural Assessment) together with a Soils Management and Handling Strategy and where possible, demonstrating any improvements that can be made to the soils.

Proposals for mineral extraction, associated development and reclamation must not result in the permanent loss of the best and most versatile agricultural land, unless it can be clearly demonstrated that:

- **there is an overriding need for the development; or**
- **sufficient land is unavailable in a lower grade; or**
- **available lower grade land has an environmental value which outweighs the agricultural considerations.**

Where land is returned to agricultural land, it must be returned to at least the equivalent grade of that prior to mineral extraction.

Monitoring

Related Plan Objectives	Obj5 & 7
Plan Targets	T7
Plan Indicators	IN7

16 Sustainable Reclamation

Restoration, After-use and Aftercare

16.1 National policy is clear that worked land should be reclaimed at the earliest opportunity, and that high quality, well thought-out restoration and aftercare of mineral sites takes place. This includes public engagement and consideration of agriculture (safeguarding the long term potential of best and most versatile agricultural land and conserving soil resources), geodiversity, biodiversity, native woodland, the historic environment, recreation and aviation safety, whereby certain forms of restoration (e.g. lakes) can attract birds.

16.2 A fundamental principle of mineral extraction is that it is a temporary use of the land, although it is recognised that the length of time that sites are operating for can extend over a long period of time. The reclaiming of land to its original or improved condition following mineral working comprises several elements:

- **Restoration** – steps to ensure the land is returned to its original or former condition by using subsoil, topsoil and/or soil making material. It does not necessarily mean infilling to original levels.

- **Aftercare** – steps undertaken to ensure land is brought back into the required standard for after-use. This may include planting, cultivating, fertilising, watering, drainage or otherwise treating the land.

- **After-use** – refers to the ultimate end use after mineral working has occurred and restoration is complete for agriculture, forestry, amenity (including nature conservation), industrial or other development.

16.3 It is common practice to work extraction sites in phases and to restore each phase in turn shortly after extraction has been completed. Progressive working and restoration can lessen the overall impact of mineral working on the environment and minimise the loss of land in agricultural production. The phasing and direction of working can be particularly relevant to minimising the impact on residential and local amenity.

16.4 The county council will encourage a phased restoration approach for timely working and to help reclaim the land at the earliest opportunity minimising disturbance to the local area. Sites should be restored to a high quality incorporating the highest environmental standards. It is expected that following mineral extraction, sites are either returned to meet the original standard, enhance the land where appropriate or provide an alternative use that benefits the community as a whole. In all cases, restoration will involve the removal of temporary buildings, plant and equipment previously associated with the mineral extraction, unless a further extension site obtains planning permission that requires this to remain.

16.5 Encouragement is also given to the consideration of a phased approach to sites where prior extraction is proposed ahead of non-mineral development.

16.6 Proposals should be accompanied by a Restoration Strategy and Aftercare Management Strategy which should be undertaken on a site specific basis. Reference should also be made to other policies within this Plan, including Policy 25: Aftercare and After-use.

16.7 These should explain how the proposed site is to be restored and the type of after-use proposed. It should also set out how a site would be maintained and monitored throughout the restoration and aftercare period.

16.8 As a minimum, a strategy should state whether the site would be returned to former levels or would remain at lower level. The final level of a site will be dependent on a combination of factors, including the initial overburden, any quarry waste, the amount of material imported onto the site in order to fill the void left by extraction and the depth of working.

16.9 After-use should also be considered when determining the appropriate level for restoration. National guidance suggests a range of potential after-uses which include but are not limited to the creation of new habitats and biodiversity; use for agriculture; forestry; recreational activities; waste management, including waste storage; and the built environment, such as residential, industrial and retail where appropriate.

16.10 These after-uses can also provide opportunities to retain geodiversity; reduce flood risk; increase flood alleviation, improve water quality and ensure aerodrome safety

16.11 The beneficial after-use of a mineral site can offer the potential to provide long-term benefits to a community as a whole. Benefits of after-use can balance the short-term adverse effects of mineral development and should be a key consideration of proposals and the required schemes for restoration.

16.12 Restoration to a lower level than the original pre-extraction levels may be appropriate in some circumstances. This should be clearly justified with reference made to other provisions set out within this Plan.

16.13 Fill with inert materials would only be suitable in order to reach an appropriate after-use and reference should be made to the Hertfordshire Waste Local Plan.

16.14 All after-use proposals must be specified and if the after-use proposals involve a change of use from the existing use, further planning permission may be required and should accord with the policies of the Development Plan.

16.15 The county council will make use of planning obligations and conditions, where appropriate, to secure the restoration and aftercare of sites. Planning conditions must be drafted in such a way that, even if the interest of the applicant applying for permission is subsequently disposed of, the requirements for restoration and aftercare can still be fulfilled, whether by a new operator or in the case of default, by the land-owner. The county council

will monitor and, if necessary, use enforcement powers to ensure that restoration and aftercare are implemented in line with approved schemes.

Policy 24: Restoration

Proposals for mineral extraction and associated development should be restoration-led and where possible should improve and enhance the area. Proposals will be required to submit, as a minimum, a suitable outline scheme of restoration at the application stage for the site with reference to the other policies contained in this Plan.

Proposals for mineral extraction will be permitted where it can be demonstrated within the restoration strategy that:

- **the restoration will take place at the earliest opportunity and to a high environmental standard;**
- **a phased approach is taken, where appropriate;**
- **all plant and machinery will be removed in a timely manner; and**
- **where land is returned to agricultural land, it must be returned to at least the equivalent grade of the prior mineral extraction site standard.**

Proposals involving inert material for the restoration of the site will be permitted where it can be demonstrated that it meets all of the criteria below:

- **the use of inert material does not have unacceptable adverse impacts upon the environment, local amenity and transport movements; and**
- **the restoration with inert material is to the highest possible environmental standard;**
- **the use of inert material is necessary as part of the restoration of the site;**
- **the amount of material is appropriate and can be sourced to undertake the restoration in a timely manner.**

Monitoring

Related Plan Objectives	Obj6, 7 & 8
Plan Targets	T7
Plan Indicators	IN7

Policy 25: Aftercare and After-use

All after-use proposals will be permitted where they have demonstrated consideration and inclusion, where appropriate, of measures to:

- **be compatible with the landscape character of the area and will not result in any unacceptable harm to local landscape character, quality and setting of heritage assets;**
- **respect and enhance the local character of the area;**
- **support the local economy;**
- **provide improved and increased public access to the countryside and create public open space for recreation;**
- **support and enhance existing places of nature conservation for habitats and species;**
- **maximise opportunities for sites of geological interest;**
- **integrate sustainable forms of transport such as walking & cycling with public transport.**

Proposals for mineral extraction and associated development shall be required to submit an Aftercare Management Strategy for the site in accordance with the proposed after-use.

Monitoring

Related Plan Objectives	Obj6, 7 & 8
Plan Targets	T7
Plan Indicators	IN7

Appendices

Appendix 1 – Targets and Indicators

Appendix 2 – Policies Map

Appendix 3 – Inset Maps and Site Briefs including Proposed Specific Sites and Preferred Areas

Glossary

Appendix 1 - Targets and Indicators

Minerals Local Plan Target		Minerals Local Plan Indicator		Where Monitored
T1	New sand and gravel extraction sites to be located on the identified allocated Specific Sites/Preferred Area.	IN1	Location of approved extraction sites.	LAA
T2	Maintain a minimum landbank of 7 years.	IN2	Amount of permitted sand and gravel reserves.	LAA
T3	An increase in the quantity of secondary & recycled aggregates processed annually.	IN3	Quantity of processed secondary & recycled aggregates reported from known operators.	LAA
T4	Encouraging the appropriate extraction of mineral resources linked to non-mineral developments.	IN4	Number of planning applications determined using Policies 8, 9, 10 and 11.	AMR
T5	Safeguard known mineral resources from non-minerals development that would prevent viable future mineral extraction.	IN5	Number of planning applications responded to which fall with the identified Minerals Safeguarding Areas.	AMR
T6	Safeguard known bulk transportation, handling and processing facilities from non-minerals development.	IN6	Number of planning applications responded to which fall within the Mineral Infrastructure Consultation Areas.	AMR
T7	The appropriate implementation of MLP policies.	IN7	Used and unused MLP policies against determined planning applications.	AMR

Appendix 2 - Policies Map

HERTFORDSHIRE COUNTY COUNCIL
Minerals Local Plan

Proposed Submission Policies Map

KEY

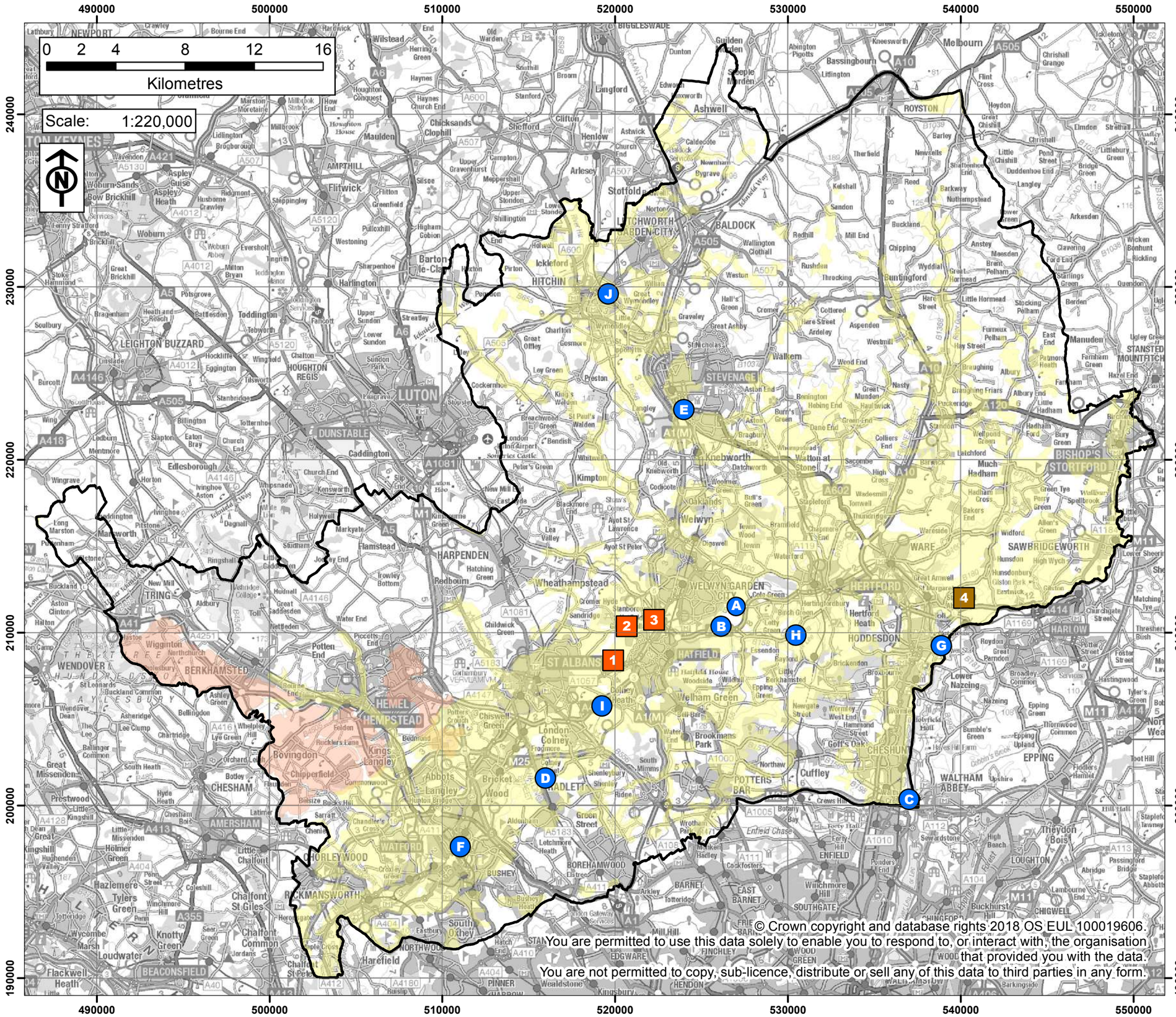
	Sand & Gravel Mineral Safeguarding Area
	Brick Clay Mineral Safeguarding Area

