Eastleigh Strategic Development

Minerals Safeguarding Appraisal

Prepared on behalf of Highwood Land LLP and Drew Smith Group

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The Pavilion, Botley Grange Office Campus, Hedge End, Southampton, Hampshire, SO30 2AF
Tel: +44 (0)2382 022800 Website: www.**wyg**.com

WYG Management Services Limited. Registered in England & Wales Number: 3050297
Registered Office: Arndale Court, Headingley, Leeds, LS6 2UJ

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1.0 Introduction

1.0.1 WYG has been instructed by Highwood Land LLP and Drew Smith Group to prepare a Minerals Safeguarding Appraisal in respect of land being promoted for strategic housing development in Eastleigh. The promoted site is located with the Borough of Eastleigh and is referred to in the Council's Strategic Growth Options as 'Allbrook – North Bishopstoke – Fair Oak'.

1.0.2 The promoted development encompasses strategic development options B) and C) for 'new homes, three primary schools, one secondary school, local centres, community facilities, open space, Suitable Alternative Natural Green spaces, a strategic road and employment floor space.'

1.0.3 The area of land being promoted by Highwood Land and Drew Smith for strategic development is identified on Drawings contained in Appendix A.

1.0.4 The requirement for a Minerals Safeguarding Appraisal arises because a significant proportion of the land being promoted coincides with the Mineral Consultation Area (MCA) as identified by Hampshire County Council (HCC) in their Online Policies Map. The extent of this overlap is highlighted on the 'Geological Plan' presented in Appendix A.

1.0.5 The purpose of this Minerals Safeguarding Appraisal is to complete a desk based review of relevant geological information in respect of the promoted site, identify any potential constraints to future mineral working, set out the relevant policy framework for considering minerals safeguarding, and set out a range of potential options in respect of delivering any future strategic development taking account of the all the above. This would then inform discussions with HCC, as the minerals planning authority, on developing an agreed strategy to assessing minerals safeguarding through any future formal planning application stage.

2.0 Geological Site Setting

2.0.1 As stated in paragraph 1.0.4 the promoted site is coincident with the Minerals Consultation Area (MCA) identified by HCC in their Online Policies Map. This is shown on the Geological Plan in Appendix A.

2.0.2 The Policies Map shows that the mineral subject to the MCA in relation to the promoted site comprises Soft Sand and Superficial Soft Sand and Gravel.

2.0.3 The British Geological Survey's (BGS) Geology of Britain website identifies that the only recorded superficial deposit underlying the area encompassed by the promoted site is Alluvium, which comprises clay, silt, sand and gravel. These sedimentary deposits are fluvial in origin and are located towards the west and north of the site alongside the River Itchen (which flows from north to south along the western edge of the promoted site) and Bow Lake (a tributary of the River Itchen) which flows from east to west within the northern part of the promoted site.

2.0.4 There are four different classifications of bedrock geology that underlie the promoted site. Most of the site is underlain by the London Clay formation, which comprises clay, silt and sand. The Whitecliffe Sand Member underlies a smaller area of the site, and just comprises sand. The Wittering Formation, which comprises sand, silt and clay underlies part of the south west of the site. A small parcel of land in the east of the site, immediately north of Fair Oak, is underlain by the Durley Sand Member, which comprises sand. All these deposits are shallow-marine in origin.

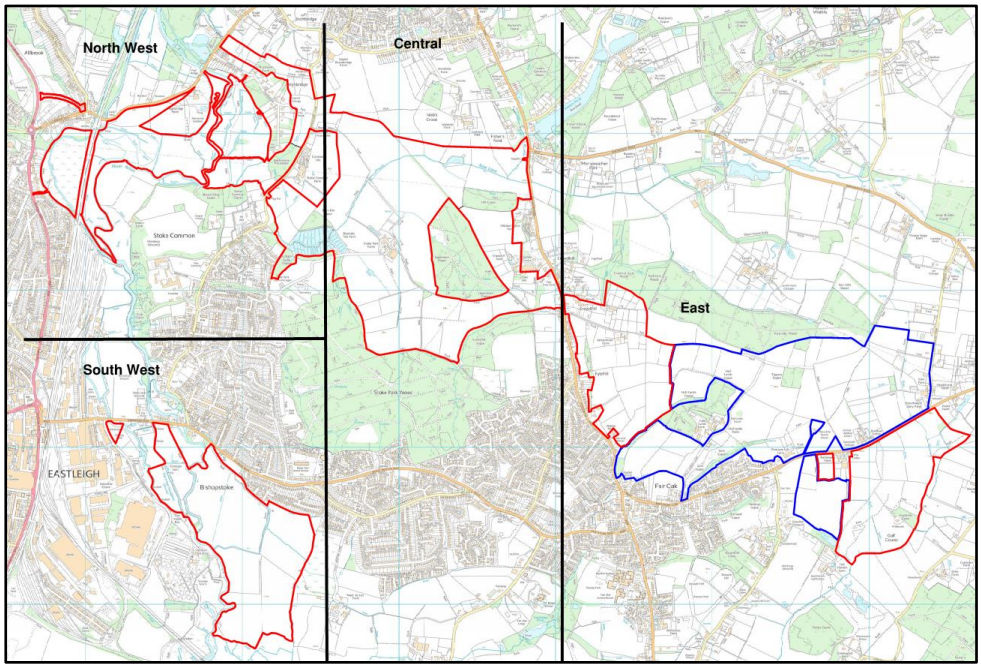
2.1 Historical Borehole Records

2.1.1 The BGS Geology of Britain Viewer provides historical records of drilled boreholes, which show the composition of the recovered strata. The Geological Plan (in Appendix A) shows the borehole records available within and near the promoted site.

