



global environmental solutions

Eversley Haulage Park, Hook, Hampshire

Ecological Baseline and Impact Assessment

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1.0 INTRODUCTION

This section describes the ecological conditions at the site and the nature conservation value of the area with potential to be affected by the proposed development. It assesses the potential impacts that the proposed development could have upon the flora and fauna and details appropriate mitigation measures required to reduce, compensate or avoid these impacts. It then provides an assessment of the significance of the potential residual impacts arising from the proposal.

This ecological impact assessment (EclA) can be considered as having three purposes:

- to provide an objective and transparent assessment of the ecological effects of the proposed development or activity;
- to permit objective and transparent determination of the consequences of the proposals in terms of national, regional and local policies relevant to nature conservation; and
- to demonstrate that the proposed development or activity will meet the legal requirements relating to species and habitats.

In assessing the effects of any such proposal it is necessary to define the spatial and temporal area of study and to focus the assessment upon those features or resources that are of ecological value in the context of that proposal. The scope of this assessment has been determined through the consideration of the possible direct and indirect impacts associated with the proposal by an assessment of ecological receptors that may be affected. The focus of the ecological assessment is on those species (or communities of species) that are considered 'important'.

1.1 Area of Study

The study area is concentrated upon the application boundary for the development, which is the extent of existing development at the site. In addition, where safe access was possible, the habitats around the application site up to 200m away were assessed. The application boundary and habitats surrounding the application site are shown on Drawing 1.

2.0 ASSESSMENT APPROACH

The collection of baseline data, evaluation of species and habitats and assessment of impacts follows those guidelines set out by the Institute of Ecology and Environmental Management (IEEM)¹.

2.1 Consultation and Scoping

In accordance with Regulation 10 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, Hampshire County Council (LCC) provided a Scoping Opinion on 27th May 2009, this scoping opinion included correspondence from Mr Marc Turner of Natural England and a copy of which can be found at Appendix 2. The scoping opinion has informed this ecological assessment.

In addition, informal discussions with Natural England regarding the nature and extent of any surveys which should be undertaken as part of the planning application process were undertaken in June 2010. The comments made by Natural England during these discussions have also been considered within this ecological assessment². Discussions have also been undertaken with the local officer for the Sites of Special Scientific Interest (SSSI) which are located surrounding the application boundary to ascertain further information on the location and types of species which are known to occur at the sites.

2.2 Review of Existing Data

Information on statutorily-designated sites from within and around the application site was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database, which utilises data provided by Natural England, and 'Nature on the Map', Natural England's interactive map website.

Information on statutory and non-statutory sites and the presence of protected species within 2km of the application site (approximate centre grid reference SU 788 591) has been sought through consultation with Hampshire Biodiversity Information Centre (HBIC).

Additional ecological information relating to the study area has also been reviewed. These sources include:

- Habitats Regulations Risk Assessment (HABRA) to support the Waste Management Licence prepared in March 2005. (SLR Consulting Ltd, 2005). SLR Ref: 4C-842-002;
- English Nature citation documents for Thames Basin Heaths SPA associated SSSIs;
- SPA Review documents for Thames Basin Heaths SPA;
- Conservation Objectives for the Interests at Bramshill SSSI and Castle Bottom to Yateley and Hawley Commons SSSI
- Advice on Operations likely to damage the special interest of Bramshill SSSI and Castle Bottom to Yateley and Hawley Commons SSSI;
- Information relating population size and distribution and autecology of Birds Directive Annex I species, JNCC website; and
- Eversley Waste Management Facility *Waste Management Licence Application*. (SLR/4C-842-002). February 2005.

¹ Institute of Ecology and Environmental Management (2006) *Guidelines for Ecological Impact Assessment in the United Kingdom*

² Verbal Correspondence with Marc Turner., 24th June 2010.

Where appropriate, these reports are appended to this report, as outlined in the contents page.

2.3 Baseline Data Collection - Field Surveys

On 25th June 2010 an ecologist from SLR undertook an Extended Phase I habitat survey of the study area following standard survey methodology, focussing on the areas of land which were the subject of existing planning permissions. The study also focussed on assessing the habitats within 200m of the application boundary for which access was possible.

Following consultation with the organisations outlined in Section 2.1 and a review of existing data (Section 2.2) and the results obtained from the 2010 Extended Phase I surveys, specialist surveys for a range of habitats and species were not undertaken.

2.3.1 Survey Team

All surveys were undertaken by Dr Andrea Wilcockson CEnv MIEEM an experienced botanical surveyor. All baseline survey reports have been subject to peer review by an experienced ecologist who is a full member of the Institute of Ecology and Environmental Management (MIEEM).

2.3.2 Constraints to Baseline Ecological Surveys

The Extended Phase I habitat surveys did not seek to identify all species of flora within the study area and as such, this report does not provide an exhaustive list of flora. However, it is considered that the survey results are representative of the habitats and flora of the study area, and include the dominant and characteristic species.

Lack of evidence of a species during a particular survey does not necessarily preclude its presence at a later date. Nonetheless, it is considered that survey results presented in this report represent the baseline conditions at the study area at the current time in sufficient detail to undertake an ecological impact assessment.

2.4 Evaluation Approach

2.4.1 Geographic Frame of Reference

IEEM guidelines suggest that to ensure a consistency of approach, ecological features are valued in accordance with the following scale:

- International;
- UK;
- National (i.e. England, Wales);
- Regional (e.g. South England);
- County or Metropolitan (e.g. Hampshire);
- District (Hart District);
- Parish (of value in the Parish of Eversley only).

These categories have been applied to the features identified in the baseline surveys described previously. A further explanation of these criteria is provided in IEEM (2006). Ecological receptors of less than Parish value are not considered to be of sufficient value to be considered in further detail by this assessment.

Separate criteria are used to value designated sites, non-designated sites and species of ecological importance and these criteria are briefly explained below.

2.4.2 Designated Sites

Natural England designates sites that are of national importance for nature conservation, such as Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNR). International sites, i.e. Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites are identified by the Joint Nature Conservation Committee (JNCC) and forwarded to the European Union for approval as part of the European-wide Natura 2000 network. Designated non-statutory wildlife sites in this area are known as Sites of Importance for Nature Conservation (SINC) and are designated by Hampshire County Council (HCC).

2.4.3 Non-designated Sites

For features (habitats or habitat mosaics) that have not been designated in such a way, SLR has undertaken an evaluation based upon those guidelines suggested by the IEEM; the SSSI Selection Guidelines³, Hampshire SINC Guidelines⁴ and the Hampshire Biodiversity Action Plan (LBAP)⁵. In this way the features being evaluated are considered in the context of objective criteria, where they are applicable. Where published criteria are not available for the features being considered, other evaluative criteria, e.g. the Ratcliffe criteria⁶, are applied to place the feature in the context of the site and the locality. Using features evaluated in this way it is possible to provide a more accurate assessment of the impacts of the proposed development on these features.

2.4.4 Species

Species are evaluated based on their rarity, population size and whether they are especially important to the functioning of an ecosystem. Though they may not be protected or particularly rare, consideration is also given to those species listed in national and local BAPs.

The criteria used to determine the biodiversity value of a species or features that may support a species include the following general considerations:

- rarity at a geographical level (international, national or county);
- endemism and locally distinct varieties or sub-species;
- species on the edge of geographic range;
- size of populations in the parish or county geographical context;
- species-rich assemblages of a larger taxonomic grouping, e.g. herpetofauna or wintering birds;
- plant communities, ecosystems or habitat mosaics/associations that provide habitat for any of the above species or assemblages; and
- populations of species considered as significant in a Hampshire context, as described in the Natural Area profile, Hampshire BAP, or other relevant documents.

³ NCC (1989) Guidelines for the Selection of Biological SSSIs – revised 1998

⁴ *Criteria for Selecting Sites of Importance for Nature Conservation in Hampshire*. Supplied by Hampshire Biological Information Centre.

⁵ <http://www.hampshirebiodiversity.org/hampshire%20BAP.html>

⁶ Ratcliffe's (1977) criteria provide a standardised way of assessing the value of a site using the following ten attributes: Size, Naturalness, Representativeness, Rarity, Diversity, Position, History, Fragility, Potential value, Intrinsic appeal

Legal protection of a particular species is considered in a later sub-section and does not specifically form part of the biodiversity evaluation.