Specific Sites and Preferred Areas	
1	Specific Site 1: Hatfield Aerodrome
2	Specific Site 2: Hatfield Quarry - Furze Field
3	Specific Site 3: Hatfield Quarry - Land adjoining Coopers Green Lane
4	Preferred Area 1: The Briggens Estate (Olives Farm)

Mineral Infrastructure Consultation Areas	
A	Birchall Lane / Cole Green
B	Burnside
C	Eleanor Cross Road
D	Harper Lane Rail and Recycling Depot
E	Langley Sidings Rail Aggregates Depot
F	Orphanage Road Rail Aggregates Depot
G	Rye House Rail Aggregates Depot
H	Skinner's Yard
I	Tyttenhanger
J	Walsworth Road Rail Aggregates Depot

Hertfordshire

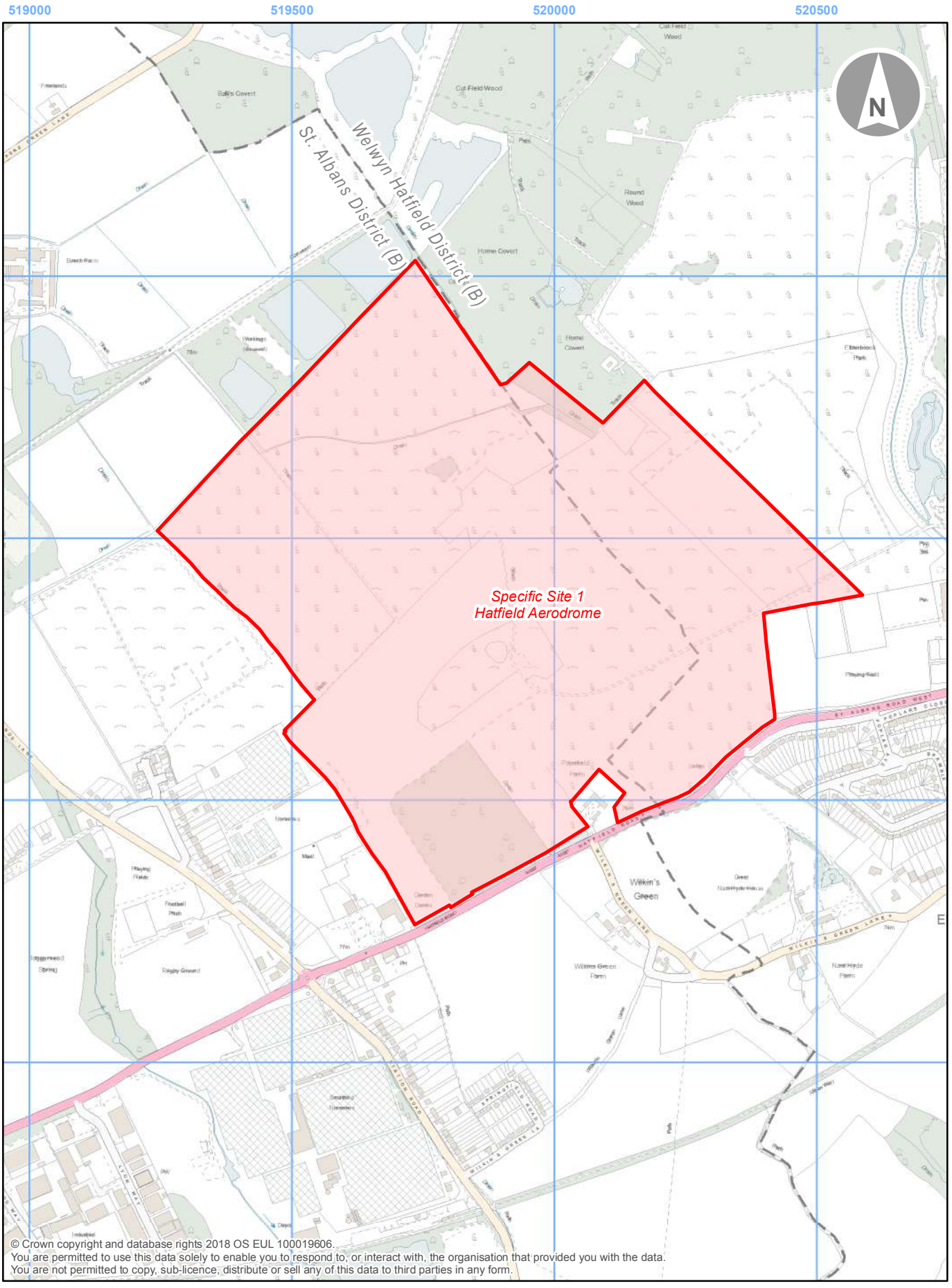
Minerals Local Plan Review
Proposed Submission Policies Map



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Appendix 3 - Inset Maps and Site Briefs including Proposed Specific Sites and Preferred Areas

Inset Map 1	**Specific Site 1 – Hatfield Aerodrome**
Inset Map 2	**Specific Site 2 – Hatfield Quarry – Furze Field**
Inset Map 3	**Specific Site 3 – Hatfield Quarry – Land adjoining Coopers Green Lane**
Inset Map 4	**Preferred Area 1 – The Briggens Estate (Olives Farm)**
Map 5	**Group of Specific Sites**
Inset Map 6	**Birchall Lane/ Cole Green, Welwyn Garden City**
Inset Map 7	**Burnside, Hatfield**
Inset Map 8	**Eleanor Cross Road, Waltham Cross**
Inset Map 9	**Harper Lane, St Albans**
Inset Map 10	**Langley Sidings, Stevenage**
Inset Map 11	**Orphanage Road, Watford**
Inset Map 12	**Rye House, Hoddesdon**
Inset Map 13	**Skinner's Yard, Hertford**
Inset Map 14	**Tyttenhanger, Colney Heath**
Inset Map 15	**Walsworth Road, Hitchin**



Inset Map 1

KEY: Specific Site Preferred Area

Scale 1:10,000

0 100 200 300 400 500 600 700 Metres

Hertfordshire

Minerals Local Plan Proposed Submission January 2019 - Site located in St Albans & Welwyn Hatfield District

Specific Site 1: Hatfield Aerodrome

Site Address:	Land at former Hatfield Aerodrome, Hatfield Road, Hatfield
Location:	Located to the west of Hatfield and to the east of St Albans, adjacent to Ellenbrook and the A1057
	Northing: 208269, Easting: 519951
District:	St Albans City & District and Welwyn Hatfield Borough
Size:	86.6 ha
Planning Status:	The site has a resolution to grant permission for the establishment of a new sand and gravel quarry, aggregate processing plant, concrete processing plant and other ancillary facilities as part of application 5/0394-16, subject to the signing of a legal agreement.
	The site was part of an allocated Preferred Area in the 2007 Minerals Local Plan.
	Planning permission was granted in December 2000 for a mixed use development. The Section 106 agreement forming part of the planning permission provided for the creation of a country park on the land to the west of Ellenbrook. The agreement was guided by the Hatfield Aerodrome Supplementary Planning Guidance document adopted by Welwyn Hatfield Borough Council in November 1999. The establishment of the country park has not been carried out and remains a requirement of the original Section 106 agreement and is still enforceable.
Current use of site:	Former air field returned to green field
Material:	Sand and Gravel
Potential workable reserves:	8 million tonnes
Anticipated annual output:	250,000 tonnes
Timings:	Starting in years 1-5 of the Plan period
	Extraction expected to take 30 years

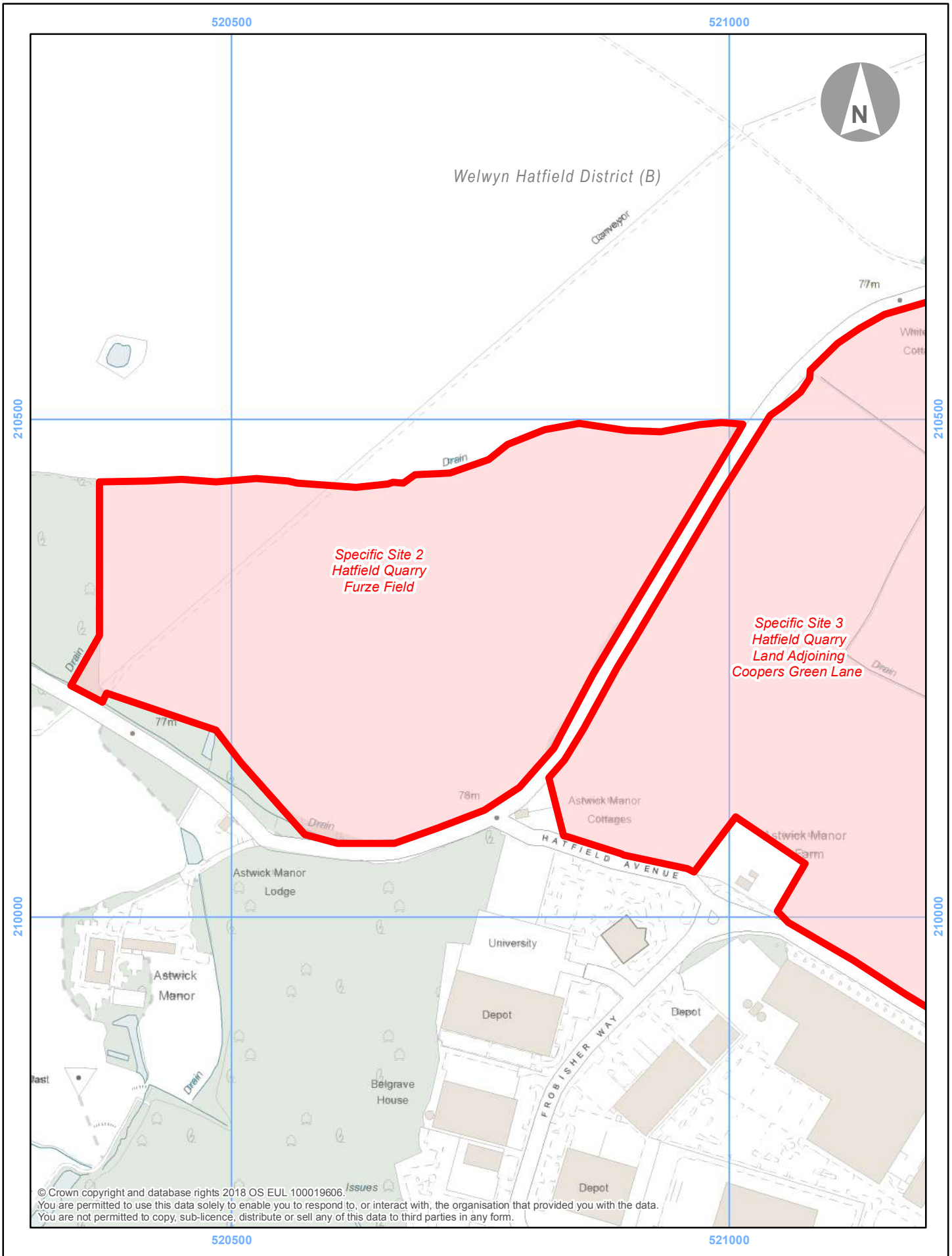
Considerations:

Restoration and aftercare of the site should be consistent with any existing legal agreement and the Hatfield Aerodrome Supplementary Planning Guidance (or subsequent revisions of the Local Plan).