2.1.2 The borehole records that fall within or are close to the site boundary have been analysed and are detailed in the Tables 1 to 4 below. For the borehole analysis the promoted site has been sub-divided into four broad areas (as shown in Figure 1): North West; Central; East; and South West. With reference to the masterplan for the promoted site the North West and South West areas correspond with land identified as being 'suitable for public open space uses' and the

Central and East areas correspond with land identified as being 'suitable for development related uses'.

Figure 2 – Subdivided areas of the Promoted Site for purposes of Historical Borehole Analysis



North West Area

2.1.3 Analysis of nine historical boreholes within or adjacent to the North West area of the promoted site has been undertaken.

Table 1 – Historical Borehole Records (North West)

Borehole Record	Depth (m)	Topsoil (m)	Sand/ gravel (m)	Clay (m)	Comments	Water level
SU42SE39	15.05	0.4	1.6	13.05	Sand and gravel is described as silty and clayey. Clay contains lenses of sand and gravel fragments	1.5
SU42SE38	10	0.3	1.2	8.5	Clay contains lenses of sand and fragments of fine gravel	1.3
SU42SE37	10	0.3	0	9.7	First 1.8m of sand and gravel within clay. Clay contains lenses of sand and fragments of gravel	NR

SU42SE36	10	0.25	2.45	7.3	Sand & gravel not described as silty/ clayey. Bottom 1.55m of borehole contained clayey sandy silt	NR
SU42SE33	15	0	15	-	Described as gravel with sand, trace of clay at 10.5m	NR
SU42SE33/A	25	0	24	1	Described as light brown sandy gravel	NR
SU42SE34	10	0.14	0	9.86	Described as silty clay. Some gravel recorded between 2.05 and 3.35 m	NR
SU42SE35	10	0.1	0	9.9	Described as silty clay. 2.95m of strata described as sandy silt and sandy silty clay	NR
SU42SE58	83.4	NR	0	55.2	Chalk with flints between 55.2m and 83.4m	NR

2.1.4 In the North West of the promoted site, borehole records 'SU42SE33' and 'SU42SE33/A' contained 15m and 24m of sand and gravel respectfully. The other seven borehole records in this part of the site show there was between 0 and 2.45m of sand and gravel deposits, although sand and/or gravel fragments were recorded in the clay and vice versa.

Central Area

2.1.5 Analysis of one historical borehole within the Central area of the promoted site has been undertaken.

Table 2 – Historical Borehole Records (Central)

Borehole Record	Depth (m)	Topsoil (m)	Sand/ gravel (m)	Clay (m)	Comments	Water level
SU42SE59	92.35	NR	0	77.7	Clay with flints between 77.7m and 92.35m	NR

2.1.6 The borehole record in the Central area was drilled to 92.35m and did not record any sand or gravel deposits.

Eastern Area

2.1.7 Analysis of six historical borehole records within or adjacent to the Eastern area of the promoted site has been undertaken.

Table 3 – Historical Borehole Records (Eastern)

Borehole Record	Depth (m)	Topsoil (m)	Sand/ gravel (m)	Clay (m)	Comments	Water level
SU51NW6	7.38	NR	0	7.38	Some grey / brown sandy and silty clay in upper section	NR
SU51NW4	151.79	NR	See comment		99.5m of combinations of sand and clay before 48.5m of chalk	NR
SU51NW29	105	1.5	0	33.5	70m of chalk below clay	NR
SU51NW7	11	NR	0	11.38	Combinations of sand and clay	NR
SU51NW9	4.4	NR	4.4	-	Clayey sand with flint for 1.7m, clean sand with thin seams of clay for 2.7m	NR
SU51NW10	4.7	NR	4.7	-	Clayey sand with flint for 0.5m, clean sand with thin seams of clay for 4.2m	NR

2.1.8 The only borehole located within the Eastern area of the promoted site is SU51NW6. All other boreholes are in proximity of the site boundary. Different combinations of sand and clay are shown in the borehole records in the Eastern area, with the exception of borehole SU51NW29, which did not record any sand or gravel.

South West Area

2.1.9 Analysis of twelve historical borehole records within the South West area of the promoted site has been undertaken.

Table 4 – Historical Borehole Records (South West)

Borehole Record	Depth (m)	Topsoil (m)	Peat/ clay/ calcareous material (m)	Sand/ gravel (m)	Clay (m)	Comments	Water level (m)
SU41NE127	10	0.3	2.45	1.35	2.4	3.5m of grey sand below 2.4m silty sandy clay	1
SU41NE126	20	0.3	2.5	2.6	3.1	11.5m of grey sand below clay	NR