2.4.5 Other Considerations in Valuation

IEEM (2006) highlights four further aspects of valuation to be considered. These are:

- Potential value: a consideration of the likely enhancements and habitat creation committed by the landowner, e.g. through existing management agreements or other delivery mechanisms.
- Secondary and Supporting Value: a consideration of other aspects of ecological functionality, not explicit in the biodiversity valuation, e.g. flood storage in floodplain grasslands or buffer habitats that protect an important habitat from identified effects.
- Social Value: a consideration of the human-derived benefits of biodiversity, including informal recreation and educational uses.
- Economic Value: a consideration of direct economic benefits derived from biodiversity, e.g. paid for fishing rights, stalking or car parking/entrance fees to nature reserves.

Where relevant to the individual receptor, these aspects will be described and assessed.

2.5 Impact Assessment Methodology

The assessment of ecological impacts follows the process described by the IEEM (2006), which can be summarised as:

- identification of the range of potential impacts that may arise resulting from the proposed development;
- consideration of the systems and processes in place to avoid, reduce or mitigate the possible effects of these impacts;
- identification of the opportunity for ecological enhancement associated with the proposals;
- assessment of the residual impacts, following consideration of the success of avoidance, mitigation and enhancement measures; and
- where necessary, identification of compensation required to offset any significant residual effects.

As highlighted earlier in this section, the significance of residual impacts is assessed on three separate levels. These can be summarised as:

- impacts upon biodiversity resources;
- the consequences in terms of national and local nature conservation planning policy; and
- the legal requirements relating to species and habitats.

To assess the effects of a proposed development it is essential that the range of potential impacts that could arise is identified. The range of impacts that require consideration in the ecological impact assessment are based upon knowledge of the proposed development and knowledge of the receptors (features of ecological sensitivity). This can only be undertaken with a thorough understanding of ecological processes and how flora and fauna react to the range of impacts that could occur. SLR has reviewed the Environmental Permit, specifically the HABRA which was prepared by SLR in 2005 in order to inform this assessment.

2.5.1 Avoidance, Reduction and Mitigation

Where possible, mitigation measures to avoid, reduce or limit the potential impacts of the proposals have been incorporated into the development scheme. These measures are briefly described within the impact assessment section; which will also consider the probability that the described mitigation measure will have the desired reducing effect. This ensures that the impact of the scheme, as it would be delivered, is properly assessed. Where appropriate, mitigation measures that could further reduce impacts or the effects of impacts are also described. The significance of the impacts of the scheme following mitigation, i.e. the residual impacts, is analysed using methods outlined below.

2.5.2 Calculating the Magnitude and Significance of Residual Impacts

The predicted impacts of the proposed development, following mitigation, i.e. the residual impacts, are assessed using the following approach. In order to provide an objective assessment of the nature of each impact, descriptors set out in Table 1 are used.

To fully evaluate the effects of a predicted impact upon valued ecological receptors it is necessary to assess the significance of the impact upon that feature. Significance is assessed at the geographical scale at which the feature is considered important. For instance, the loss of the majority of a hedgerow resource within a site, assessed as being of parish value, could be significant at the parish scale. The loss of a small area of a nationally designated site; may not be significant at a national level if the loss did not affect the integrity⁷ of the site. However, the loss may be significant at the county or parish scale, if the features lost were rare in that geographical context. In most cases, the range of levels of significance is determined by careful consideration of factors such as the existing baseline, ecological context of proposed development area, predicted trends, background level of impacts, predictability of effects occurring and the likely effectiveness of the proposed mitigation measures.

The significance of residual effects is also considered in terms of their legal and policy framework.

Residual effects are only considered for those ecological features assessed as being of parish or greater value. Features of less than parish value are excluded from the assessment.

⁷ Integrity can be defined as: “the coherence of its ecological structure and function, across the whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it is classified” PPG9 Box C10

Table 1
Key Considerations when Characterising Impacts

	Descriptor	Definition⁸
I	Direction of impact	Positive or negative impact
II	Probability of occurring	Broadly defined on 3 levels: Certain, Probable or Unlikely
III	Complexity	Direct, Indirect or Cumulative
IV	Extent and Context	Area/number affected and % of total
V	Magnitude	Describe severity of effect in words
VI	Duration	Permanent or Temporary in ecological terms (e.g. within the lifetime of the species affected)
VII	Reversibility	Whether or not the effect can be reversed in an ecological timescale

2.5.3 Compensation and Off-setting Unavoidable Biodiversity Loss

Where an unavoidable impact has been identified, it may be appropriate to offer compensation to off-set the residual effects upon biodiversity resources after all mitigation measures have been implemented to ensure that the scheme offers no net loss of biodiversity resources within the context of the scheme proposed. Compensation measures cannot reduce an identified residual effect but provide an opportunity to balance unavoidable losses with enhancements that would only be delivered if the scheme is implemented. A qualitative approach to assessing the value and contribution of offsets has been taken in this assessment.

⁸ Definitions for these terms and further information relating the methods of assessment are given in Guidelines for Ecological Impact Assessment (IEEM, 2006)

3.0 BASELINE CONDITIONS

3.1 Landscape Context

The study area is situated within Thames Basin Heaths Special Protection Area (SPA). The application site is also surrounded by further Sites of Special Scientific Interest (SSSIs). The habitats surrounding the site are dominated by coniferous plantation woodland, which is owned by Forestry Commission but which is being progressively worked for quarrying. In addition, there are two extensive quarries surrounding the site, Cemex's Bramshill Quarry to the west and Lafarge's Eversley Quarry to the east. On the western boundary of the site is the busy A327 from Eversley to where it meets the A30. Further east of the site is Blackbushe Airport and beyond that is the town of Yateley. There are no large settlements within 1km of the application site, with only individual houses or farms being present.

3.2 Nature Conservation Designations

For the purpose of this evaluation, the zone of influence is set at 2km from the boundary of the application site with regards to the presence of designated sites of international importance, statutory designated sites of national, regional and county importance, and within the study area and its immediate surroundings for non-statutory designations of county, district or parish importance, non-designated sites and species. Appendix 1 describes and shows the locations of statutory and non-statutory sites in relation to the study area.

3.3 Statutory Designated Sites

Eversley Haulage Park is almost surrounded by Thames Basin Heaths Special Protection Area (SPA), with no stand-off from the application boundary.

Thames Basin Heaths SPA is composed of 13 separate Sites Special Scientific Interest (SSSIs). Two of these component SSSIs fall within 2km of the installation, these being Bramshill and Castle Bottom to Yateley and Hawley Commons. There are no other SSSIs within 2km of the application site and only these two sites will be considered further.

The SPA is a composite of open heathland overlying sand and gravel sediments, both wet and dry heath are present. There are also areas of scrub and woodland, which have become fragmented due to development. These were once continuous across Surrey, Hampshire and Berkshire. The site supports important breeding populations of a number of lowland heathland birds especially nightjar (*Caprimulgus europaeus*), woodlark (*Lullula arborea*) and Dartford warbler (*Sylvia undata*).

There are three statutory designated sites of national importance within 2km of the application boundary, Bramshill SSSI, Castle Bottom to Yateley and Hawley Commons SSSI and Castle Bottom SSSI and National Nature Reserve (NNR).

Bramshill SSSI, which is adjacent to the western boundary of the application site, is designated because of the shallow acid ponds and mire which it supports. The rotationally felled conifer plantation offers habitat for nightjar, woodlark and Dartford warbler. The mire and acid ponds support a rich assemblage of dragonfly, damselfly and nationally scarce plants. The site also supports small breeding populations of hobby and little ringed plover (*Charadrius dubius*).

Castle Bottom to Yateley and Hawley Commons SSSI is adjacent to the northern, eastern and southern boundaries of the application site and has been designated because of its heathland and young conifer plantation which support internationally important populations of Dartford warbler and populations of two other internationally important species, woodlark and nightjar. It is one of the largest remnants of lowland heathland in the Thames Basin Heaths SPA. The site supports a rich invertebrate fauna including nationally scarce species and an outstanding assemblage of dragonflies. It also supports populations of the nationally scarce plant upright chickweed (*Moenchia erecta*).

Castle Bottom National Nature Reserve is located approximately 480m north-east of the application boundary. The NNR is a small lowland reserve containing one of the most important valley mires in southern England, with associated heathland and woodland habitats. It is within Thames Basins Heaths SPA and supports populations of breeding birds.