The site lies over an area contaminated with a plume of Bromate which is found in the lower horizon of the sand and gravel resource. Proposals will require an extensive plan of groundwater level and quality monitoring before, during and after the working to protect the water supply. The Bromate plume will need to be assessed and shown that it will not be spread either vertically or laterally as a result of proposed works. This is of particular importance for proposals which extend below the water table or into the lower mineral horizon.

The site sits within the Green Belt. Developments associated with the mineral extraction should be designed and positioned appropriately to prevent conflict with the purposes of the Green Belt.

A small part of the site, at the south east edge, is situated within Flood Risk Zone 2. Due to the potential for extraction in proximity to Flood Risk Zone 2, proposed mineral extraction should seek opportunities to reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage systems. It should be noted that the extraction site in permission 5/0394-16 is located entirely within Flood Zone 1 and is at low risk of flooding.



Inset Map 2

KEY: Specific Site Preferred Area

Scale 1:5,000

0 100 200 300 Metres

Hertfordshire

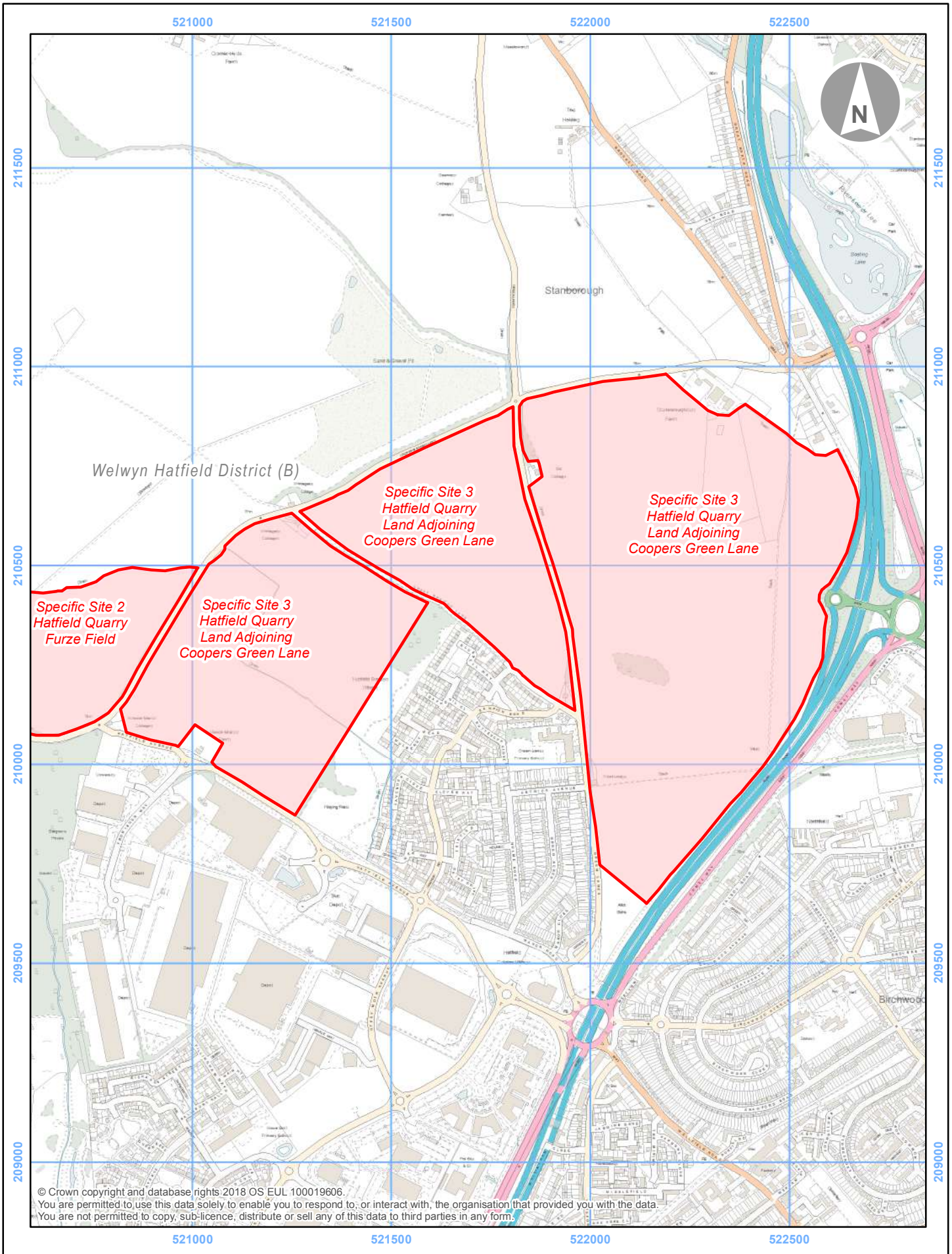
Minerals Local Plan Proposed Submission January 2019 - Site located in Welwyn Hatfield District

Proposed Specific Site 2: Hatfield Quarry – Furze Field

Site Address:	Oaklands Lane, Smallford, St Albans
Location:	Located to the north west of Hatfield, close to the western edge of Hatfield Garden Village and adjacent to Coopers Green Lane Northing: 210408, Easting: 520050
District:	Welwyn Hatfield Borough
Size:	17.7 ha
Planning Status:	The site has permission as an extension to Hatfield Quarry for the extraction of sand and gravel (application 5/3720-16). Hatfield Quarry has been operational since the 1960s with various extensions for sand and gravel extraction. Currently, extraction occurs at the Symondshyde Farm site and material is transported to the existing processing plant at Hatfield Quarry by conveyor belt. Extraction at Hatfield Quarry – Furze Field is intended to succeed extraction at the Symondshyde Farm site (expected to cease in 2020).
Current use of site:	Agricultural
Material:	Sand and Gravel
Potential workable reserves:	450,000 tonnes
Anticipated annual output:	400,000 tonnes
Timings:	Starting in years 1-5 of the Plan period Extraction expected to take 1.5 years
Considerations:	Extraction is expected to succeed extraction at Hatfield Quarry – Symondshyde Farm site. Extraction will occur as an extension to Hatfield Quarry. Material will be transported to the existing processing plant by conveyor belt rather than by vehicular transport. The existing vehicular access to Hatfield Quarry will continue to be used. The site lies over an area contaminated with a plume of Bromate which is found in the lower horizon of the

sand and gravel resource. Proposals will require an extensive plan of groundwater level and quality monitoring before, during and after the working to protect the water supply. The Bromate plume will need to be assessed and shown that it will not be spread either vertically or laterally as a result of proposed works. This is of particular importance for proposals which extend below the water table or into the lower mineral horizon.

The site sits within the Green Belt. Developments associated with the mineral extraction should be designed and positioned appropriately to prevent conflict with the purposes of the Green Belt.



Inset Map 3

KEY: Specific Site Preferred Area

Scale 1:12,500

0 100 200 300 400 500 600 700 800 900 Metres

Hertfordshire

Minerals Local Plan Proposed Submission January 2019 - Site located in Welwyn Hatfield District

Proposed Specific Site 3: Hatfield Quarry – Land adjoining Coopers Green Lane

Site Address:	Oaklands Lane, Smallford, St Albans
Location:	Located to the north of Hatfield, adjacent to the A1(M) and Coopers Green Lane
	Northing: 210574, Easting: 521685
District:	Welwyn Hatfield Borough
Size:	125 ha
Planning Status:	The site has no relevant minerals planning history.
	The site is proposed as an extension to Hatfield Quarry which has been operational since the 1960s with various extensions for sand and gravel extraction. Currently, extraction occurs at the Symondshyde Farm site and material is transported to the existing processing plant at Hatfield Quarry by conveyor belt. This extraction is expected to cease in 2020.
	The site is included in the Proposed Submission Version of the Welwyn Hatfield Local Plan within Policy SP22. The policy aims to supply 1,650 new homes and other associated developments including a neighbourhood centre, education facilities and suitable access arrangements as part of allocation Hat 1: North West of Hatfield.
Current use of site:	Agricultural
Material:	Sand and Gravel
Potential workable reserves:	3.8 - 6.6 million tonnes
Anticipated annual output:	400,000-600,000 tonnes
Timings:	Starting in years 5-10 of the Plan period
	Extraction expected to take 9 - 14 years
Considerations:	Extraction is expected to succeed extraction at Specific Site 2: Hatfield Quarry – Furze Field, which has a resolution to grant permission for mineral

extraction subject to the signing of a Section 106 agreement.

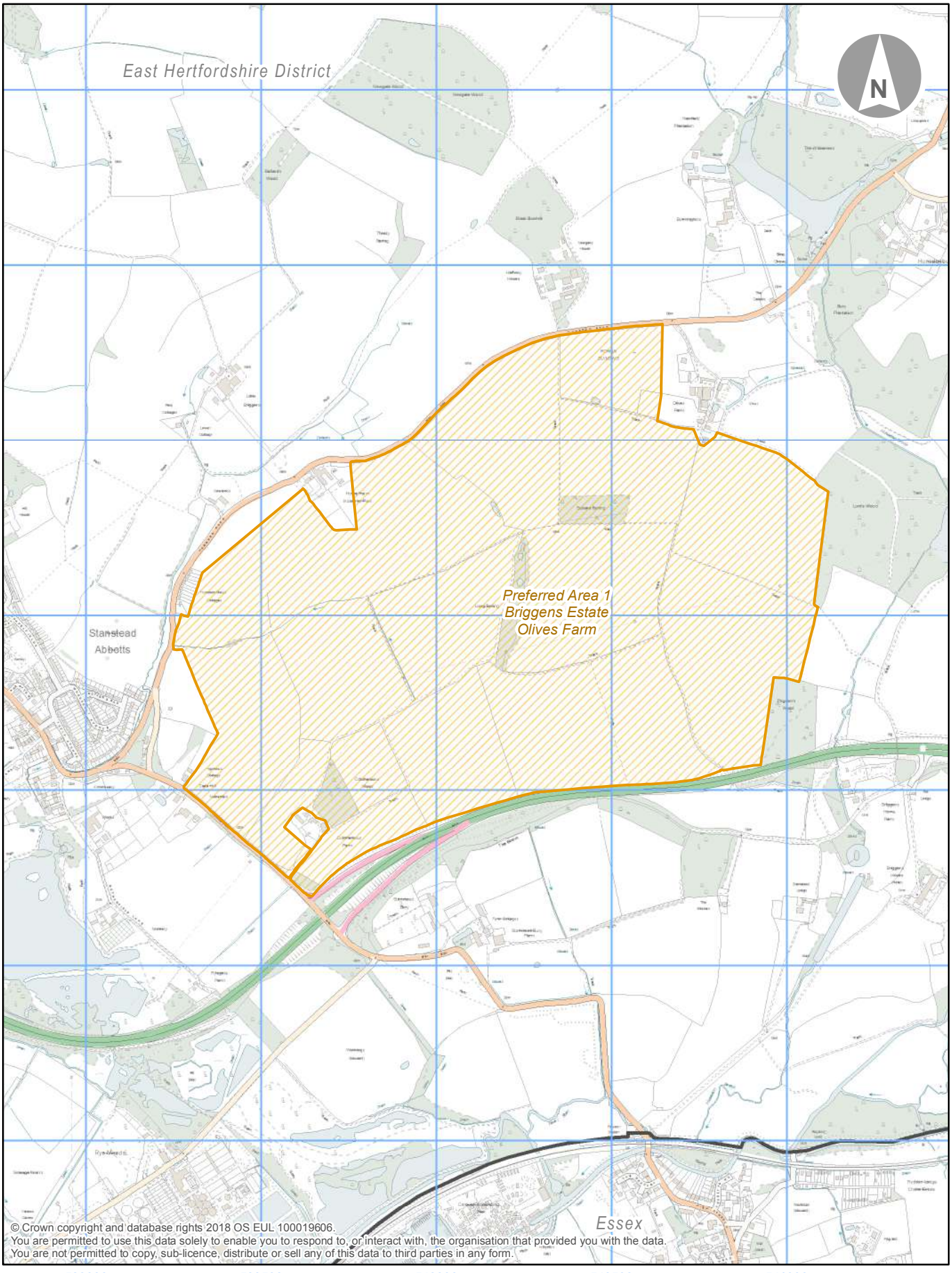
Extraction will occur as an extension to Hatfield Quarry. Material will be transported to the existing processing plant by conveyor belt rather than by vehicular transport. The existing vehicular access to Hatfield Quarry will continue to be used.