SU41NE334/ SU41NE103 (same record, website error)	16.8	0.35	1.95	9.1	5.4	2.4m of 'dirty gravel' before 6.7m of sand. Clay is silty with sand deposits	Water met at 2.3
SU41NE129	20	0.3	1.7	16	2	Traces of clay in sand and gravel	NR
SU41NE128	11	0.8	1.7	8.5	-	Traces of clay in sand and gravel	NR
SU41NE131	10	0.75	1.85	7.4	-	Some clay/ silt	NR
SU41NE130	20	0.6	0.6	18.8	-	Traces of clay in sand	NR
SU41NE326	10	0.4	2.1	7.5	-	3.2m of gravel before 4.3m of sand	seepage at 0.5
SU41NE327	10	0.5	2.4	7.1	-	1.9m of gravel before 5.2m of sand	seepage at 0.5
SU41NE328	10	0.5	2.5	7	-	5.5m of gravel before 1.5m of sand	NR
SU41NE132	10	0.3	3.2	6.5	-	1.8m of gravel before 4.7m of sand	NR
SU41NE329	10	0.3	0	9.7	-	4.5m of gravel before 5.2m of sand	NR

2.1.10 As shown in Table 4, strata described as peat, clay or calcareous like material was recorded immediately below the topsoil in the borehole records from the South West area of the promoted site, with the exception of borehole SU41NE329, which is the most north easterly of these boreholes.

2.1.11 A number of borehole records from the South West area contain comments identifying the presence of a fill material. This could be as a result of previous sand and gravel working in this area which was subsequently infilled.

2.1.12 The borehole records show that there was between 4.85m and 18.8m of sand and gravel deposits. Sand and gravel was the deepest strata recorded in most of the boreholes, which indicates the resource would continue past the depths displayed in the table. Clay deposits were

recorded within the sand and gravel in the three 20m boreholes (SU41NE126 / SU41NE129 / SU41NE130).

2.2 Limitations

2.2.1 The borehole records are historical and most records date from the mid 1970's. The composition of the strata is such that it would not always be distinguishable between sand and gravel and clay, i.e. sand and gravel deposits were often recorded within the clay and vice versa. The boreholes were drilled by different companies who may also have had different interpretations of the strata classifications.

2.2.2 There is only one available borehole record in both the central and eastern parts of the promoted site.

2.2.3 The groundwater level was only recorded in six of the borehole logs, and due to the age of the records, this data may not be reliable.

2.2.4 There is no data on the quality of the mineral recorded by way of particle size density testing. The logs in tables 1 – 4 make reference to silts and it may be that the percentage of silts and clays within any sand and gravel deposits would impact upon the quality.

3.0 Environmental Site Setting

3.0.1 The environmental setting of the promoted site in respect of ecological and other environmental designations, as well as the presence of existing built development and other land uses all have the potential to constrain the physical extraction of mineral.

3.0.2 The extraction of surface mineral deposits, such as sand and gravel, requires the removal of overlying surface soils and vegetation and the winning of mineral deposits can impact on hydrogeological and hydrological water flows.

3.0.3 In addition, although quarrying operations are subject to stringent controls in respect of issues such as noise generation and dust management it would be expected that appropriate stand-offs and buffers would be maintained between mineral working and existing built development and ecologically sensitive areas.

3.0.4 This section of the report identifies environmental designations and existing land uses that might impact upon the ability to extract mineral from within the footprint of the promoted site.

3.1 Ecological Designations

3.1.1 Ecological designations in proximity of the promoted site are shown on the 'Environmental Constraints Plan' (provided in Appendix A). Standoffs have not been applied to the ecological designations at this stage, as further investigation would be required to establish the extent of any future extraction and how it could be managed in respect of the particular reasons for each designation.

3.1.2 The protection of the following ecological designations would be need to be considered prior to establishing a definitive workable area that would be potentially suitable for sand and gravel extraction (should viable deposits be identified).

River Itchen Site of Special Scientific Interest and Special Area of Conservation

3.1.3 The River Itchen, a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC), extends immediately along, and within parts, of the west of the promoted site. The north

west and south west parts of the promoted site are both identified within the masterplan as being 'suitable for public open space uses'.

Sites of Important Nature Conservation

3.1.4 There are 23 designated Sites of Important Nature Conservation (SINC) that abut and/or coincide with the boundary of the promoted site. These are listed below along with the broad area of the promoted site that the SINCs are located which is shown in brackets:

- Ashtirm Nurseries (SW)
- Marshy Grassland, Bishopstoke (SW)
- Winslowe House Meadow (SW)
- Breach and Gully Copses (NW)
- Breach Farm Meadows (NW)
- Breach Sling Copse and Stoke Common Copse (NW)
- Judges Gully Meadow (NW)
- River Itchen Grassland (NW)
- Crowdhill Copse (C)
- Fielders Farm Meadows (Eastleigh) (C)
- Hill Copse, Fair Oak and Horton Heath (C)
- Judges Gully Copse (C)
- Poplar Plantation (Stoke Park Wood) (C)
- Portsmouth Water Company Meadow (C)
- Stoke Park Wood (C)
- Upperbarn Copse (C)
- Chestnut Gully Wood (E)
- Hall Lands Copse (E)
- Hall Lands Farm Wood (E)
- Knowlehill Copse (E)
- Moplands Copse (E)
- Stroud Wood, Fair Oak and Horton Heath (E)
- Tippers Copse (E)

3.1.5 Stoke Park Wood is 74ha and is by far the largest of these SINCs.

Ancient Woodland

3.1.6 Twelve areas of Ancient Woodland abut or are in proximity of the site. Breach Sling Copse is located in the north west of the site as are six notably smaller areas of Ancient Woodland in Lord's Wood. Stoke Park Wood and Upper Barn Copse are located in the centre of the site. The much smaller Crowdhill Copse is located immediately to the east of Stoke Park Wood and Hill Copse is located north east of Upper Barn Copse. Hall Lands Copse abuts the boundary in the east of the site.