3.4 Non-Statutory Sites

3.4.1 Sites of Importance for Nature Conservation (SINC)

There are a total of 16 locally designated sites within the study area using information provided by HBIC. The sites identified within the study area are shown in Table 2 below and on the drawings in Appendix 1. Local sites are designated as Sites of Importance for Nature Conservation (SINC). In addition there are four stands of Ancient Woodland (as shown on the Ancient Woodland Inventory).

Table 2
Non-Statutory Designated Sites within Zone of Influence of the Study Area

Map Ref	Site Name and Description	Grid Ref	Location	Designation
1	Hulford's Copse	SU76605860	2.37km west	County level
2	Hulford's Ponds	SU76705890	2.00km west	County level
3	Warren Heath	SU77426030	1.12km north-west	County level
4	Coombes Wood	SU77806020	1.13km north-west	County level
5	Alder Copse	SU78155739	1.75km south	County level
6	Elvetham Farm Trackway	SU78295729	0.87km south	County level
7	River Hart	SU78605700	1.94km south	County level
8	Great Copse	SU78606060	1.19km north	County level
9	Lower Eversley Copse (North)	SU78806120	2.37km north	County level
10	Lower Eversley Copse (South)	SU78906100	1.62km north	County level
11	Kiln Close Copse Meadow	SU79106030	1.06km north	County level
12	Word Hill Farm Arable Field Margins 2	SU79275689	0.90km south	County level
13	Kits Croft West	SU79556014	1.00km north-east	County level
14	Castle Bottom Meadow	SU79605990	0.80km north-east	County level
15	Firgrove Meadow	SU79666050	1.25km north-east	County level
16	Blackbushe Airfield	SU80605940	0.82km east	County level
17	Hulfords Copse Replanted Ancient Woodland	SU76605860	2.37km west	County level
18	Coombes Wood Replanted Ancient Woodland	SU77806020	1.13km north-west	County level
19	Lower Eversley Copse Semi-natural Ancient Woodland	SU7896100	1.62km north	County level
20	Unnamed Semi-natural Ancient Woodland	SU79006060	1.40km north	County level

3.4.2 Ancient Woodland Inventory Sites

Ancient woodland is not a formal nature conservation designation but a term applied to sites in England and Wales whose documented history shows them to have been continuously wooded since approximately 1600, and which are by extension considered likely to have been continuously wooded since the last Ice Age.

Ancient woodland sites and their mature soils are considerably more complex and biodiverse ecosystems than secondarily wooded sites, and therefore represent environmental capital

that should be considered to be a finite resource, as it is not renewable in a human timescale.

There are four areas of woodland identified on the Ancient Woodland Inventory. Two of which are replanted and the other two are semi-natural woodlands. Three of the woodlands are also SINCs; namely: Hulford's Copse, Coombes Wood and Lower Eversley Copse. Non-designated sites supporting ancient woodland located outside the study area are not considered to be at risk of potential impacts from the proposed extension, and for this reason are not considered further within this report.

3.5 Habitats within the Study Area

Drawing 1 shows the distribution of habitats within the application site and surrounding 200m radius. Detailed habitat descriptions and target notes (TN) are provided in Table 3. The results of studies are summarised in the following section.

The study area comprises the application site at Eversley Haulage Park and land within 200m of the boundary of the application site where access was possible. This includes the hardstanding within the application site, areas of active quarry voids and plantation woodland.

3.5.1 Application Site

The application site itself is generally devoid of vegetation. Where vegetation is present it is restricted to ephemeral/pioneer species such as dandelion (*Taraxacum* agg.), cat's ear (*Hypochaeris radicata*), bramble (*Rubus fruticosus* agg.) and annual meadow-grass (*Poa annua*).

3.5.2 Woodland

The majority of the woodland close to the application site is coniferous plantation with mature pines (TN7-9), there are also areas of immature recently planted plantation. In addition there is a small area of mature deciduous plantation which was retained when the land behind was clear felled (TN5). The dominant species within the deciduous woodland area were English oak (*Quercus robur*), rowan (*Sorbus aucuparia*) and beech (*Fagus sylvatica*).

Ground flora is generally limited to species linked to acid heath or woodland such as creeping cinquefoil (*Potentilla reptans*), bell heather (*Erica cinerea*), wavy hair-grass (*Deschampsia flexuosa*), tufted hair-grass (*Deschampsia caespitosa*). Also present are bracken (*Pteridium aquilinum*), honeysuckle (*Lonicera periclymenum*), brambles and European gorse (*Ulex europaeus*).

3.5.3 Heath

A very small area of pioneer heathland occurs, with a mosaic of bell heather and bracken. Wavy hair-grass and birds-foot-trefoil (*Lotus corniculatus*) are also present (TN4).

3.5.4 Unassigned Areas

The majority of areas with vegetation are small and support a range of species either those of a more ruderal or scrubby nature such as brambles and nettles (*Urtica dioica*) or those of semi-improved grassland such as yarrow (*Achillea millefolium*), birds-foot-trefoil and grass species (TN 12, 13, 14, 15).

Also associated with these areas is a small stagnant ditch (TN15), which is generally devoid of vegetation.

3.5.5 Quarry

Land to the west, east and south-east of the application site is part of active quarries; some of the land has been or may have been restored to plantation but full access was not possible (TN10). Where screening bunds are present these are generally devoid of vegetation or have occasional species such as bracken and wavy hair-grass.

Table 3
Target Notes for Eversley Haulage Park and Study Area

TN	Description
1	<p>Immature woodland. Silver birch (<i>Betula pendula</i>) and pine spp in small area along side of the road. Ground flora includes brambles (D), soft-rush (<i>Juncus effusus</i>) (O), creeping cinquefoil (R), spear thistle (<i>Cirsium vulgare</i>) (R), common nettle (R), wavy hair-grass and white clover (<i>Trifolium repens</i>) (R). Also present were immature field maple (<i>Acer campestre</i>), beech and English oak.</p> <p>Also present was an area of ruderal species not under the main canopy including nettles.</p>
2	 <p>Tree Band Mixed Plantation. Band of planted immature trees of up to half a metre in height, species present included beech and hawthorn (<i>Crataegus monogyna</i>). Ground flora includes European gorse (O), bell heather (R-O), wavy hair-grass (A), creeping cinquefoil (F), cat's ear (R) and devil's-bit scabious (<i>Succisa pratensis</i>).</p> <p>Further south is a 5-10 m wide band of mature pine, with some silver birch and ground flora dominated by brambles (O-F), with occasional bell heather, wavy hair-grass and tufted hair-grass.</p> <p>Further east is an open quarry area and screening bund which is generally devoid of vegetation. When vegetation is present it is restricted to occasional bracken, wavy hair-grass or ragwort (<i>Senecio jacobaea</i>).</p>

TN	Description
3	<p>Road verge. Narrow verge of typical semi-improved grassland species including perennial rye grass (<i>Lolium perenne</i>), ribwort plantain (<i>Plantago lanceolata</i>), bracken, brambles, hogweed (<i>Heracleum sphondylium</i>) (R), ragwort, wall barley (<i>Hordeum murinum</i>), apple species (<i>Malus</i>), cleavers (<i>Galium aparine</i>), nettles, bird's-foot-trefoil and wild angelica (<i>Angelica sylvestris</i>). Verge was no more than about 1m in width.</p>
4	<p>Heath mosaic. Small area of heath and developing silver birch. In the open areas bird's-foot-trefoil, bracken and bell heather tended to dominate.</p>
5	<p>Deciduous woodland. Narrow band approximately 10m in width. Species present included beech, rowan and English oak. Ground flora was dominated by bracken and honeysuckle. Also present are a number of rhododendrons (<i>Rhododendron ponticum</i> spp).</p> <p>Further north is an area of re-planted mixed woodland.</p>
6	 <p>Retained screening, approximately 15m wide, close to the public footpath dominated by mature Scot's pine (<i>Pinus sylvestris</i>), and further west is dominated by immature silver birch. Ground flora is dominated by bracken, creeping bent (<i>Agrostis stolonifera</i>), wavy hair-grass (O), brambles and salad burnet (<i>Sanguisorba minor ssp minor</i>) (R).</p>