Due to the long-term use of the existing access to Hatfield Quarry on Oaklands Lane and the associated use of the A1057, applications should address the potential cumulative impact of HGV movements that may occur as a result of further long-term mineral transportation.

A Masterplan for the site will form the basis of a Supplementary Planning Document to be developed by Welwyn Hatfield Borough Council which will provide further guidance on site-specific matters related to the provision of non-mineral development. The extraction of minerals should be complementary to the residential allocation. Phasing of extraction should not affect the timely provision of housing within the Welwyn Hatfield Local Plan period. A potential workable reserve has been identified as between 3.8 and 6.6 million tonnes which takes into account the provision of open space and Green Infrastructure. There may be opportunities to work a greater amount of mineral dependant on the phasing and overall masterplanning of the area.

The site lies over an area contaminated with a plume of Bromate which is found in the lower horizon of the sand and gravel resource. Proposals will require an extensive plan of groundwater level and quality monitoring before, during and after the working to protect the water supply. The Bromate plume will need to be assessed and shown that it will not be spread either vertically or laterally as a result of proposed works. This is of particular importance for proposals which extend below the water table or into the lower mineral horizon.

The site sits within the Green Belt. Developments associated with the mineral extraction should be designed and positioned appropriately to prevent conflict with the purposes of the Green Belt.



Inset Map 4

KEY: Specific Site Preferred Area

Scale 1:15,000

0 100 200 300 400 500 600 700 800 900 1,000 1,100 Metres

Hertfordshire

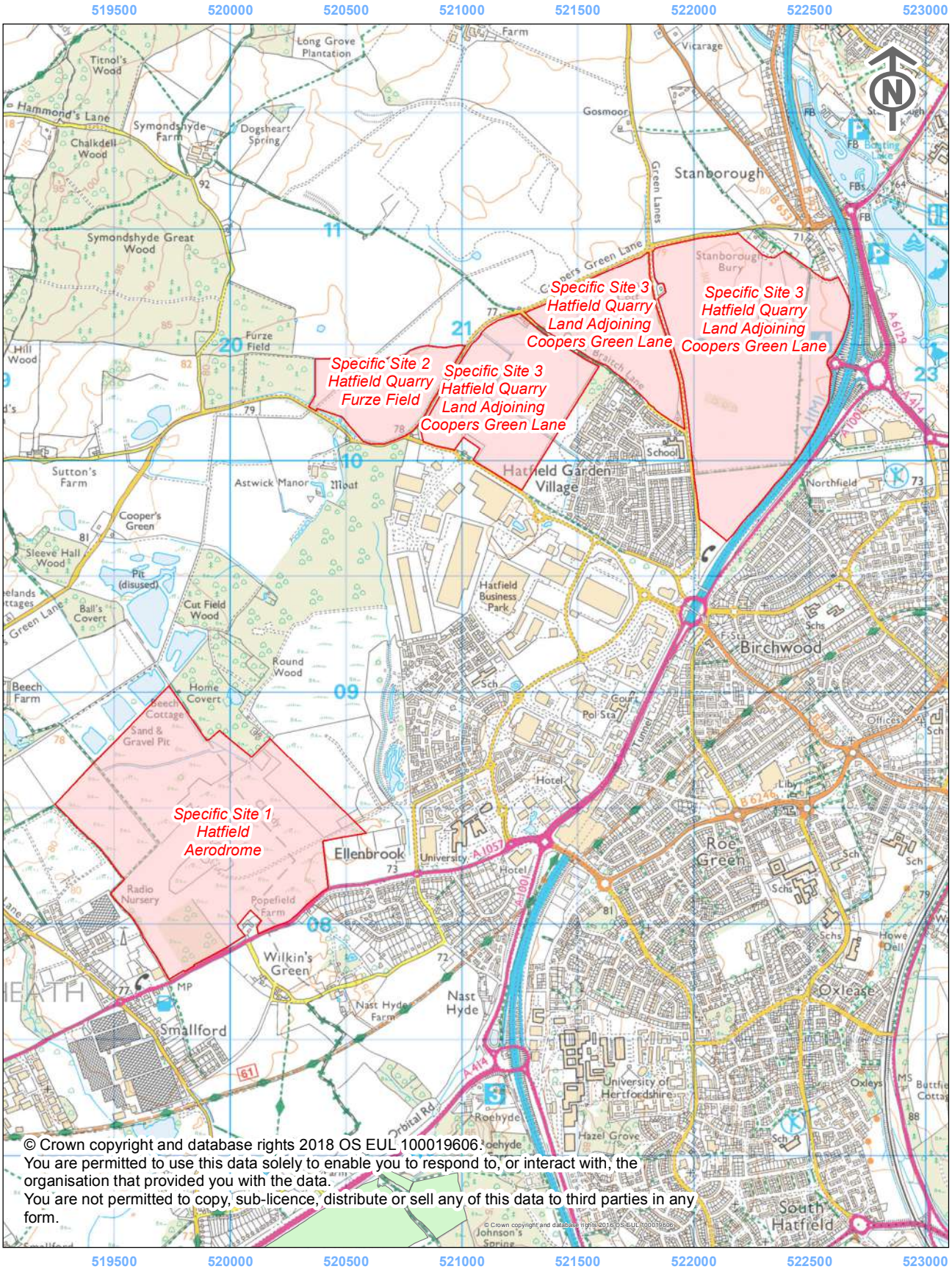
Minerals Local Plan Proposed Submission January 2019 - Site located in East Herts District

Proposed Preferred Area 1 – The Briggens Estate (Olives Farm)

Site Address:	Land to the East of Stanstead Abbotts
Location:	Located to the east of Stanstead Abbotts, between the A414 and B180 Northing: 212096, Easting: 540509
District:	East Herts District
Size:	187.75 ha
Planning Status:	The site has no relevant minerals planning history. The site is located less than 500m to the west of a site included in the East Herts District Plan within Policy GA1. The policy aims to supply 10,000 dwellings as a new garden village. 7,000 of the homes are to be developed after the end of the Plan periods of the East Herts District Plan and this Minerals Local Plan.
Current use of site:	Agricultural
Material:	Sand and Gravel
Potential workable reserves:	10.2 million tonnes
Anticipated annual output:	500,000 tonnes
Timings:	Due to the identification of three Specific Sites and the inclusion of the Briggens Estate (Olives Farm) as a Preferred Area, this site would ideally be worked later in the Plan period (the latter 10 years). Extraction expected to take 22 years.
Considerations:	Access is anticipated to be taken via the B181. Proposals will need to provide detailed analysis and suggested mitigation measures which take into account the HGV route and weight restrictions on the highways network. The site sits in the Impact Risk Zones for the Lea Valley Special Protection Area, Rye Meads SSSI, Hunsdon Mead SSSI and Amwell Quarry. Proposals would need to address the potential impacts on these sites and the potential use of the site and its surroundings by SPA birds.

Information from the Hertfordshire Historic Environment Record shows that there may be significant archaeological interest in the northern section of the preferred area. The area is also surrounded by a significant quantity of heritage assets whose setting will need to be taken into account as part of an application for extraction.

The site sits within the Green Belt. Developments associated with the mineral extraction should be designed and positioned appropriately to prevent conflict with the purposes of the Green Belt.



Map 5 - Group of Specific Sites

KEY:

Specific Site

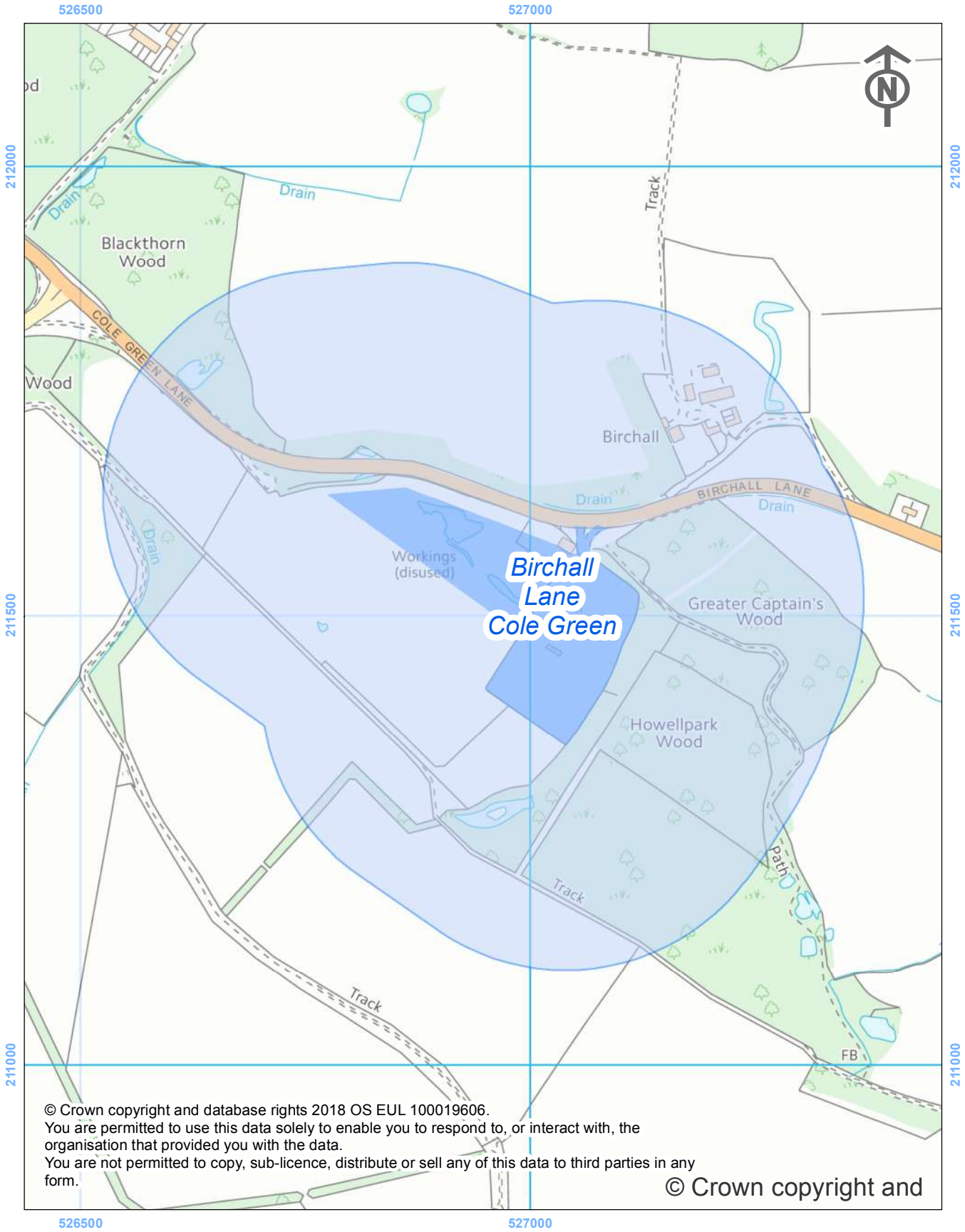
Preferred Area

Hertfordshire

Scale: 1:24,000

0 0.25 0.5 1 1.5 Kilometres

Minerals Local Plan Proposed Submission January 2019 - Sites located in St Albans & Welwyn Hatfield