3.2 Water Environment

Groundwater

3.2.1 Any extraction within the water table would likely require de-watering activities which could, for example, give rise to hydrological and ecological considerations. Consent would also be required from the Environment Agency (EA) to allow for the water collected from the pumping exercise to be discharged into the local watercourses.

3.2.2 Further investigation would be required to establish the extent and viability of any mineral deposit within the promoted site, and the location of such deposits with reference to the future land use (e.g. public open space or built development) before concluding whether saturated sand and gravel deposits could be extracted.

3.2.3 As shown on the 'Water Environment Plan' (contained in Appendix A) the promoted site is not within a Groundwater Source Protection Zone (GSPZ). A Zone 1 – Inner Protection Zone and Zone II - Outer Protection Zone are located to the north of the site.

Surface Water

3.2.4 As described in the ecological designations section the River Itchen flows immediately along, and within parts, of the west of the promoted site. Bow Lake, a tributary of the River Itchen flows through the central area of the site.

3.2.5 The Water Environment Plan shows that five headwater locations are within the footprint of the promoted site, and a further fourteen are located on the boundary or within the vicinity of the

site. The impact on these headwaters would need to be considered prior to any mineral extraction.

Flooding

3.2.6 As shown on the Water Environment Plan, the north west and south west areas of the promoted site are within Flood Zone 3 on account of the River Itchen and its tributaries. Bow Lake, a tributary of the River Itchen, extends into a central area of the site. This tributary and the immediate surrounding area are also classed as Flood Zone 3.

3.2.7 A small area in the south east of the promoted site is within Flood Zones 2 and 3 on account of an existing drainage channel. This drainage channel to the east of Knowle Lane drains into Ford Lake further downstream to the south.

3.2.8 National Planning Policy Guidance (NPPG) defines sand and gravel working as 'water-compatible development' (Flood Risk and Coastal Change: Table 2/Paragraph 66). As such the presence of Flood Zone 3 is not in itself a barrier to mineral extraction.

3.2.9 However, where Flood Zone 3 is also coincident with other environmental designations such the River Itchen SSSI and SAC (and associated SINCs) and recorded historic water meadows this combination of constraints would conclude that mineral extraction is unlikely to be viable.

3.3 Historic Environment

Listed Buildings

3.3.1 There are several Grade II Listed Buildings within proximity of the promoted site. There are four Grade II Listed Buildings in the north-west of the site; two are near Highbridge and two are near Brambridge.

3.3.2 There is a Grade II Listed Building that borders the site on Winchester Road as well as one within the site boundary on Crowdhill (within the Central area of the site).

3.3.3 There are a further three Grade II Listed Buildings in a small parcel of land, which is surrounded by the site, between Mortimer's Farm and The Lodge (adjacent to the Eastern part of the site).

3.3.4 The locations of these Listed Buildings are shown on the Environmental Constraints Plan (in Appendix A).

Historic Water Meadows

3.3.5 The Environmental Constraints Plan also identifies the locations of Historic Water Meadows that are situated within and adjacent to the promoted site. The majority of these meadows, which were created through irrigating channels in grassland to produce a hay rich crop and high quality grazing land, coincide with the River Itchen flood plain. There is also an historic water meadow immediately east of Bow Lake (a tributary of the River Itchen).

Undesignated Archaeology Sites

3.3.6 With reference to HCC's Historic Environment Record there are twelve undesignated archaeology sites identified within the boundary of the promoted site.

3.3.7 Four of these features are coincident with the Historic Water Meadows. The extent and detail of the other eight archaeological sites would need to be further investigated as they lie within parts of the site that are defined on the masterplan as 'suitable for development related uses' and would potentially be suitable for mineral extraction if viable deposits were identified.

3.4 Existing Built Developments

3.4.1 The promoted site is located close to established urban areas, including Eastleigh, Allbrook, Stoke Common, Bishopstoke and Fair Oak.

3.4.2 The 'Existing Development Plan' contained in Appendix A identifies these existing developed areas in relation to the HCC minerals consultation area. A 100m stand-off has been applied to all existing residential / school / retail / commercial / and industrial land uses.

3.4.3 The stand-off is to highlight where existing development might impact upon the ability to extract any viable mineral reserves. In the event viable mineral deposits were identified these stand-offs would be reviewed on a location by location basis. It may be in some instances that with operational and management measures these stand-offs could be reduced, in other locations stand-offs may need to be increased.

Residential

3.4.4 The Existing Development Plan' Drawing shows that, on the basis of a 100m stand-off, existing residential dwellings in Bishopstoke, Eastleigh, Brambridge and Lord's Wood could constrain mineral extraction in the north west and south west areas of the promoted site. Dwellings in Crowdhill on Winchester Road could constrain mineral extraction within the central part of the promoted site, as could dwellings in Fair Oak in the eastern part of the site.

Industrial and Commercial

3.4.5 A 100m stand-off from industrial premises in Eastleigh would coincide with the south west area of the promoted site, as would industrial premises in Fair Oak within the eastern part of the site. The application of 100m stand-offs from retail units in Crowdhill and commercial premises at Fishers Pond could constrain minerals extraction in the central part of the site.