TN	Description	
7		<p>Plantation Woodland. Dense mature plantation. Ground flora includes European gorse, brambles, immature silver birch, pines and bell heather.</p>
8	<p>Vegetated Track besides road ground flora dominated by European gorse, brambles (O), honeysuckle (F), wavy hair-grass (A), creeping bent (A), timothy (<i>Phleum pratense</i>) (O), creeping cinquefoil (O) and bell heather (O).</p> <p>There is also a line of mature English Oak, possibly marking the location of a former hedge line.</p>	
9	<p>Track besides road with small section of mature trees close to the main Eversley Quarry area. Ground flora included European gorse (F), brambles (F), honeysuckle and bell heather. Grasses cover possibly 80% and included tufted hair-grass and wavy hair-grass.</p>	
10		<p>Unaccessed land within Eversley Quarry. Access was not possible but from what could be seen from outside of the quarry using vantage points the main part of the land north-east and immediately east of the application site has been replanted. It is not clear with what species but immature silver birch were present.</p>
11	<p>Woodland. Small area of open mature silver birch woodland. Ground flora dominated by bracken, bell heather, brambles (R), wavy hair-grass (R) and ragwort (O). Area is predominately shady sun spots are dominated by spear thistle, Yorkshire fog (<i>Holcus lanatus</i>), dandelion, soft-rush and ragwort.</p>	

TN	Description
12	 <p>Close to active crush area vegetation is covered by dense layer of dust, ground flora increasingly dominated by grasses and nettles but other species include stitchwort species (<i>Stellaria spp</i>), Yorkshire fog, wavy hair-grass, scarlet pimpernel (<i>Anagallis arvensis</i>), daisy (<i>Bellis perennis</i>), ragwort and creeping buttercup (<i>Ranunculus repens</i>). Further from site are mature pine and silver birch (dense).</p>
13	<p>Narrow band of immature silver birch to four metres in height. Ground flora dominated by bell heather, grasses including wavy hair-grass, tufted hair-grass and creeping bent, heath bedstraw (<i>Galium saxatile</i>), creeping cinquefoil, brambles. Nettles are also present in pockets these are dominant but generally are only rare.</p> <p>The screening bund to the south is generally devoid of vegetation, where present includes occasional wavy hair-grass, spear thistle, sheep's sorrel (<i>Rumex acetosella</i>) and bracken.</p>
14	<p>Area with brambles and grasses dominating. Other species of disturbance such as nettles are also present. Others include brambles, yarrow (R), cat's ear (F), ragwort (R-O), common eyebright (<i>Euphrasia nemorosa</i>) (R), creeping cinquefoil (O), immature rowan, bugloss (<i>Anchusa arvensis</i>), hedge woundwort (<i>Stachys sylvatica</i>) and bird's-foot-trefoil.</p>
15	<p>Ruderal species dominate including nettles, spear thistle, brambles, honeysuckle, bracken, stichwort spp, hogweed, Yorkshire fog, perennial rye grass and ribwort plantain.</p>

TN	Description
16	 <p data-bbox="839 465 1337 629">Open area of grassland species present included yarrow, birds-foot-trefoil, cat's-ear, hogweed, fat-hen (<i>Chenopodium album</i>), perforate St John's-wort (<i>Hypericum perforatum</i>) and common knapweed (<i>Centaurea nigra</i>).</p> <p data-bbox="839 667 1337 750">Also present was a small section of stagnant ditch where dock and common reed (<i>Phragmites australis</i>) were rare.</p>

3.6 Protected and Notable Flora

No protected or notable flora were observed during the Extended Phase I survey.

A range of protected and notable species have been recorded from the 2km search area but none have been recorded from the application site itself nor from within the 1km grid square which includes the application site.

The application site itself is composed of a concrete pad, buildings and isolated patches and individual plants of a pioneer nature. The site therefore does not offer many opportunities for colonisation by protected or notable flora.

Rhodendrons were identified within the study area but not within the application site itself. It is not known if they belong to either of the two subspecies listed on the amended Schedule 9 of the Wildlife and Countryside Act 1981. However, they would not be impacted or disturb by the proposals contained within this planning application.

No further notable, rare or legally protected flora species were recorded from the study area during survey.

3.7 Protected and Notable Fauna

Habitats within the study area have the potential to support certain faunal groups, including protected and notable species, which are discussed in more detail below.

3.7.1 Bats

No records of bats were provided by HBIC within the application site itself. However, four species of bats have previously been recorded within 2km of the study area, as follows:

- Bat species – unidentified;
- pipistrelle (*Pipistrellus* spp.);
- brown long-eared bat (*Plecotus auritus*); and
- serotine (*Eptesicus serotinus*).

The study area includes areas which offer some suitable habitat for foraging and commuting bats, however these are not within the application site itself. The application site includes two buildings – one an open metal workshop (Figure 1) and the other offices (Figure 2).

Following a detailed inspection as part of the bat survey the buildings were considered to offer low – negligible or negligible potential for bats.



Figure 1: Workshop building to be retained

The workshop building is to remain intact and undisturbed as part of this current planning permission. Therefore the potential for this building to support bats is not considered further in this assessment.



Figure 2: Current Offices at Eversley Haulage Park

The current office buildings are a temporary building. The building, as can be seen in Figure 2, has a flat roof, with guttering around the edge. In addition a fascia board is also present which can be seen in Figure 3 below.



Figure 3: Close-up of the roof line of the office building to be demolished

A detailed bat survey, including a building inspection and dusk emergence and dawn re-entry surveys, was undertaken on 21st and 22nd September 2010. No bats were observed emerging or re-entering the buildings within the application site. Two noctule (*Nyctalus noctula*) passes and one soprano pipistrelle (*Pipistrellus pygmaeus*) pass were heard during the surveys, although none were recorded from within the application site.

Based on the building inspection and the bat activity surveys the application site is evaluated as being of low conservation value for bats and is not likely to be of importance for individual or groups of bats; it is therefore valued "at within the zone of immediate influence only".

3.7.2 Badger

Only one record for badger (*Meles meles*) was provided by HBIC within the 2km study area, this being from 2km south-west of the application site.

Detailed surveys for badgers were not undertaken; no signs of badger activity such as setts, latrines, badger hairs or classical foraging signs were observed during the Extended Phase I survey. The proposed application does not include a requirement to undertake any works outside of the current site. Indeed the application site itself is effectively a concrete pad and as such offers almost no opportunities for badgers to establish setts or forage.

3.7.3 Otter

No records of otter (*Lutra lutra*) were provided by HBIC within 2km of the application site.

No specific surveys for otter were undertaken; no field signs of otter activity such as otter spraint or holts were observed during the Extended Phase I survey.

There are no waterbodies within the application site itself. There is a small water filled ditch adjacent to the application site but this is very small and appears to arise from close to the application site. It is therefore isolated from other watercourses, the closest of which is 800m from the site through an area of active quarrying and mixed plantation.

The application site is considered to offer no opportunities for otter activity and the species is not considered to be present at this time.

3.7.4 Water Vole

No records of water vole (*Arvicola amphibius*) were provided by HBIC within 2km of the study area.

A detailed survey for water voles was not undertaken; no field signs such as latrines or burrows were observed during the Extended Phase I survey.

There are no waterbodies within the application site itself. There is a small water filled ditch adjacent to the application site but as stated above this is very small and appears to arise from close to the application site. It is therefore isolated from other watercourses, the closest of which is 800m from the site through an area of active quarrying and mixed plantation.

The application site is considered to offer no opportunities for water vole activity and the species is not considered to be present at this time.

3.7.5 Amphibians

No records for great crested newt (*Triturus cristatus*) were provided by HBIC within 2km of the site. Records were supplied for common toad (*Bufo bufo*) from 500m south-east of the application site.

There are no waterbodies within the application site itself. The application site itself is a concrete pad and therefore offers little or no opportunity for use by great crested newts or other amphibians. The closest waterbody is 800m west of the application site and is separated from the application site by an active quarry and mixed plantation woodland. There is one small stagnant ditch adjacent to the application site but this is considered to offer only limited opportunities for amphibians especially great crested newts given its distance from the nearest pond, its size and general absence of aquatic and marginal flora. There are no other waterbodies within 250m⁹ of the application site.

It is therefore considered that the application site offers no opportunities for great crested newts or any other species of amphibians either for aquatic or terrestrial life stages.