Inset Map 6

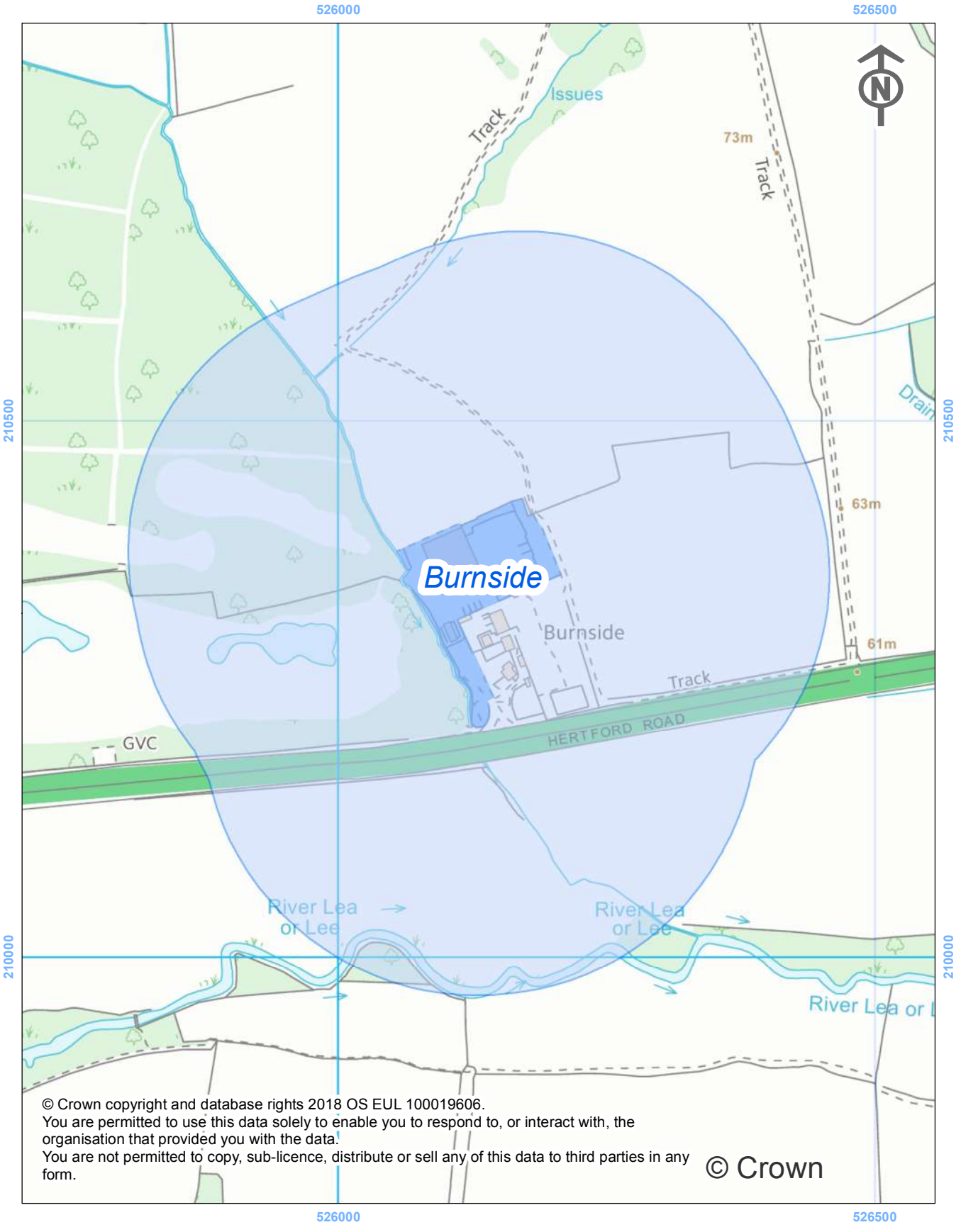
KEY: Birchall Lane / Cole Green

Mineral Infrastructure Consultation Area

Scale: 1:6,000

0 40 80 160 240 320 Metres

Hertfordshire



Inset Map 7

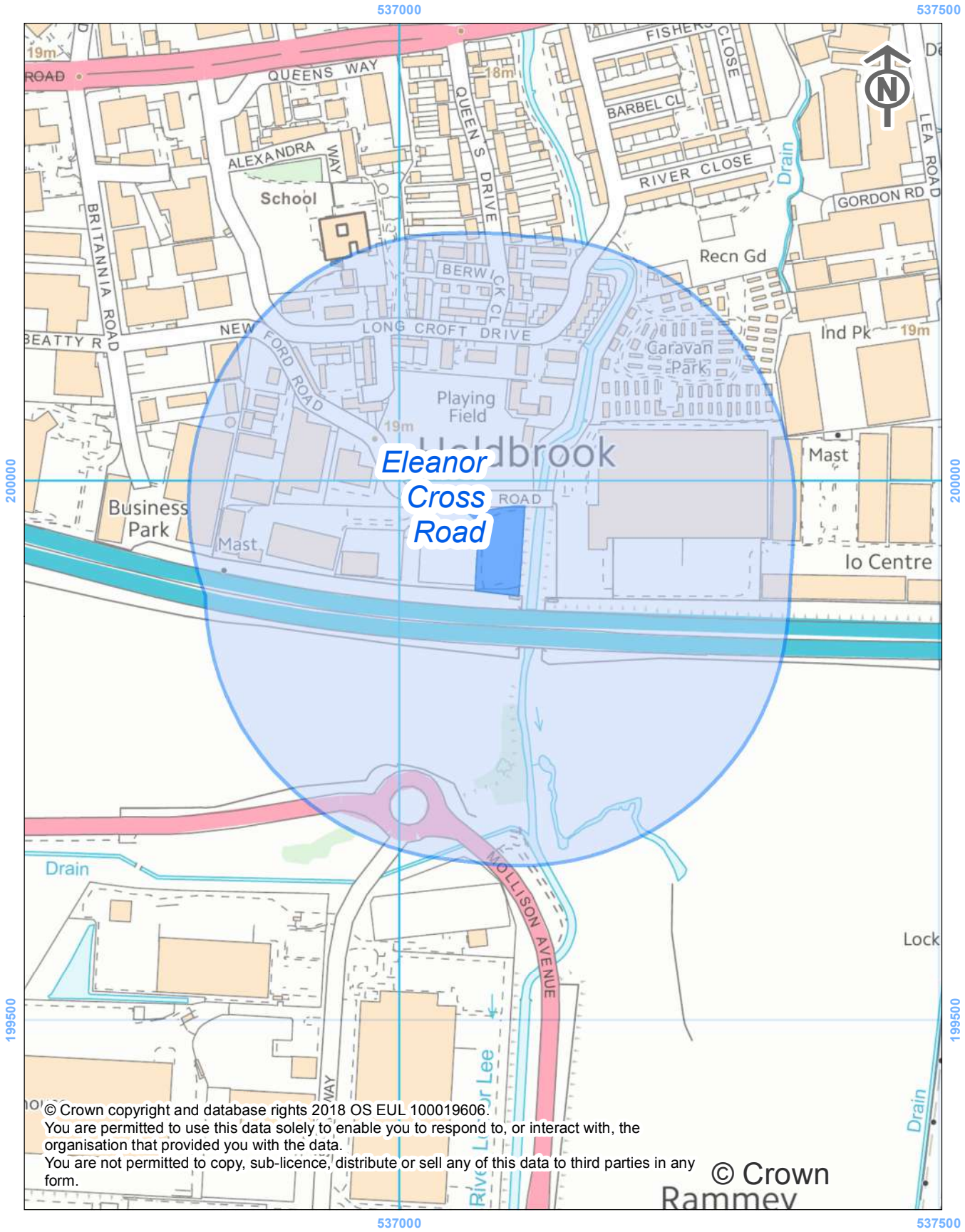
KEY: Burnside

Mineral Infrastructure Consultation Area

Scale: 1:5,000

0 35 70 140 210 280 Metres

Hertfordshire



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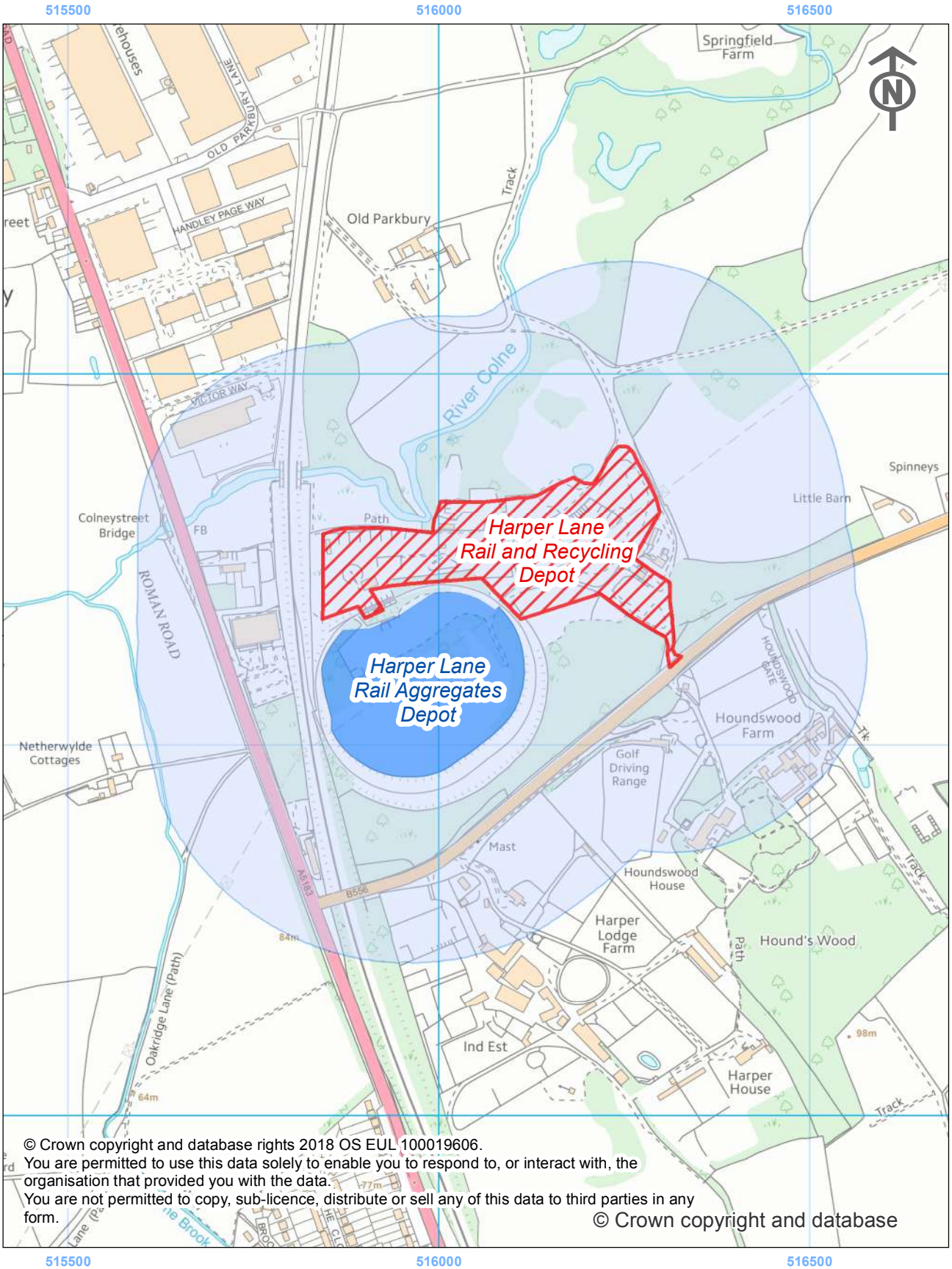
KEY: Eleanor Cross Road