3.5 Other Constraints

Utilities

3.5.1 A high voltage power line runs east to west through the north west and central parts of the promoted site. This is highlighted on the Existing Development Plan in Appendix A. A safe-working stand-off would need to be applied beneath and either side of pylons and power lines. This would create a corridor across the promoted site where it would not be practicable to extract any mineral deposits.

3.5.2 A British Petroleum pipeline extends underground through the eastern area of the promoted site. The route of this pipeline is highlighted on the Existing Development Plan in Appendix A.

3.5.3 An easement of approximately 6m each side of the pipeline has been proposed in regard to the construction of the potential new built development. A similar easement would also need to be applied to any mineral extraction and would therefore limit mineral working in this area.

Public Rights of Way (PRoW)

3.5.4 The Environmental Constraints Plan in Appendix A identifies that several bridleways and footpaths cross the promoted site.

3.5.5 The presence of PRoW's need not limit mineral extraction if viable deposits are identified. However, regard would need to be had to the impact of any stopping-up or temporary or permanent diversions of PRoW's that would be required to safely facilitate mineral working.

3.5.6 Where PRoW's are retained or diverted during any mineral working additional stand-offs would need to be considered to maintain the safety of users of the PRoW network.

3.6 Summary

3.6.1 This section of the report, together with the Environmental Constraints Plan, Existing Development Plan, and Water Environment Plan has identified where existing environmental and ecological designations, as well as existing built development could act as an impediment to any extraction of mineral reserves that are identified within the footprint of the promoted site.

3.6.2 In the event that viable mineral deposits of suitable quality were identified within the promoted site further detailed investigation would be required to identify precisely the extent and method by which these reserves could be worked to ensure environmental designations are not unacceptably impacted and that existing levels of amenity are protected.

4.0 Mineral Safeguarding Planning Policy

4.0.1 The safeguarding of non-renewable resources, such as minerals, is a key aspect of sustainable development. Paragraph 143 of the National Planning Policy Framework (NPPF) obliges Mineral Planning Authorities to define Mineral Safeguarding Areas (MSA) when preparing local plans.

4.0.2 MSAs are produced to define known locations of specific mineral resources of local or national importance and to ensure these resources are not needlessly sterilised by non-mineral development, though MSAs carry no presumption that the resource will be worked.

Hampshire Minerals and Waste Plan

4.0.3 The promoted site is located within Hampshire and the County Council (HCC) act as the mineral planning authority. HCC's Minerals and Waste Plan (HMWP) was adopted in October 2013 and covers the period to 2030. The HMWP includes **Policy 15: Safeguarding - mineral resources** which states: -

> *'Hampshire's sand and gravel (sharp sand and gravel and soft sand)...are safeguarded against needless sterilisation by non-minerals development, unless 'prior extraction' takes place.*
> *Safeguarded mineral resources are defined by a Mineral Safeguarding Area illustrated on the Policies Map.*
> *Development without the prior extraction of mineral resources in the Mineral Safeguarding Area may be permitted if:*
>
> a. *it can be demonstrated that the sterilisation of mineral resources will not occur; or*
> b. *it would be inappropriate to extract mineral resources at that location, with regards to the other policies in the Plan; or*
> c. *the development would not pose a serious hindrance to mineral development in the vicinity; or*
> d. *the merits of the development outweigh the safeguarding of the mineral...'*

4.0.4 The Town and Country Planning Act 1990 places a requirement on a Local Planning Authority (e.g. Eastleigh Borough Council) to consult with the mineral planning authority (e.g. HCC) on development in an area, which they have been notified as being within the Minerals Consultation

Area (MCA) by the mineral planning authority, that could affect or be affected by mineral working.

4.0.5 The HMWP (paragraph 6.20) identifies that *"MCAs should be reflected in district and borough local plans. Where proposals are located in the MCA, discussions should take place with the relevant MPA prior to a submission of interest to potentially develop a site, to establish further information on the mineral potential of the site. Where a planning application is made for non-mineral development within the MCA, the district or borough council should consult the relevant MPA on the application."*

4.0.6 As such were the promoted site to move forward in the allocation process and to a planning application stage it would be necessary for Eastleigh Borough Council to consult with HCC in respect of minerals safeguarding, and ensure that any future planning application accords with the tests of **Policy 15** of the HMWP.

4.0.7 Appendix C of the HMWP provides an explanation as to how the Plan policies will be implemented. In relation to **Policy 15** it states: -

'...In terms of prior extraction, a realistic judgement about the likelihood of the mineral being worked in an environmentally acceptable way will be made in areas where development is proposed within the MSA. The minerals planning authority will not seek to prevent development where it is unlikely that extraction of the mineral would occur in the future. Where mineral deposits are believed to exist but detailed geological information is not available, the existence or otherwise of a potentially workable resource may need to be established by the developer before any application for development that might sterilise the potential deposit is determined.'

4.0.8 In February 2016, HCC published Supplementary Planning Document (SPD): *Minerals and Waste Safeguarding in Hampshire*, which sets out minerals and waste safeguarding in further detail and further underlines its importance. The SPD also aims to provide clear guidance on the implementation of the safeguarding policies and to improve the way the Hampshire Authorities work with other local authorities, developers and other interested parties with respect to minerals and waster safeguarding. The SPD states that: -

'This guidance has been produced to identify where particular care is needed to prevent the unnecessary sterilisation of mineral resources or encroachment of existing minerals or waste sites by non-minerals-or-waste development'.