3.7.6 Reptiles

A number of records were received from HBIC for slow worm (*Anguis fragilis*) (1km north-east of the application site), grass snake (*Natrix natrix*) (1km west of the application site), adder (*Vipera berus*) (0.75km north-east of the application site), common lizard (*Zootoca vivipara*) (0.25km south-east of the application site). Records for smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*), available from the National Biodiversity Network gateway (NBN), indicate that the closest records were 2km away for smooth snake and 6km for sand lizard. These species are therefore considered unlikely to be utilising habitat within the application site itself.

Common reptile species are likely to be using habitats surrounding the application site.

⁹ English Nature. 2001 *Great Crested Newt Mitigation Guidelines*.

The habitats within the application site are restricted to isolated patches of plants growing on a concrete pad. This type of habitat is unsuitable for reptiles to use for foraging or breeding but could be used on an occasional basis for basking. The boundary of the application site is predominately composed of solid fencing which restricts access further. Therefore, the application site is considered to offer only limited potential for use by reptiles.

3.7.7 Birds

Desktop data information provided by HBIC and from Natural England has indicated the presence of number of bird species within the 2km search area. Only those species listed as being on the RSPB Birds of Conservation Concern (BoCC) Red List, Hampshire BAP, UKBAP or Schedule 1 of the Wildlife and Countryside Act are listed in Table 4 below.

Table 4
Birds of Conservation Concern recorded within 2km search area

Species	Scientific Name	Conservation status ¹⁰
Northern goshawk	<i>Accipiter gentilis</i>	Schedule 1
Reed Warbler	<i>Acrocephalus scirpaceus</i>	HBAP
Skylark	<i>Alauda arvensis</i>	BOCC Red; UKBAP; HBAP
Kingfisher	<i>Alcedo atthis</i>	Schedule 1
White-fronted goose	<i>Anser albifrons</i>	HBAP
Tree pipit	<i>Anthus trivialis</i>	UKBAP
Nightjar	<i>Caprimulgus europaeus</i>	BOCC Red; UKBAP HBAP
Lesser redpoll	<i>Carduelis cabaret</i>	UKBAP
Linnet	<i>Carduelis cannabina</i>	BOCC Red; UKBAP; HBAP
Ringed plover	<i>Charadrius dubius</i>	Schedule 1
Hen harrier	<i>Circus cyaneus</i>	Schedule 1; BOCC Red; HBAP
Hawfinch	<i>Coccothraustes coccothraustes</i>	UKBAP; HBAP
Common cuckoo	<i>Cuculus canorus</i>	UKBAP
Lesser spotted woodpecker	<i>Dendrocopos minor</i>	BOCC Red; UKBAP; HBAP
Corn bunting	<i>Emberiza calandra</i>	BOCC Red;

¹⁰ Schedule 1 – birds listed on Schedule 1 of the Wildlife & Countryside Act 1981; BOCC Red – RSPB Birds of Conservation concern red list, UKBAP – UK Biodiversity Action Plan species; HBAP – Hampshire Biodiversity Action Plan species.

Species	Scientific Name	Conservation status ¹⁰
		UKBAP; HBAP
Yellowhammer	<i>Emberiza citronella</i>	BOCC Red; UKBAP
Reed bunting	<i>Emberiza schoeniclus</i>	BOCC Red; UKBAP; HBAP
Peregrine falcon	<i>Falco peregrines</i>	Schedule 1
Hobby	<i>Falco subbuteo</i>	HBAP; Schedule 1
Brambling	<i>Fringila montifringilla</i>	Schedule 1
Snipe	<i>Gallinago gallinago</i>	HBAP
Common grasshopper warbler	<i>Locustella naevia</i>	BOCC Red; UKBAP; HBAP
Woodlark	<i>Lullula arborea</i>	Schedule 1; BOCC Red; UKBAP; HBAP
Nightingale	<i>Luscinia megarhynchos</i>	HBAP
Goosander	<i>Mergus merganser</i>	HBAP
Red kite	<i>Milvus milvus</i>	Schedule 1; HBAP
Yellow wagtail	<i>Motacilla flava</i>	HBAP
Spotted flycatcher	<i>Muscicapa striata</i>	BOCC Red; UKBAP; HBAP
Whimbrel	<i>Numenius phaeopus</i>	Schedule 1
Osprey	<i>Pandion haliaetus</i>	Schedule 1
House sparrow	<i>Passer domesticus</i>	BOCC Red; UKBAP
Tree sparrow	<i>Passer montanus</i>	BOCC Red; UKBAP; HBAP
Grey partridge	<i>Perdix perdix</i>	BOCC Red; UKBAP; HBAP
Honey buzzard	<i>Pernis apivorus</i>	HBAP Schedule 1
Ruff	<i>Philmachus pugnax</i>	Schedule 1
Black redstart	<i>Phoenicurus ochruros</i>	Schedule 1
Wood warbler	<i>Phylloscopus sibilatrix</i>	UKBAP
Golden plover	<i>Pluvialis apricaria</i>	HBAP

Species	Scientific Name	Conservation status ¹⁰
Marsh tit	<i>Poecile palustris</i>	BOCC Red UKBAP
Hedge accentor	<i>Prunella modularis</i>	UKBAP
Bullfinch	<i>Pyrrhula pyrrhula</i>	BOCC Red; UKBAP; HBAP
Firecrest	<i>Rgulus ignicapilla</i>	HBAP; Schedule 1
Whitchat	<i>Saxicola rubetra</i>	HABP
Turtle dove	<i>Strptopeilia turtur</i>	BOCC Red; UKBAP; HBAP
Starling	<i>Sturnus vulgaris</i>	BOCC Red; UKBAP
Dartford warbler	<i>Sylvia undata</i>	HBAP; Schedule 1
Green sandpiper	<i>Tringa ochropus</i>	Schedule 1
Redshank	<i>Tringa tetanus</i>	HBAP
Redwing	<i>Turdus iliacus</i>	Schedule 1
Song thrush	<i>Turdus philomelos</i>	BOCC Red; UKBAP; HBAP
Field fare	<i>Turdus pilaris</i>	Schedule 1
Ring ouzel	<i>Turdus torquatus</i>	BOCC Red; UKBAP
Barn owl	<i>Tyto alba</i>	Schedule 1
Northern lapwing	<i>Vanellus vanellus</i>	UKBAP; HBAP

A total of 55 birds of conservation concern have been recorded from within the 2km search area from records provided HBIC. None of these species has been recorded from the application site itself.

The 2km search area also supports records of the three internationally important populations listed on Annex 1 of the European Birds Directive namely Dartford Warbler, Woodlark and Nightjar. It is because of these species that Thames Basin Heaths SPA has been designated. Data provided by Natural England¹¹ gained from 2Js Ecology indicated that in 2009 there were 21 pairs of nightjar, 1 pair of Dartford warbler and 18 pairs of woodlark. In 2008 there were 21 pairs of nightjar, 17 pairs of Dartford warbler and 13 pairs of woodlark. Castle Bottom, Yateley & Hawley SSSI, the closest component part of the SPA has a higher

¹¹ Supplied by Cressida Wheelwright of Natural England's local area office.

density of nightjars and lower densities of woodlark and Dartford warbler in 2004 than the average for all the component SSSIs¹².

The application site itself offers almost no potential for use by birds either for breeding, feeding or roosting due to the absence of suitable habitat. Buildings offer limited potential for roosting or nesting depending on the species of bird. Plantation and mixed woodland, heathland and areas of recently planted woodland outside of the application site provide suitable breeding, feeding and roosting habitat for a range of bird species¹³, including those which are of conservation concern.

3.7.8 Terrestrial Invertebrates

A number of records of protected and notable species of invertebrate have been provided by HBIC for the 2km search area, a full list is provided in Appendix 1. None of these species have been recorded from within the application site itself or within the 1km grid square in which the application site is located.

The application site is a concrete pad with buildings on it; vegetation is limited to isolated plants of a pioneer nature. The site therefore offers only limited potential for use by terrestrial invertebrates.

3.8 Predicted Trends

In the absence of any development or management it is predicted that the application site itself would continue to operate in its current state, with the majority of the site being hard standing. Habitats surrounding the application site would continue to be worked for quarrying, restored via the creation of plantation woodland or left as mature plantation woodland. In the short to medium term the ecological value of the application site is highly unlikely to change significantly.