Mineral Infrastructure Consultation Area

Scale: 1:5,000

0 35 70 140 210 280 Metres

Hertfordshire



Inset Map 9

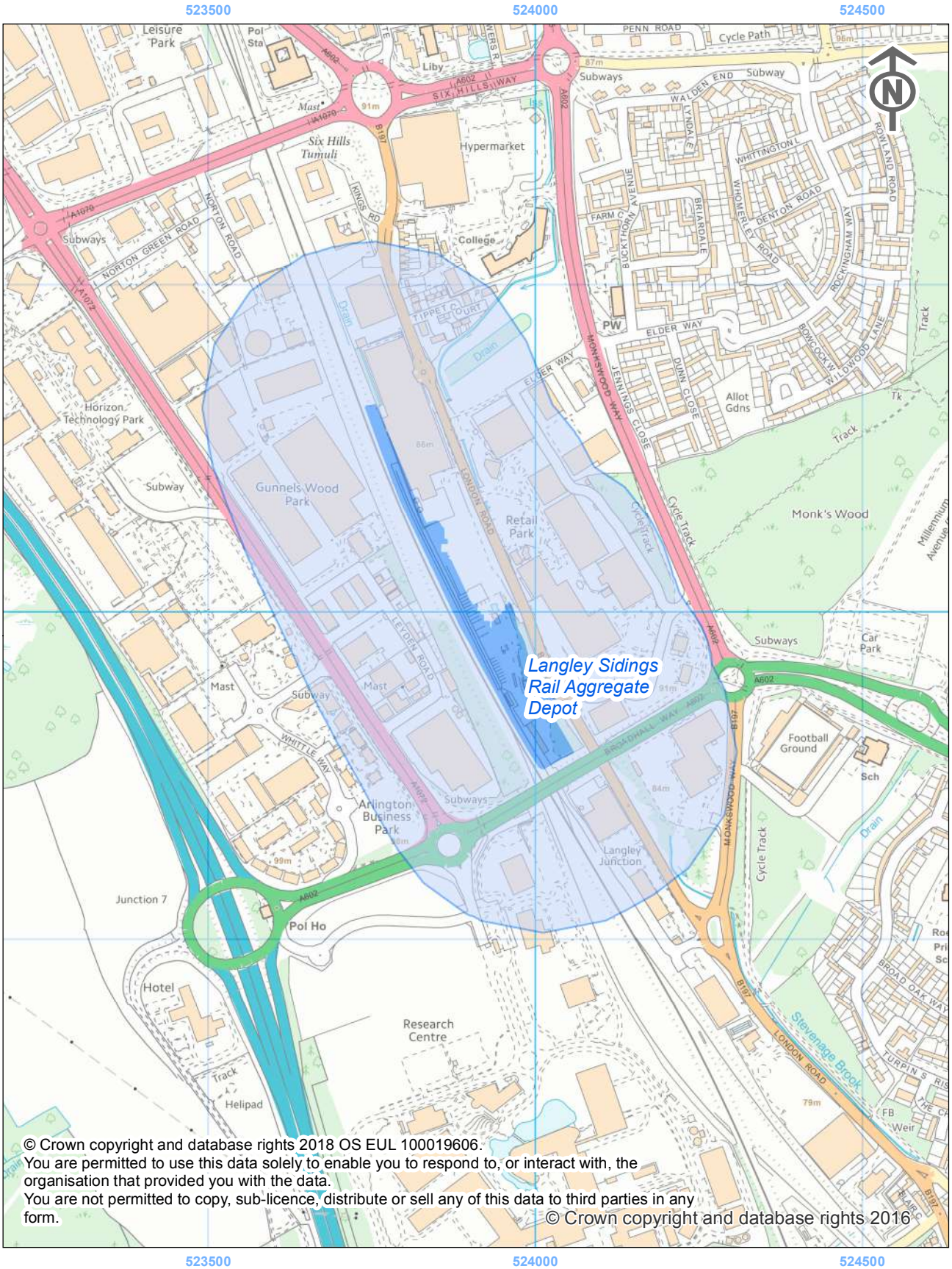
KEY:

- Harper Lane Rail and Recycling Depot
- Harper Lane Rail Aggregates Depot
- Mineral Infrastructure Consultation Area

Scale: 1:7,500

0 50 100 200 300 400 500 600 Metres

Hertfordshire



Inset Map 10

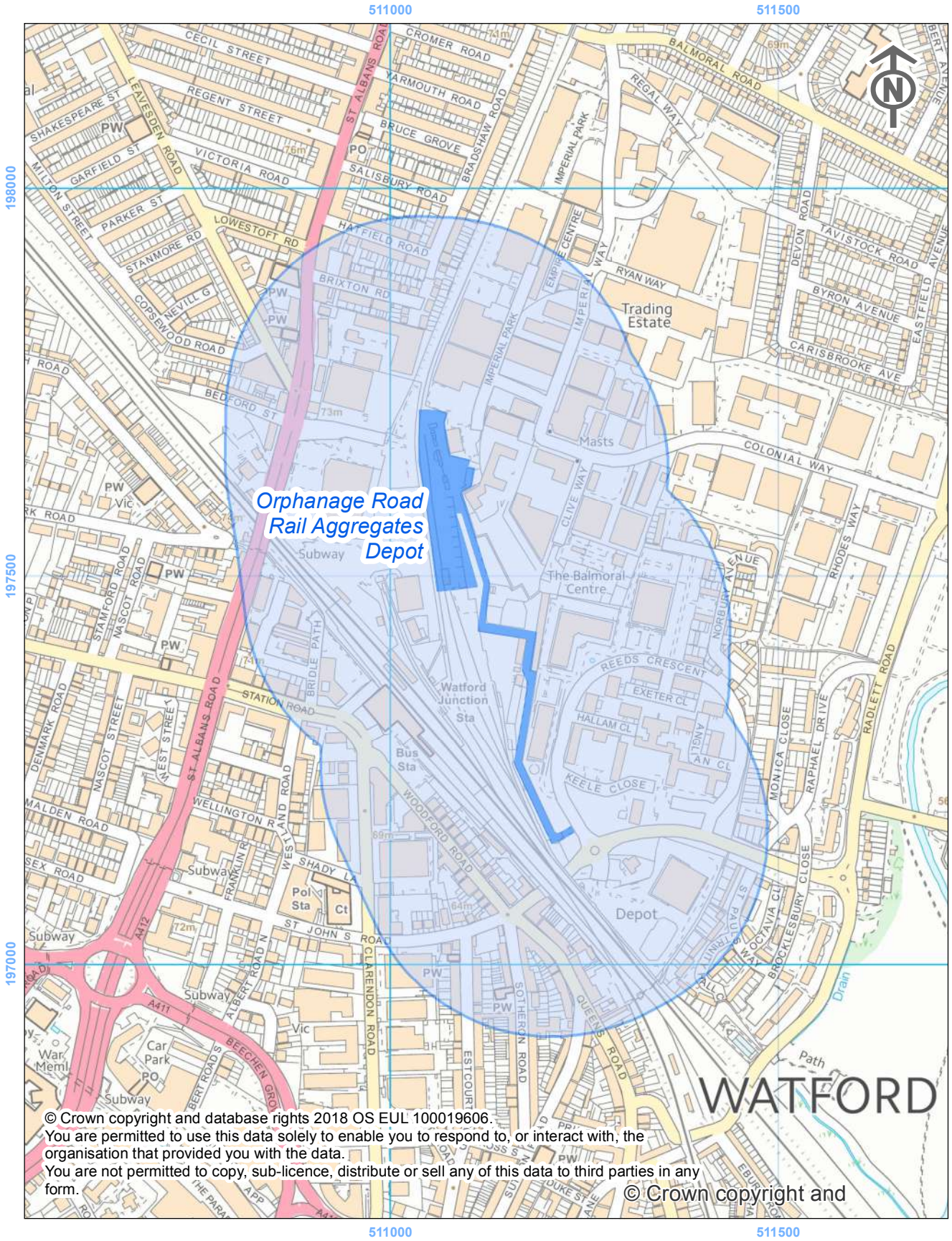
KEY: Langley Sidings Rail Aggregates Depot

Mineral Infrastructure Consultation Area

Hertfordshire

Scale: 1:8,500

0 50100 200 300 400 500 600 Metres



Inset Map 11

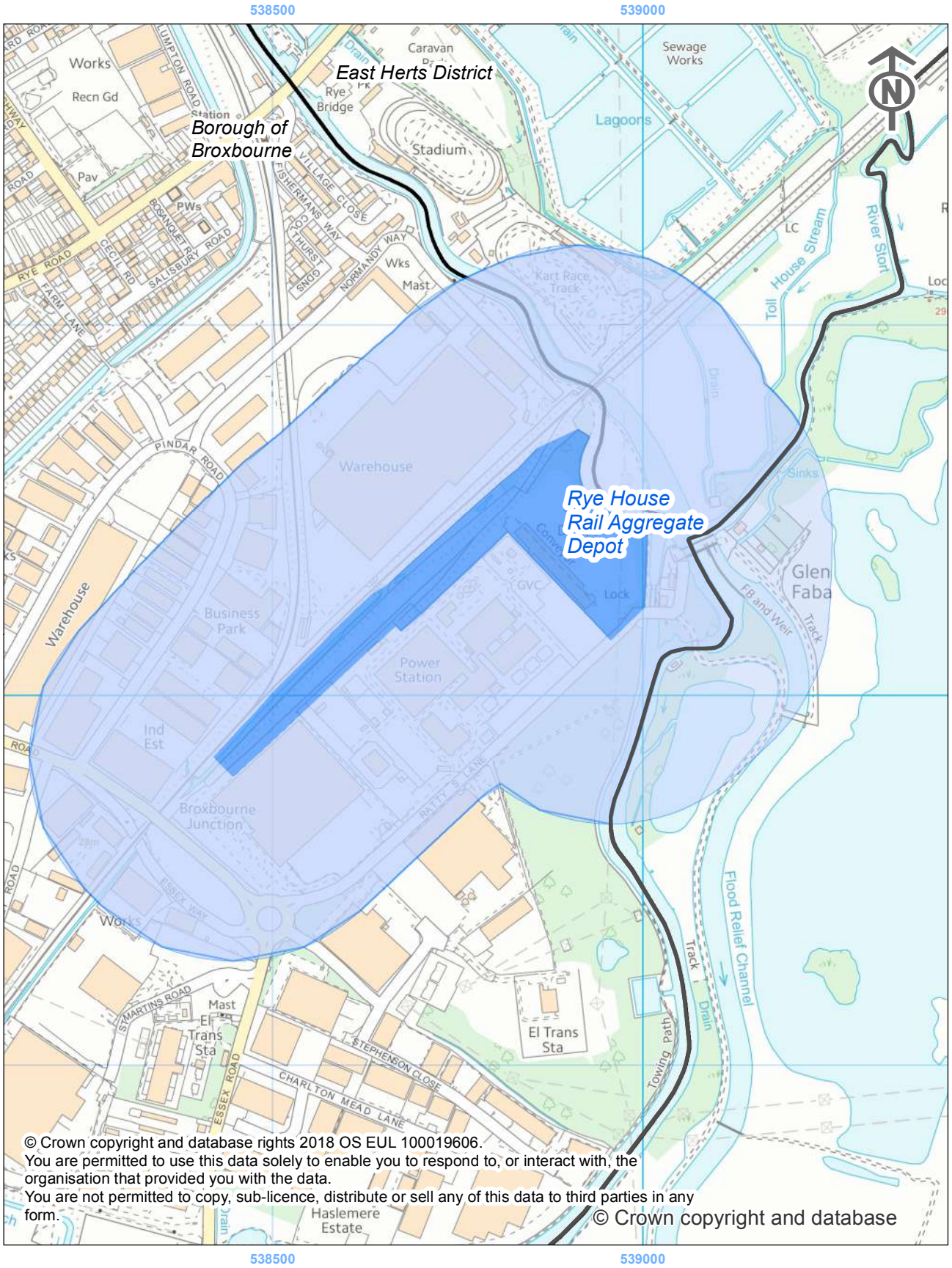
KEY: Orphanage Road Rail Aggregates Depot