4.0.9 However, the SPD acknowledges that safeguarding does not prevent non-mineral development and that there are situations where only some of the mineral resource may be extracted prior to development. It promotes the use of a sequential approach to mineral extraction, ranging from 'larger scale extraction' where the full mineral resource is extracted to 'incidental extraction' where smaller workable mineral resources are extracted during the preparation of a development site.

4.0.10 The SPD also describes the information that should be provided to the Minerals and Waste Planning Authority by developers when considering the issue of minerals safeguarding. The SPD confirms that this should include information such as the mineral potential of the site (e.g. quality and quantity of the resource), any opportunities for prior extraction, any constraints, in addition to details on mineral resources outside of the MSA in proximity to the site and evidence of discussions with local operators to confirm the viability of prior extraction.

Supply of Mineral

4.0.11 The HMWP also includes **Policy 20: Local land-won aggregates**. This policy identifies that *"An adequate and steady supply of locally extracted sand and gravel will be provided by maintaining a landbank of permitted sand and gravel reserves sufficient for at least seven years."* To provide this landbank **Policy 20** identifies extraction of remaining reserves at a number of existing permitted sites, identifies extensions to two existing sites, and identifies five preferred sites for future sand and gravel extraction. None of the existing or preferred extraction sites are located within the footprint or proximate to the promoted site.

4.0.12 HCCs Local Aggregate Assessment 2016 (LAA) was published in December 2016. The LAA showed an 11.4 million tonne reserve of sand and gravel, which represents a current landbank of 7.3 years. This accords with the aims of **Policy 20** of the HMWP and is consistent with national planning policy which states that *'sufficient land should be identified within plans to maintain landbanks of at least seven years for sand and gravel.'*

4.1 Analysis

4.1.1 This section has identified that there is a clear framework of planning policy in respect of minerals safeguarding. This policy is designed to ensure that valuable mineral resources are not unnecessarily sterilised, and that where non-mineral development is permitted that due consideration is given to ensuring that appropriate investigations are undertaken to establish if any viable mineral deposits can be recovered as part of the development process (from full prior extraction to incidental extraction).

4.1.2 However, the planning policy also acknowledges the presence of physical and environmental constraints and the limitations they might place on mineral extraction. The policy is also flexible in allowing effective sterilisation where the merits of the development outweigh safeguarding (for example if there is an overriding need for quick delivery of the proposed development that would be compromised by any delay to facilitate mineral extraction in full or in part).

4.1.3 HCC set out clear guidance both for local planning authorities and developers in respect of progressing potential development where issues of minerals safeguarding are present.

5.0 Approach to Minerals Safeguarding

5.0.1 This section sets out some initial conclusions and recommendations based upon the findings of this desk based assessment. The section sets out in broad terms some potential approaches to managing the issue of minerals safeguarding if the promoted site progresses through the allocation and planning process.

5.0.2 It is proposed that these initial conclusions, recommendations and potential approaches to minerals safeguarding form the basis of early discussions with Hampshire County Council, as the mineral planning authority.

5.1 Conclusions & Recommendations

Geology

5.1.1 The report identifies the extent of the defined Minerals Consultation Area (MCA) in relation to the promoted site. The MCA encompasses the majority of the promoted site in respect of potential viable deposits of soft sand and superficial soft sand and gravel.

5.1.2 A review of British Geological Society mapping has identified the superficial and bedrock geology within the footprint of the promoted site. This has identified that the sedimentary deposits comprising clay, silt, sand and gravel are predominantly situated within the corridor of the River Itchen and its tributaries which are located along the western edge of the promoted site.

5.1.3 Analysis of historic borehole records available from the British Geological Society has identified that the most consistent recording of sand and gravel deposits at depth has occurred in locations proximate to the north west and south west of the promoted site (again consistent with the location of the River Itchen and its tributaries).

5.1.4 Shallower deposits of sand and gravel were identified in areas proximate to the east of the promoted site. The only single historic record that corresponded with the central part of the promoted site did not record any sand and gravel deposits.

5.1.5 There was no accompanying analysis of the quality of any mineral deposits encountered and many borehole records referred to the presence of silts and clay lenses which might impact on the quality of any resource.

Geology Recommendations

5.1.6 It is recommended that trial pitting and/or borehole testing is undertaken more widely within the footprint of the promoted site to gain a better understanding of the extent of any sand and gravel deposits, and establish how the profile of any deposits varies across the promoted site.

5.1.7 Where mineral is recorded an appropriate amount of particle size density (PSD) testing should be undertaken by a suitably accredited laboratory to further understand the quality of any mineral deposit.

Constraints

5.1.8 The report includes a series of drawings in Appendix A that identify a range of potential ecological, environmental and physical constraints to the working of mineral in relation to the promoted site.

5.1.9 The desktop geological analysis would suggest the most consistent deposits lie within the corridor of the River Itchen and its tributaries. This area is largely defined as Flood Zone 3 and is also subject to a range of national and local ecological and heritage designations.

5.1.10 The masterplan for the promoted site identifies the corresponding areas within the south west and north west of the promoted site as being suitable for public open space uses, and initial analysis would suggest that the combination of designations in these areas would act as significant constraint to any mineral working.

5.1.11 Across the central and eastern parts of the promoted site ecological, heritage, existing built development and utilities infrastructure (power lines & pipeline) would all act to some degree as constraints to mineral working should viable deposits be identified.