¹² Eyre, J. 2006 *The Birds of Gorrick Plantation – A report for Wokingham District Council*. 2Js Ecology.

¹³ All bird species and their nests are protected from damage under the Wildlife and Countryside Act 1981 (as amended), during the nesting period.

4.0 NATURE CONSERVATION EVALUATION

To evaluate the significance of impacts from a development it is important to establish the value, or sensitivity, of the ecological feature upon which the effect is to occur. This section uses published criteria and professional judgement to value the individual ecological receptors that have been identified during baseline data collection.

4.1 Designated Sites within the Zone of Influence

Baseline data collection has identified one statutory designated site of international importance (the SPA), two of national importance (the SSSIs) and one of county importance (the NNR) within 2km of the application site. Thames Basin Heaths SPA, Castle Bottom to Yateley & Hawley Commons SSSI and Bramshill SSSI are adjacent to the application site, Castle Bottom NNR is 480m north-east of the application site and all are considered as within the zone of influence of the proposed scheme.

Hampshire County Council (HCC) has identified a total of sixteen local nature conservation sites (SINCs) these are of county value. The closest of these sites, Blackbushe Airport SINC, is 820m from the application site. The nature of the development at the application site is such that it is considered unlikely that any of the SINCs are within the zone of influence of the proposed scheme and therefore are not considered further by this assessment.

4.2 Non-Designated Ecological Receptors within the Zone of Influence

Tables 5 and 6 provides a summary of the ecological receptors identified through baseline studies and presents a valuation of each receptor based upon published criteria and comparison of the feature in its local context. Table 5 deals with habitat receptors and Table 6 deals with species populations and assemblages.

Table 5
Valued Ecological Receptors – Sites and Habitat Features

Geographical Frame of Reference	Site / Feature at this Value	Location	Reason for Importance
International	Thames Basin Heaths SPA	Surrounding application site	Internationally important populations of Dartford Warbler, woodlark and nightjar.
National	Castle Bottom to Yateley & Hawley Commons SSSI	Surrounding application site	Heathland and young conifer plantation which support internationally important populations of Dartford warbler, woodlark and nightjar.
	Bramshill SSSI	Immediately west of application site	Designated because of its shallow acid ponds and mire. Habitat for nightjar, woodlark and Dartford warbler. Also assemblages of invertebrates and nationally scarce plants. The site also supports small breeding populations of hobby and little ringed plover.
	Castle Bottom NNR	480m north-east of site	Containing one of the most important valley mires in southern England,

Geographical Frame of Reference	Site / Feature at this Value	Location	Reason for Importance
		boundary	with associated heathland and woodland habitats. It is within Thames Basins Heaths SPA and supports breeding bird populations
County	None	None	None
District	None	None	None
Parish	None	None	None

The above table has identified all significant habitat features within the study area. Other habitats, i.e., buildings, hardstanding, bare operational quarried areas, ephemeral/short perennial, coniferous plantation, deciduous plantation, ruderal, small fragment of heath and ditches are assessed as being of less than parish value and are not considered further by this assessment.

No detailed species surveys have been undertaken so the ecological receptors values are based on information available from the desktop data search from HBIC and knowledge of the habitats surrounding the application site.

**Table 6
Valued Ecological Receptors - Species and Taxonomic Assemblages**

Geographical Frame of Reference	Species population or assemblage at this Value	Location (Major Habitats)	Reason for Importance
International	Annex I Birds located within Thames Basin Heaths SPA	Immediate Zone of influence Habitat within Thames Basin Heaths SPA and component parts	Breeding bird assemblage of Dartford warbler, woodlark and nightjar. None recorded from the application site itself.
National	None	None	None
Regional	None	None	None
County	Breeding birds	Immediate Influence Heath, woodland and cleared plantation mixed woodland, deciduous woodland	Of the 55 birds of conservation concern recorded, 28 are listed on the HBAP. None recorded from the application site itself.
Parish	None	None	None

Results for the desktop data search have indicated that it is unlikely that the following species are present in ecologically significant numbers: otters, water vole, great crested

newts, bats, invertebrate assemblage and badgers. These fauna groups are not considered further by this assessment.

4.3 Summary

Designated sites; non-designated sites; habitats and species populations that have been identified as important ecological receptors within the zone of influence of the proposed development are outlined in the tables above. These ecological receptors have been summarised into the following groups for the remainder of this assessment:

- Thames Basin Heaths SPA;
- Castle Bottom to Yateley & Hawley Commons SSSI;
- Bramshill SSSI;
- Castle Bottom NNR;
- Annex I birds (Dartford warbler, woodlark and nightjar); and
- Breeding bird assemblage.

All other ecological receptors of parish value or above within the zone of influence of the survey area are highly unlikely to be affected by the proposed development and will therefore not be considered further in this assessment.

5.0 ECOLOGICAL IMPACT ASSESSMENT

5.1 Development Proposals

The application site currently has temporary planning permission in respect of units 1, 2, 3, 4, & 8. Permitted activities are waste management related and include skip storage, aggregate and inert material crushing and screening and the storage of construction and demolition waste. The current application seeks to revise the internal layout of the application site to allow operations to occur in a safer and more efficient way. In addition the application seeks to extend operations into Unit 5 to create additional skip storage space and the creation of a new waste reception building. This allows some of the current waste management operations to take place under cover.

5.2 Identification of Potential Impacts

The following potential impacts have been identified and are discussed below.

- habitat loss, fragmentation and isolation through land-take;
- direct effects upon flora and fauna through habitat loss,
- direct and indirect effects upon flora and fauna through fragmentation and isolation, including effects upon protected and notable species;
- noise disturbance;
- visual disturbance, including lighting;
- impacts resulting from changes in air quality, e.g. dust, pollutants;
- alterations to surface water flow and quality;
- traffic;
- indirect impacts on designated sites within the zone of influence;
- cumulative impacts.

5.3 Habitat Loss, Fragmentation and Isolation through Land-take

Habitat loss involves the direct destruction or physical take-up of vegetation, or other structures of conservation interest, such as woodland, hedgerow or grassland. Habitat loss may also occur as a result of a change in land or water management, for instance the drying-up of ponds or successional events leading to a change in habitat type.

Habitat loss can result in the direct loss of individuals or populations of plant or animal species. It may also cause other populations to become demographically unstable or unsustainable, due to loss of prey species or habitat niches.

The proposed development at Eversley Haulage Park would not include the extension of the site beyond the existing concrete pad and therefore there would be no increase in land-take. There would therefore be no loss of habitat in respect of the Thames Basin Heaths SPA or the surrounding SSSIs (Castle Bottom to Yateley & Hawley Commons and Bramshill).

5.4 Direct and Indirect Effects upon Valued Flora and Fauna through Habitat Loss, Fragmentation & Isolation

As stated above the current application does not seek to extend the site beyond the existing concrete pad and therefore there would be no loss of habitat due to this development. This also means that there would be no increase or change in any habitat fragmentation or

isolation of areas due to this development. This potential impact is therefore not considered further in this assessment.

5.5 Noise and Visual Disturbance

Noise and visual disturbance may occur as a result of plant operation, traffic movements, crushing of waste material and movements of site personnel associated with the waste sorting and crushing within the application area.

Different types of disturbance could affect the Annex I and bird assemblages that occur within these two SSSIs and SPA. The effects of disturbance upon species are complex, because species show differing responses to disturbance and in many cases they are able to habituate to low levels of disturbance. In general, the proximity to source, intensity, duration and frequency of any disturbance are the main factors that will affect the severity of an impact.

Generally speaking, secretive or shy bird species are likely to be more vulnerable to noise and human disturbance. For example, an analysis of the responses of waders and wildfowl to disturbance found that a passive, low-level and continuous disturbance is likely to lead to habituation and active, high level and continuous disturbance is likely to lead to the displacement of many bird species from the disturbed area, leaving only very tolerant species¹⁴. Overall, breeding birds are considered to be moderately sensitive to human disturbance and high volume, frequent or continuous noise disturbance.