Mineral Infrastructure Consultation Area

Scale: 1:7,000

0 50 100 200 300 400 Metres

Hertfordshire



Inset Map 12

KEY: Rye House Rail Aggregates Depot

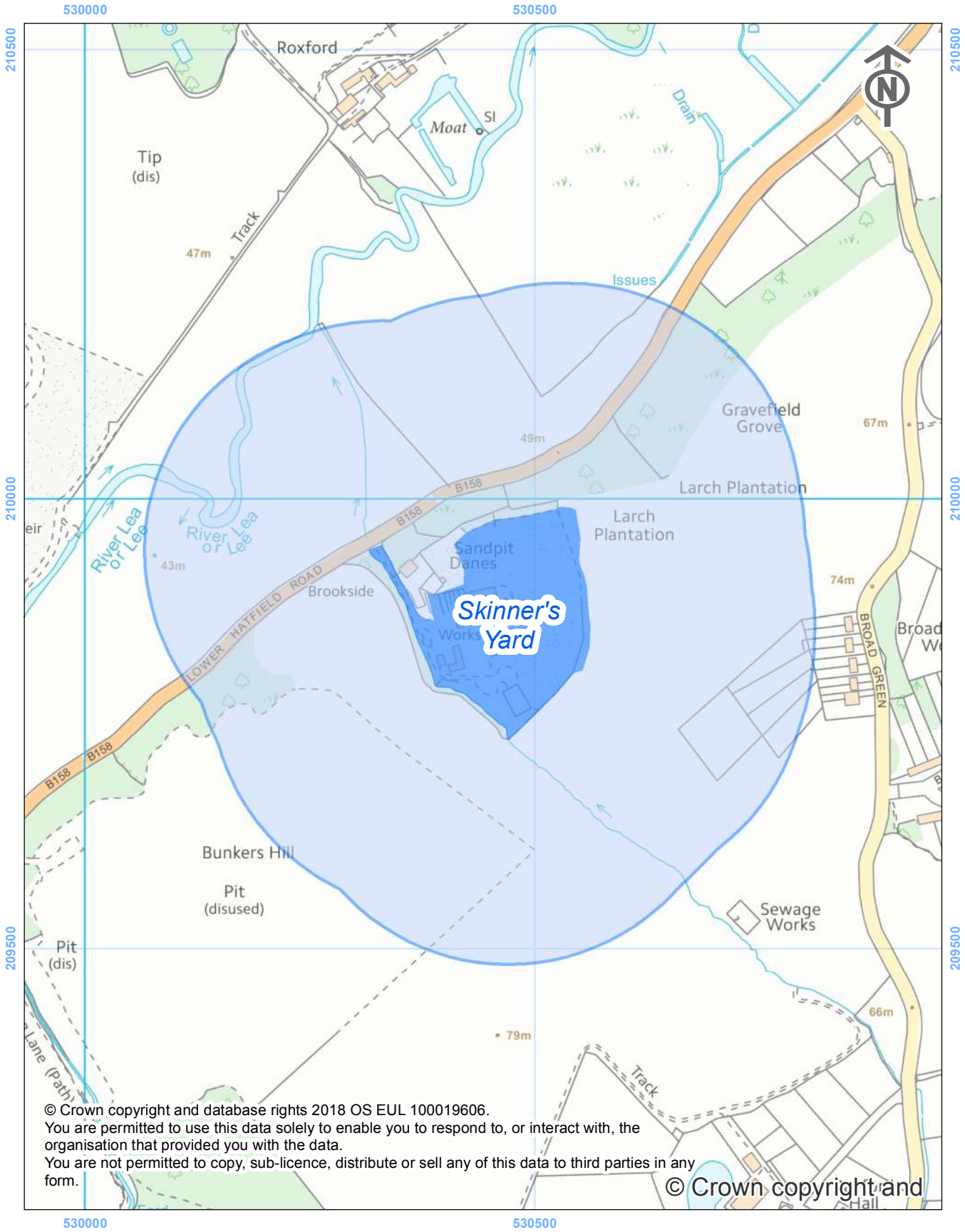
Mineral Infrastructure Consultation Area

County Boundary

Hertfordshire

Scale: 1:7,500

0 50 100 200 300 400 500 600 Metres



Inset Map 13

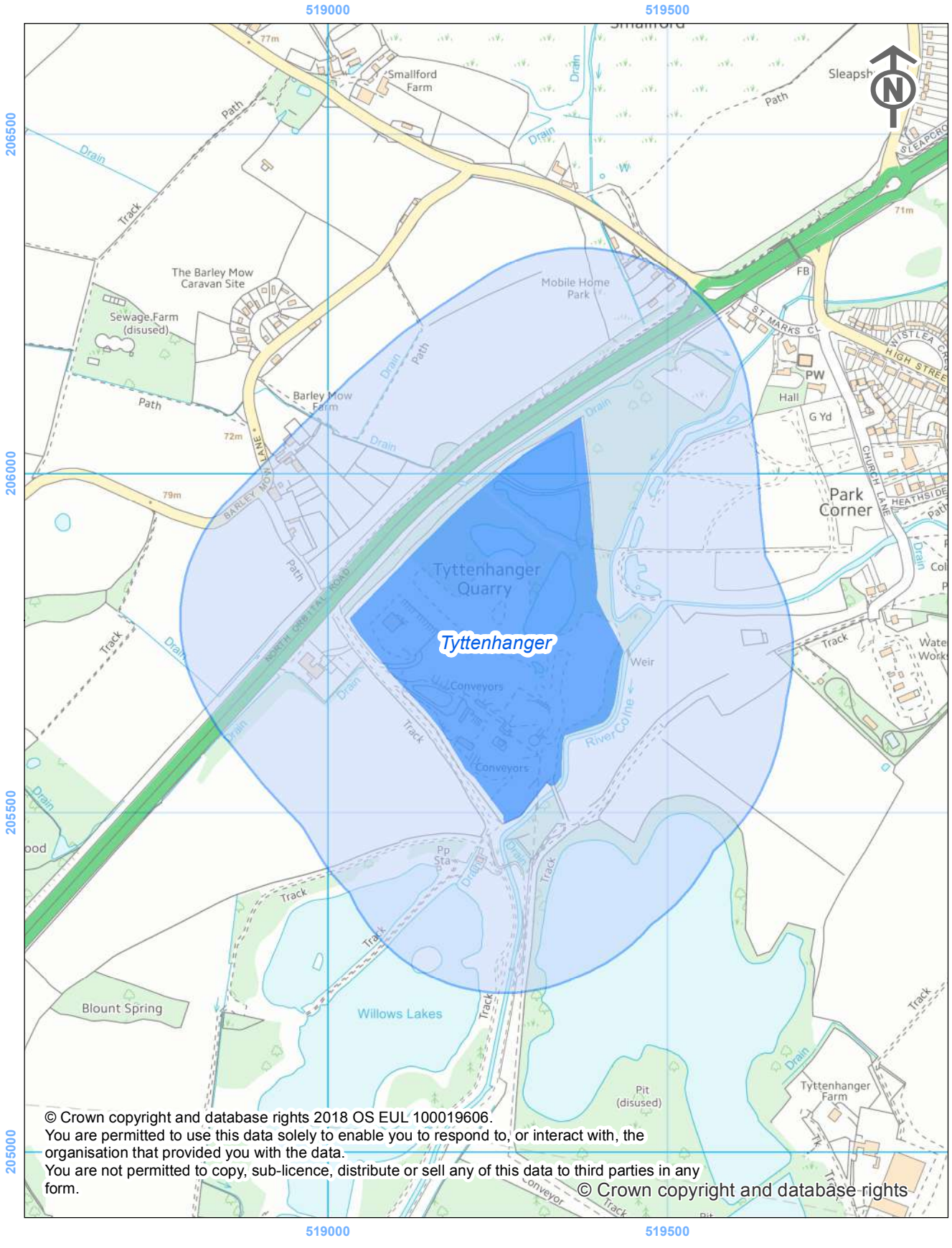
KEY: Skinner's Yard

Mineral Infrastructure Consultation Area

Scale: 1:6,000

0 50 100 200 300 400 Metres

Hertfordshire



Inset Map 14

KEY: Tyttenhanger

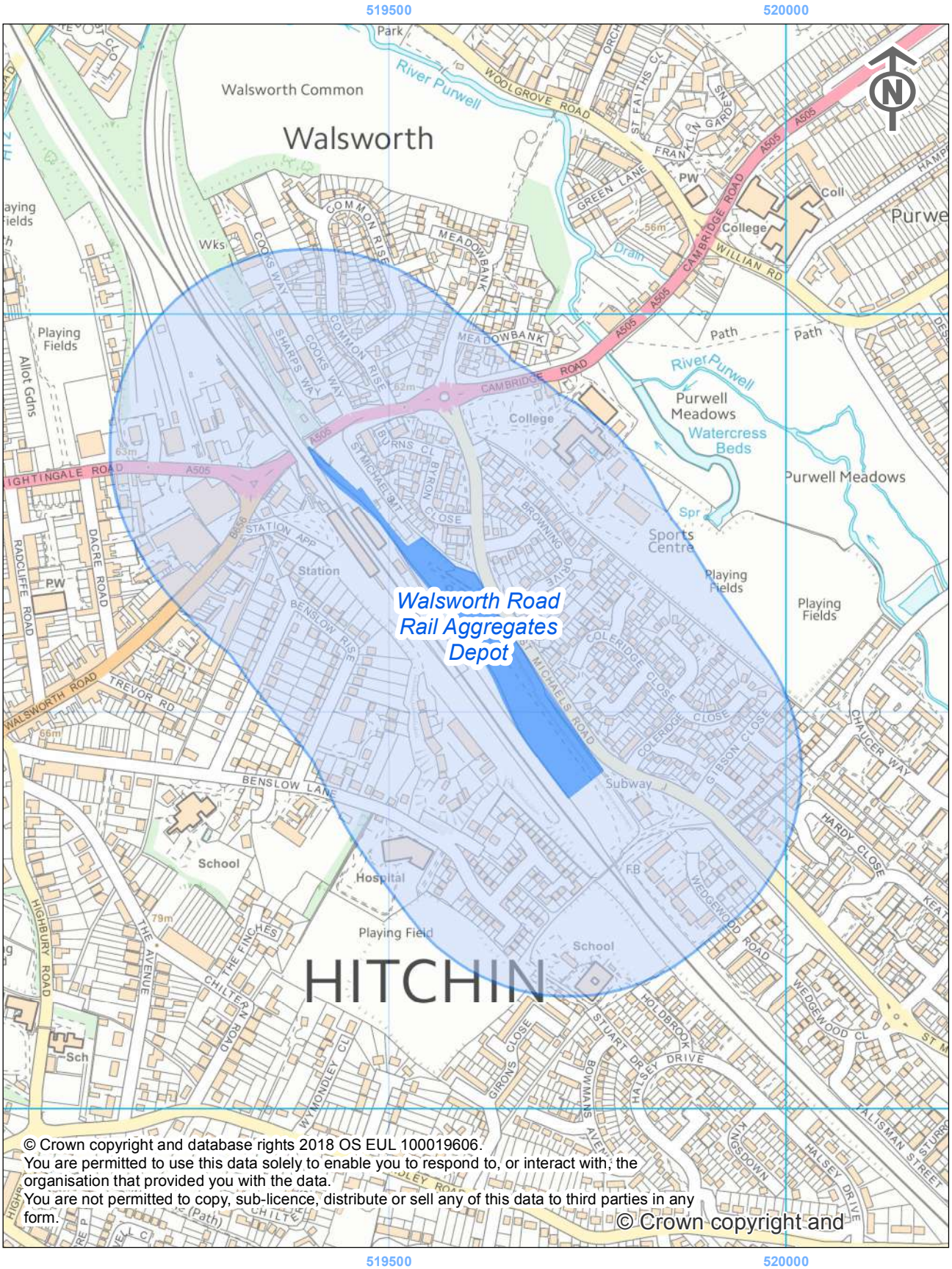
Mineral Infrastructure Consultation Area

Scale: 1:8,000

0 65 130 260 390 520 Metres

Hertfordshire

Minerals Local Plan Proposed Submission January 2019 - Site located in East Herts



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Inset Map 15

KEY:

- Walsworth Road, Hitchin Rail Aggregates Depot
- Mineral Infrastructure Consultation Area

Scale: 1:7,000

0 50 100 200 300 400 Metres

Hertfordshire

Glossary

After-use	(see Reclamation)
Aftercare	(see Reclamation)
Aggregates	Sand and gravel, crushed rock and other bulk materials used in the construction industry for purposes such as the making of concrete, mortar, asphalt or for roadstone, drainage or bulk filling.
Agricultural Land Classification (ALC)	A method for assessing the quality of farmland to enable informed choices to be made about its future use within the planning system. The ALC system classifies land into five grades, with Grade 3 subdivided into Sub-grades 3a and 3b. The best and most versatile land is defined as Grades 1, 2 and 3a and is the land which is most flexible, productive and efficient in response to inputs and which can best deliver food and non- food crops for future generations. Grades 4 and 5 are described as poor quality agricultural land and very poor quality agricultural land. Natural England has a statutory role in advising local planning authorities about land quality issues and provides further information on ALC.
Amenity	A positive element or elements that contribute to the overall character or enjoyment of an area. For example, open land, trees, historic buildings and the inter-relationship between them, or less tangible factors such as tranquillity.