Constraints Recommendations

5.1.12 In the event site investigation and analysis of mineral identifies a deposit of viable quality further assessment would be required by technical specialists to examine the potential impact of mineral working on the identified constraints. This process would then help define the areas within the promoted site that mineral could be extracted without causing any unacceptable level of impact on the environment and amenity.

5.1.13 These assessments would be expected to include ecology, archaeology and heritage, hydrogeology and hydrology, and noise.

5.2 Mineral Extraction Opportunities

5.2.1 From the review of planning policy it is clear that the issue of minerals safeguarding would need detailed consideration if the promoted site progresses through the allocation and planning application process.

5.2.2 It is recommended that HCC, as the mineral planning authority, are engaged to agree an approach to assessing the issue of minerals safeguarding and consider potential options for the actual physical extraction of any mineral should viable deposits be identified.

Assessment of Mineral Deposit

5.2.3 It is recommended that based upon this report and the HCC Supplementary Planning Document: *Minerals and Waste Safeguarding in Hampshire* (SPD) that an approach is agreed to the extent of site investigation works to inform the understanding of the extent and quality of any deposits.

5.2.4 It is envisaged that this approach would take account of the ecological, environmental and physical constraints as well as the proposed masterplan for the promoted site. For example, is further investigation of areas in the north west and south west of the promoted site necessary if the identified constraints would preclude minerals extraction being acceptable in these areas?

Extraction Options

5.2.5 In the event that assessment of agreed areas identifies mineral deposits of suitable quality then extraction options would need to be considered. The extent of extraction would in part be

determined by the geographical spread and volume of deposits and these would need to be clearly mapped, again with consideration to identified constraints, and also with consideration to the footprint, phasing and timescale for the delivery of the proposed built element of the promoted site.

5.2.6 Unless other planning considerations conclude that the merits of the development outweigh the safeguarding of the mineral it would be expected that either full, partial, or incidental extraction (or a combination of approaches across the footprint of the promoted site) would form part of the development delivery.

Full Prior Extraction

5.2.7 Full prior extraction would see the entire viable soft sand / superficial sand and gravel resource recovered across the promoted site. This approach would see the maximum amount of sand and gravel recovered. Depending on the extent of the extractable resource such an approach might facilitate the temporary development of on-site minerals processing plant to facilitate its export into the wider market and facilitate its use within the built development at the promoted site.

5.2.8 This would be the option most favoured by HCC as it would maximise the extraction of the resource and avoid its sterilisation. However, the SPD notes that *"there will be no presumption that the mineral will be worked in full. Extraction would likely be a separate activity to the non minerals-or-waste development and may include restoration of the land to make it suitable for future non-minerals-or-waste development."*

Partial Extraction

5.2.9 Where there is a constraint to full extraction (such as an overriding phasing of development need) there may be an opportunity for partial extraction. The HCC SPD notes that *"Where there is no opportunity for a more comprehensive extraction of the mineral resources present, it may be possible to conduct prior extraction as an integral part of the development (such as during the preparation of the land for the development). The material could then either be processed and used on site or exported to a suitable site."*

Incidental Extraction

5.2.10 Incidental extraction would comprise the excavation of any sand and gravel resource through the preparatory earthworks required for the construction of the development. Incidental extraction at the promoted site would potentially be over a large area as excavation would be required for the construction of the 6,000+ homes, 30,000+ M^2 of business and employment space and new centres, which would provide shops, services and other facilities.

5.2.11 Excavation would also be required for all roads and drainage systems. An incidental extraction approach would not unduly delay the construction of the development as it is understood that this material would have to extracted in any event (whether it be clay (which would typically be exported as muck-away) or sand and gravel which could be put to a beneficial use both on and off-site.

5.2.12 The HCC SPD states for incidental extraction that *"Any preparation of the site for the development may result in the extraction of suitable mineral that could be processed and used on site. This is the minimum level of prior extraction that [HCC] would seek as part of any non-minerals-or-waste development…, as these activities are likely to occur with any relevant proposed development. This may include excavating the foundations and footings or landscaping works associated with the development."*

Mixed Approach

5.2.13 For the delivery of a strategic housing site, such as the promoted site, that would be undertaken across a large area across a wide timeframe it might be feasible to adopt a mixed approach to mineral extraction should viable deposits be identified.

5.2.14 For example a combination of partial extraction and incidental extraction may be appropriate depending on the distribution of viable mineral reserves and the phasing and timing requirements of the built element.

Mineral Recovery

5.2.15 Dependent on the volume of any viable deposits the developer would need to link with an operator in the local mineral market to facilitate the extraction and distribution of recovered sand and gravel resources.

5.2.16 On a strategic development of the scale proposed it would also be practicable to investigate the re-use of recovered mineral directly within the construction of the built development. This would have sustainability benefits by reducing the reliance on imported aggregate.

5.3 Summary

5.3.1 This Minerals Safeguarding Appraisal has completed a desk based review of the geology and historic borehole data relevant to the promoted site, and identified in broad terms any ecological, environmental and physical constraints that might impact upon the ability to extract any viable mineral deposits.

5.3.2 This report sets out a recommended approach to progressing the issue of minerals safeguarding in consultation with Hampshire County Council and sets out in high-level potential extraction options if viable mineral deposits were identified across the promoted site.

5.3.3 This report makes an initial conclusion that further investigation into the assessing minerals safeguarding in the south west and north west of the site should be ruled out at this stage, as the combination of constraints would make mineral extraction unviable.