Noise Disturbance

The noise generated within the site will be the result of the operation of site plant and machinery and the movement of vehicles, in addition to external noises, such as neighbouring roads, quarry traffic and aircraft. The majority of noise emanating from the site result from crushing plant and are continuous during the hours of operation. Continuous, low-level noise has been shown to be less disturbing than occasional loud noises. The application site has a concrete wall to the south, a sleeper wall as the eastern boundary and the western boundary is screened by the containers stored at the adjacent unit these provide a degree of noise reduction beyond the boundaries of the facility. The northern boundary is marked by continuous wall which offers some noise attenuation.

The application site is located in an area affected by road traffic noise, predominately from the A327 and additional noise generated operations associated with the neighbouring quarries. Research has shown that intense noise sources, such as busy roads, may cause disturbance to breeding birds up to 1km away¹⁵.

EA guidance suggests that in the majority of waste management facilities, the effects of noise disturbance upon birds would be attenuated to background levels at distances greater than 500 m from the installation boundary or access roads. Further detailed assessment of noise disturbance would be considered where an intense noise source was identified as

¹⁴ Hill, D. *et al.* (1997) Bird Disturbance. *Improving the quality and utility of disturbance research*. Journal of Applied Ecology. 34, 275-288, BES

¹⁵ Reijnen, Foppen, Veebaas (1997) Disturbance by traffic of breeding birds: evaluation of the effect and consideration in planning and managing road corridors. *Biodiversity and Conservation* 6, pp 567-581

likely to occur on a regular basis within a European Site at levels above the World Health Organisation guidelines¹⁶ of 55 dB_{Aeq 1hr}.

A noise assessment¹⁷ from 2004 undertaken at the application site indicated that the surrounding area has elevated levels of background noise, attributed to a range of different operations within the vicinity. Noise within the site and at the site boundary was similar to that of heavy engineering operations; at 120m from the site boundary the noise levels were reduced although they remained above background levels. This would suggest that there is the potential for the exposure of the interest features of SSSIs to noise from the application site.

Despite raised noise levels being measured at the application site boundary, EA guidance suggests that these noise levels would be attenuated back towards acceptable background levels within 500m of the installation boundary. Therefore only 5% of the total land area of Bramshill SSSI and Castle Bottom to Yateley & Hawley Commons SSSI (assuming a 500m radius of disturbance from a point source within the application site) would be exposed to elevated noise levels that could potentially be disturbing to bird fauna. In addition, over 50% of potential habitat for birds has already been removed as part of on-going quarrying activities.

However, the planning application is for the creation of a proposed waste reception building in which waste handling and sorting will occur. This would reduce the noise levels emitted from the site.

Given the current noise levels at the application site, the risk of an increased exposure to noise disturbance is assessed as being negligible.

Visual Disturbance

All activities will be undertaken within the existing site boundary and are predominately screened by the walls and containers which mark the site boundary and storage piles on the site. There will be no changes at the site boundary leading to potential visual disturbance.

There are no plans to alter the site boundary layout; therefore the risk of visual disturbance is assessed as negligible.

5.6 Changes in Air Quality – Dust

Background

Dust deposition upon soil substrates could adversely affect the soil chemistry within protected habitats. It is not considered that Annex I birds (Dartford Warbler, nightjar and woodlark) are sensitive to nutrient enrichment by dust deposition. It is considered that the enrichment of acidic soils, as a result of deposition of alkaline dusts, e.g. from concrete and other Ca-enriched substances, may have a negative effect upon the acidic habitat interest features, e.g. heathland, acid pools and valley bog and mire of neighbouring SSSIs. These habitats are considered to be moderately sensitive to enrichment as a result of dust deposition.

¹⁶ WHO "Environmental Health Criteria 12: Noise" as referred to in Mineral Planning Guidance 11: The control of Noise at Surface Mineral Workings (1998).

¹⁷ Noise Report (2004) Walker Beak Mason Technical Report 3260/2

The deposition of dust has the potential to create an impact on agricultural and ecological systems. This can result from the chemical or physical effects of particles on the vegetation surface or from changes in soil chemistry¹⁸. Fugitive dust from development sites is typically deposited within 100-200m of the source; the greatest proportion of which comprise larger particles (greater than 30 microns) is deposited within 100m. Where large amounts of dust are deposited on vegetation over a long time scale (a full growing season for example) there may be some adverse effects upon the plants' photosynthesis, respiration and transpiration. Furthermore, it can lead to phytotoxic gaseous or solid state pollutants penetrating plants; although these toxic effects are usually associated with highly alkaline or highly acid dusts that are typically derived from limestone quarries and coal workings. The overall effect of significant amounts of dust could be a decline in plant productivity, which may then have indirect effects on fauna. The amounts of dust deposited and its effects are also dependent upon weather conditions as in wet weather less dust will be generated and that which has been deposited upon foliage is likely to be washed off.

Site Specific Assessment

Bramshill SSSI and Castle Bottom to Yateley & Hawley Commons SSSI, are adjacent to the site. Analysis of wind conditions at the waste management facility¹⁹ show that the prevailing winds, will, the majority of the time, generally blow from the south and west. These wind directions blow away from Bramshill SSSI but towards Castle Bottom to Yateley & Hawley Commons SSSI. The actual amount of nutrient enriched dust reaching the SSSI will depend on the weather conditions at the time.

There is a potential for dust to be generated at the application site due to a number of activities within the site. However, it is the crushing of concrete, limestone and other Calcium-rich substrates which have the potential to generate nutrient enriched dust. The use of water sprays at the crusher and discharge conveyor will suppress dust at source and mitigate the potential release of nutrient enriched dust into surrounding areas.

The dust assessment^{Error! Bookmark not defined.} from 2004, the most up-to-date assessment for the application site, concluded that the "main potentially significant impact is on the neighbouring SSSIs". For the purpose of this study, the dust impact assessment is translated into a medium risk of exposure to nutrient enrichment from aerial deposition for Castle Bottom to Yateley & Hawley Commons SSSI as this site is adjacent to the eastern, northern and southern boundaries of the facility and in the direction of the prevailing wind. Bramshill SSSI is not in the prevailing wind direction, although it is adjacent to the western boundary of the facility and therefore it is assessed that the risk of exposure to nutrient enrichment would be low.

Other facilities, e.g. quarrying operations, within the vicinity of the application site have the potential to generate dusts that may have a negative effect upon the interest features of the SPA and surrounding SSSIs. Indeed there was clearly dust deposition from quarrying activities present on the road and verges close to the two quarries.

Research has shown that the majority of dust is deposited within 200m of the source^{Error! Bookmark not defined.}. Using this research as a benchmark, it has been calculated that approximately 13 hectares, or <1% of the total SSSI-designated habitat area would be adversely affected by dust deposition in the absence of any additional mitigation measures. In addition, it should be noted that the approximately half of habitat within the SSSIs within

¹⁸ Farmer, A.M., The Effects of Dust on Vegetation and its Consequences for Nature Conservation in Great Britain, Nature Conservancy Council, CSD Note Number 57, 1991

200m of the application site is either existing quarrying, recently cleared for quarrying or recently ceased to be used for active quarrying and as such does not support the habitats and fauna for which the SSSIs were designated.

Dust suppression measures in place include dampening stockpiles and haul routes in dry weather, the routing of exiting vehicles via wheelwash facilities and speed restrictions are also in place.

Vehicles would continue to reach and leave the site via the existing route. All material arrives and leaves the site in containers, meaning there is no risk of material being deposited within the SSSIs or SPA from vehicles associated with the site.

The proposal is for a new purpose built building to sort and handle waste this will assist in reducing the level of dust released from the site. Part of the crushing and screening of waste would occur in the open air inside Unit 5. However, the levels of dust generated would not be above that which is currently occurring as there is no anticipated increase in material accepted at the site.

With the creation of a new building for the sorting and screening of waste it is considered that therefore, the exposure of SSSI habitats to dust is not considered to represent a significant risk to the integrity of the protected sites.

Dust suppression measures are controlled under Environment Agency Air Pollution consent and it is considered that the dust mitigation measures outlined in the ES would reduce the amount of dust that actually leaves the site to a lower level than that which currently exists.

5.7 Alterations to Surface Water Flow and Quality

Currently clean yard area surface water drains to the ditch on the boundary of the application site and heads south under the site entrance road and then follows the road south towards the A30. Other surface water drains to a sealed sump and is tankered off site. Discharge rates and quality would no change from current levels it is therefore considered that there would be no impact in terms of increased surface water flow rates or decreased surface water quality.