Ancient Woodland	Areas that have had a continuous woodland cover since at least 1600 and have only been felled for underwood or timber production.
Apportionment	The division of the future estimated need for minerals from national and sub-national guidance to a local Minerals Planning Authority level.
Aquifer	A permeable water-bearing stratum which is capable of storing and yielding water when tapped by a well.
Area of Outstanding Natural Beauty (AONB)	Area with statutory national landscape designation, the primary purpose of which is to conserve and enhance natural beauty. Hertfordshire contains part of the Chilterns AONB which was designated in 1965.
Asphalt	A natural or artificial mixture in which bitumen is combined with a substantial proportion of mineral matter.
Associated Mineral Development	Mineral extraction often requires development of infrastructure specifically associated with its working. This could include plant, machinery, conveyors, haul roads etc (some of which may be covered by Permitted Development Rights.
Best and Most versatile Agricultural Land	Land in grades 1, 2 and 3a of the Agricultural Land Classification.
Borrow Pits	A pit in close proximity to and worked solely in conjunction with a large scale construction project. The working provides the development with bulk filling minerals and is restored with any surplus soils that may arise.

Buffer Zones	A set distance around a mineral resource where the Minerals Planning Authority will consult with the Local Planning Authority to ensure that development does not progress that will sterilise the mineral resource.
Bunding	An embankment formed from natural material, used either to screen a site from view or reduce noise emission from a site.
Conservation Areas	An area, as defined in the Planning (Listed Building and Conservation Areas) Act 1990, designated as being of special architectural or historical interest and therefore protected from any alterations which would destroy its character.
Crushed Rock	Hard rock (usually limestone and granite) which has been quarried, fragmented and graded for use as aggregate.
Cumulative Impact	Cumulative impact is the in combination effects of simultaneous and/or successive extraction and associated development.
East of England Regional Aggregates Working Party (EoERAWP)	A joint working group consisting of local authority officers, representatives of the aggregates industry, central government bodies and the Environment Agency, established to consider the demand and supply of aggregates in the East of England. EoERAWP advises the Office of the Deputy Prime Minister.

Environmental Impact Assessment (EIA)	A process by which information about the environmental effects of a project is collected, both by the developer and from other sources, and taken into account by the planning authority in determining planning applications. Project types are contained in the Town and Country Planning (Assessment of Environmental Effects) Regulations 1999.
Green Infrastructure	The network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect villages, towns and cities.
Greenfield Sites	Areas of land, usually agricultural or amenity land.
Groundwater	Water present in underground strata which fills pores and fissures up to the water-table.
Health Impact Assessment	A combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.
Hoggin	Aggregate with too much clay to be worked for other than common fill material.
Incidental Extraction	Minerals extracted as a secondary activity to other development outside of Specific Sites and Preferred Areas, such as the construction of agricultural or potable water reservoirs.

Industrial Minerals	Minerals which are necessary to support industrial and manufacturing processes and other non-aggregate uses, which are not fuel (fuel minerals or mineral fuels) and are not sources of metals (metallic minerals). Industrial minerals are used principally for industrial purposes, such as granite, marble, limestone, brickclay, slate and silica.
Landbank	A stock of planning permissions for the winning and working of minerals.
Land-won aggregate	Aggregates produced from naturally occurring mineral deposits.
Listed Building	A building officially listed as being of special architectural or historic interest as defined in the Planning (Listed Building and Conservation Areas) Act 1990.
Local Nature Reserve (LNR)	A statutory designation of a site of at least local nature conservation significance, declared by local planning authorities under the National Parks and Access to the Countryside Act 1949.
Local Plan	A detailed land use plan prepared and adopted by a local planning authority in accordance with national policy.
Main river	A water course which is shown by a distinctive colour on the main river map of the Environment Agency areas and includes a structure or appliance for controlling or regulating the flow of water into, or out of the channel.

Marine-dredged aggregates	Sand and gravel dredged from deposits on the seabed and landed at wharves for use as aggregates.
Mineral Infrastructure	Mineral infrastructure is the infrastructure for the storage, processing and transportation of minerals.
Mineral Infrastructure Consultation Area (MICA)	A geographical area, including and surrounding existing infrastructure for the transportation or processing of mineral, where the district or borough council should consult the Minerals Planning Authority for any proposals for non-minerals development.
Minerals Planning Authority (MPA)	The local planning authority (the County Council) responsible for planning control over mineral working and other minerals related development.
Mineral Safeguarding Area (MSA)	An area designated by a Minerals Planning Authority which covers known deposits of minerals which are desired to be kept safeguarded from unnecessary sterilisation by non-mineral development.
Mitigation Hierarchy	An approach designed to limit, as far as possible, the negative impacts of development projects on biodiversity and ecosystem services (BES). It involves a sequence of three key actions—‘avoid’, ‘mitigate’, and ‘compensate ’— and provides a means of securing biodiversity conservation needs with development priorities.
National Nature Reserves (NNR)	Site of national conservation importance, managed by Natural England or other approved bodies in an exemplary manner and established under the National Parks and Access to the Countryside Act 1949.

National Planning Policy Framework (NPPF)	Document published on 24th July 2018 and sets out the Government's planning policies for England and how these are expected to be applied.
National Planning Practice Guidance (NPPG)	Government guidance that supports the implementation of the NPPF. The guidance is updated on a regular basis.
Permitted reserves	Mineral deposits with the benefit of planning permission for extraction.
Preferred Areas	Areas of known resources allocated in the Minerals Local Plan where planning permission might reasonably be anticipated. Such areas may also include essential operations associated with mineral extraction.
Primary aggregates	Aggregates produced from naturally occurring mineral deposits, extracted specifically for use as aggregate and used for the first time. Primary aggregates fall within the European definition of natural aggregate.
Ramsar	A statutory designation adopted following an international conference, held in 1971 in Ramsar, Iran, which identifies Wetlands of International Importance. The Ramsar Convention produced its 4th Strategic Plan 2016 – 2024 in June 2015.

Reclamation	Has a special meaning in minerals planning. It comprises operations which are designed to return the area to an acceptable environmental condition, whether for the resumption of the former land use or for a new use. However, it includes events which take place before and during extraction (e.g. correct stripping and protection of soils); and also operations after extraction which may include filling and contouring, the creation of planned water areas, landscaping and tree planting. Reclamation includes 'restoration', 'aftercare' and 'after-use' which are described below. 'Restoration' comprises steps to return land following mineral extraction to an acceptable condition, whether for resumption of the former land use or for a new use, by using subsoil, topsoil and/or soil-making material. 'Aftercare' provides for steps to be taken to bring land to the required standard for use for agriculture, forestry or amenity. These may include planting, cultivating, fertilising, watering, drainage or otherwise treating the land. 'After-use' is used to mean the ultimate use after mineral working for agriculture, forestry, amenity (including nature conservation), industrial or other development.

Recycled Aggregates	Aggregates produced from reprocessed construction, demolition and excavation (CD&E) waste. This includes crushed concrete stone and brick, asphalt road planings and railway ballast. The processing of aggregate occurs both on construction sites for reuse on the same site or off site for use in other construction works. <u>Construction and demolition wastes:</u> The demolition of buildings and other manmade structures results in a range of waste materials, including concrete, brick, masonry, metal and timber. Construction arisings include waste generated from roadworks and building projects, such as crushed or damaged bricks, blocks, cement and concrete. The excavating of trenches by utility companies is also currently providing a significant source of material. <u>Asphalt road planings</u>: Asphalt road planings are removed from the surface of roads prior to maintenance work or full resurfacing, by machinery designed specifically for the purpose. Around 80% of road planings have a secondary use. <u>Railway Ballast:</u> Foundations for the railway tracks upon which sleepers are laid, helping with drainage and stability. The recycling and re-use of railway ballast has risen since privatisation of the track maintenance companies, and the introduction of the landfill tax.
Regionally Important Geological/ Geomorphological Sites (RIGS)	A national scheme promoted by English Nature and organised on a County basis. A non-statutory designation to promote the protection of sites for research, science, education, leisure and amenity.
Reserve	Mineral resources known to be economically feasible for extraction.

Resource	A potential mineral deposit with geological evidence and knowledge where the quality and quantity of material has not been tested, with reasonable prospects for economic extraction.
Restoration	(see Reclamation).
Safeguarding	Protection of mineral reserves from sterilisation by non-minerals development, and the protection of bulk transport and bulk handling and processing facilities from development that may prejudice their continuing operation.
Scheduled Monument	A nationally important archaeological site included in the Schedule of Monuments maintained by the Secretary of State for the Environment under the Ancient Monuments and Archaeological Areas Act 1979.
Secondary Aggregates	Aggregates other than sand, gravel and crushed rock (primary aggregates) produced as by-product wastes of construction, industrial or mineral extraction processes and used instead of primary aggregates. Secondary aggregates include both natural and manufactured materials such as glass, incinerator bottom ash, fine ceramic waste, scrap tyres, flue ash, slag, china clay, coal and slate extraction and spent foundry sand.
Sharp sand/Concreting sand	A large grained and angular sand, usually found in association with gravel deposits and predominantly used in the manufacture of concrete.

Silt	A fine-grained sediment having a particle size intermediate between that of fine sand and clay.
Site of Special Scientific Interest (SSSI)	An area of national significance designated under the Wildlife and Countryside Act 1981 as being of special importance by reason of its flora or fauna, or its geological or physiographical features.
Soft sand/Building sand	A fine rounded sand, derived largely from solid sand deposits. Used for a variety of building operations such as the manufacture of mortar and the production of asphalt for road construction purposes.
Special Area of Conservation (SAC)	A designation under the EC Habitats Directive (92/43/EEC) as being of European importance as a particular defined natural habitat or as a habitat for particular defined animal or plant species.
Special Protection Area (SPA)	Identified as being of European importance as a habitat for rare and vulnerable birds under the European Community Directive on the Conservation of Wild Birds (Directive 79/409/EEC).
Specific Sites	Sites allocated in the Minerals Local Plan where viable resources are known to exist, land owners are supportive of minerals development and the proposal is likely to be acceptable in planning terms. Such sites may also include essential operations associated with mineral extraction.
Sterilisation	The act of making minerals unable to ever be extracted from the land, by building on top of or in close proximity to a mineral resource.

Sustainable development	Development that meets the needs of the present without comprising the ability of future generations to meet their own needs. There are three dimensions to sustainable development: economic, social and environmental.
Water Table	The top surface of the saturated zone within the aquifer.
Wharf	A structure on the shore of a harbour or the bank of a river or canal where boats may dock to load and unload cargo or passengers.

ENGLISH
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