5.3.4 It is therefore recommended that future minerals safeguarding assessment work is focused on the central and eastern areas of the promoted site.

5.3.5 We understand that, subject to allocation, the development would be subject to a full Environment Impact Assessment, and we understand that Minerals would be a separate Chapter within the Environmental Statement that would be prepared to support any emerging development proposals for the Strategic Growth Option.

Appendix A

Geological Plan

Environmental Plan

Water Environment Plan

Existing Development Plan

Eastleigh Strategic Development - Geological Plan

Eastleigh, Hampshire

Eastleigh Strategic Development
- Drew Smith Group
- Highwood Land LLP

British Geological Survey Borehole Records
- Not available
- 0 - 10m
- 10 - 30m
- 30m +

HCC Minerals and Waste Consultation Area
- MWCA Brick Clay
- MWCA Soft Sand
- MWCA Superficial Soft Sand & Gravel

British Geological Survey
Superficial deposits
- ALLUVIUM - CLAY, SILT AND SAND
- BRICKEARTH - SILT
- RIVER TERRACE DEPOSITS (UNDIFFERENTIATED) - SAND AND GRAVEL

Hampshire Minerals & Waste Plan Mineral Consultation Area (2015)
Highwood Drew Strategic Site Rational Delivery Strategy (11/2016)

Drawn by: CL

Checked by: JV

Drawing No.

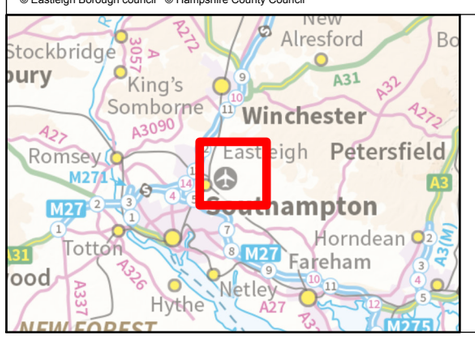
Revision No.

0 370 740 1,110 Meters

Scale 1:25,000 @A3

15 November 2017

NGR: 448656E 119672N



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Eastleigh Strategic Development - Environmental Plan

Eastleigh, Hampshire

Eastleigh Strategic Development
- Drew Smith Group
- Highwood Land LLP

HCC Historic Environment Record
- Undesignated Archaeology Sites
- Historic Water Meadows

Rights of Way
- Bridleway
- Footpath
- Restricted Byway

Historic England
- Listed Building Grade II*
- Listed Building Grade II
- Park and Garden
- Scheduled Monument

Natural England
- SAC
- SSSI
- Ancient Woodland
- National Park
- Country Parks
- SINCs

HCC Minerals and Waste Consultation Area
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- MWCA Soft Sand
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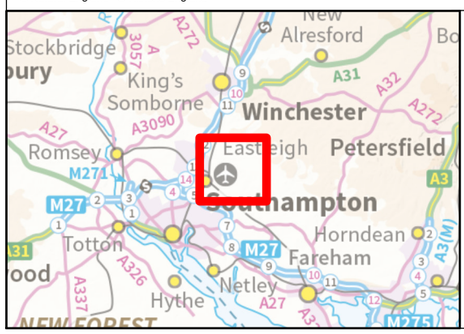

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Eastleigh Strategic Development - Water Environment Plan

Eastleigh, Hampshire

Eastleigh Strategic Development

- Drew Smith Group
- Highwood Land LLP

Groundwater Source Protection Zone

- Zone I - Inner Protection Zone
- Zone II - Outer Protection Zone
- Zone III - Total Catchment

Surface Water

- Flood Zone 2
- Flood Zone 3
- Headwater locations

HCC Minerals and Waste Consultation Area

- MWCA Brick Clay
- MWCA Soft Sand
- MWCA Superficial Soft Sand & Gravel

Highwood Drew Strategic Site Rational Delivery Strategy (11/2016)
Hampshire Minerals & Waste Plan Mineral Consultation Area (2015)

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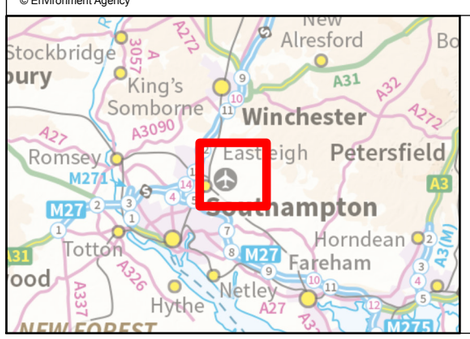

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Eastleigh Strategic Development - Existing Development Plan

Eastleigh, Hampshire

Eastleigh Strategic Development

- Drew Smith Group
- Highwood Land LLP

Utility Infrastructure

- Overhead Power Line
- BP Pipeline

Built Development Standoffs

- 100m residential standoff
- 100m school standoff
- 100m retail standoff
- 100m commercial standoff
- 100m industrial standoff

HCC Minerals and Waste Consultation Area

- MWCA Brick Clay
- MWCA Soft Sand
- MWCA Superficial Soft Sand & Gravel

Hampshire Minerals & Waste Plan Mineral Consultation Area (2015)
Highwood Drew Strategic Site Rational Delivery Strategy (11/2016)

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Botleigh Grange
Office Campus
Hedge End
Southampton
Hampshire, SO30 2AF