5.8 Traffic

The development proposals are to maintain the current level of waste accepted at the site with respect to road traffic movements. The Waste Management Licence restricted the amount of waste that can be accepted at the site to 120,000 tonnes per annum. The number of vehicle movements is due to remain the same as current levels; they will continue to reach the site from south of the application site along the A327 with the waste arriving and leaving the site in containers.

No impacts are predicted from traffic due to no net increase in traffic movements because of this application.

5.9 In Combination Effects

There is potential for non-significant impacts from one development to aggregate with other similar impacts from nearby developments to create a significant impact. In this instance, the proximity of the site to the Bramshill and Eversley Quarries has the potential to add to the amount of dust and noise generated in the SPA/SSSI surrounding the application site. However, the haulage park is already an active site and the current planning application

seeks to provide a building in which the sorting would occur. There would therefore be no increase in volume of waste accepted at the site and therefore there would be no increased impact in terms of volume of dust or noise generated.

6.0 AVOIDANCE, MITIGATION, AND COMPENSATION MEASURES

In general, measures to reduce adverse effects on valued ecological receptors have been designed into the development scheme and are described above.

Wherever possible, avoidance measures have been taken; e.g. avoiding direct impacts through minimising land take and disturbance in sensitive areas and avoiding particular operations in sensitive seasons.

Species specific mitigation for protected species is not required as there is no indication that they are present within the application site or would be impacted on. There is potential that birds could use existing buildings for nesting, it is therefore recommended that buildings are moved or demolished outside of the nesting bird season (March – end July inclusive). Otherwise the buildings should be only demolished under supervision of a suitability qualified ecologist.

There would be no loss of habitat from within any of the SSSIs or the SPA.

6.1 Recommendations

There is evidence of dust deposition occurring in the immediate 20-30m of the crusher and wood shredder therefore consideration should be given to dampening with high pressure low volume water sprays of material prior and whilst it is crushed/shredded and covering hoppers and conveyor belts to minimise the risk of any dust being released beyond the boundary of the application site. Stock pile height should be kept below that of the external walls and sprayed regularly to suppress dust, should the material within the pile be below 3mm in diameter..

In addition, it is recommended that the effectiveness of dust suppression methods employed for the crusher and the wood shredder on habitats immediately beyond the boundary of the application site should be regularly monitored, by the use of deposition gauges²⁰. The methodologies or type of suppression used should be amended if these are found to no longer be effective at minimising any dust deposition beyond the application site boundary. Consideration should be given to use of silt separators of other type of SUDS scheme as the ditch in which the surface water drains into is heavily silted and stagnant.

The incorporation of such recommendations for dust deposition and surface water run-off quality would assist in the continued protection of the features within the SSSIs and SPA for which the sites have been designated.

²⁰ Process Guidance Note 3/16 (04) 2004 *Secretary of State's Guidance for Mobile Crushing and Screening*.

7.0 LEGISLATIVE AND POLICY CONTEXT

This section summarises the key legislation and policies relevant to ecology and nature conservation.

7.1 Legislation

The key wildlife legislation underpinning the conservation of habitats and species are summarised below:

7.1.1 *The Wildlife and Countryside Act 1981 (as amended).*

The Wildlife and Countryside Act 1981 is the primary legislation in Great Britain for the protection of flora, fauna and the countryside. This legislation is the means by which the 'Bern Convention' and the European Union Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/EEC) are implemented in Great Britain. The Act also empowers Natural England to protect habitats of national importance through the statutory designation of Sites of Special Scientific Interest (SSSIs) for features of interest.

7.1.2 *The Conservation of Habitats and Species Regulations 2010 (as amended).*

The Conservation of Habitats and Species Regulations 2010 transpose the Council Directive on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law and provides for the designation and protection of 'European sites' including Special Areas of Conservation (SAC) and Special Protection Area (SPA), the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites. The regulations introduce a review procedure for plans and projects likely to significantly affect a European site, and licensing requirements for developments that may affect a European protected species for example, bats, otter and great crested newt. In 2007, an amendment to the regulations increased the legal protection given to protected species in England and Wales and removed the exemption from an offence if 'actions were an incidental result of a lawful operation and could not reasonably have been avoided'.

7.1.3 *Protection of Badgers Act 1992*

Badgers are protected under the Protection of Badgers Act 1992 making it an offence to knowingly kill, capture, disturb or injure and individual animal or intentionally damage, destroy or obstruct an area used for breeding, resting or shelter. A licence is required for heavy machinery work within 30m, light machinery work within 20m and had digging within 10m of a badger sett.

7.1.4 *Reptiles*

All terrestrial native reptiles are protected under the Wildlife and Countryside Act 1981 (as amended), making it an offence to intentionally, deliberately or recklessly kill or injure any British reptile. The most common reptile species comprising grass snake (*Natrix natrix*), adder (*Vipera berus*), slow worm (*Anguis fragilis*), and common lizard (*Zootaca vivipara*) are protected under Section 9 (Parts 1 and 5) against intentional killing and injury, and sale.

Only the rare smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*), with restricted distribution, are afforded full protection under all parts of Section 9 of the Wildlife and Countryside Act 1981.

7.1.5 Breeding Birds

Birds are protected under the Wildlife and Countryside Act 1981, which prohibits the intentional killing, injuring or taking of any wild bird and the taking, damaging or destroying of the nest (whilst being built or in use) or eggs. It also prohibits possession of wild birds (dead or alive) or their eggs. There are additional penalties for offences relating to birds on schedule 1; in addition, it is an offence to disturb schedule 1 birds at the nest or the dependent young of schedule 1 birds.

7.2 Planning Policies

Nationally, the Government's commitment to sustainable development and conserving the diversity of wildlife is set out in a number of Planning Policy Guidance (PPG)/Planning Policy Statement (PPS) Notes that include PPS9: Biodiversity and Geological Conservation. In addition, the UK Biodiversity Action Plan (UK BAP) identifies habitats and species on a UK wide basis that require special consideration for protection, enhancement and expansion.

These are summarised below:

7.2.1 Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation.

PPS9: Biodiversity and Geological Conservation was published in August 2005 and is accompanied by Government Circular 06/05: Biodiversity and Geological Conservation which covers relevant legislative provisions at the international and national level that can impact on planning decisions affecting biodiversity and geological conservation issues, and Good Practice Guidance. PPS9 sets out the Government's broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system, and its proposed planning policies that will help deliver these objectives. These policies reflect statutory obligations for nature conservation.

7.2.2 UK and Local Biodiversity Action Plans.

The UK, along with 150 other countries, signed up to the Convention on Biological Diversity in 1992, during the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992. The aims of the plan are: "To conserve and enhance biological diversity within the UK, and to contribute to the conservation of global biodiversity through all appropriate mechanisms ". The UK BAP identifies a number of Priority Habitats and Species and outlines UK Habitat Action Plans (HAPs) and Species Action Plans (SAPs) to conserve them. To implement the UK BAP, a number of Local Biodiversity Action Plans (LBAPs) have been produced. This plan implements individual HAPs and SAPs at the local level.

A number of regional and local policies relating to the protection and enhancement of the natural environment, are contained in the Hampshire Minerals and Waste Core Strategy Development Plan and Hart District Local Plan.

7.2.3 Hampshire Minerals and Waste Core Strategy Development Plan Document 2007.

The Hampshire Minerals and Waste Core Strategy 2007 contains the following policies, which are considered relevant to the protection and enhancement of the natural environment; namely policies **DC2 - Sites with international and national designations** and **DC7 Biodiversity**.

Policy DC2 states that minerals and waste development, which is likely to prejudice the purpose of the following designated sites and their settings, will not be permitted unless the reasons for development outweigh the likely adverse impact, taking into account the requirements of relevant legislation and guidance. Policy DC7 states that permission will only be granted for waste developments if due regard is given to the impact on biodiversity.

7.2.4 Hart District Local Plan (Replacement (1996-2006) adopted Dec 2002 (Saved Policies))

The Hart District Local Plan 2002 contains the following policies, which are considered relevant to the protection and enhancement of the natural environment; namely policy **CON1 Nature Conservation – European Designations & CON2 Nature Conservation – National Designations** which states that development which will adversely affect a European designated site e.g. a Special Protection Area (SPA) will not be permitted.

8.0 RESIDUAL IMPACT ASSESSMENT

8.1 Introduction and Approach

The predicted impacts of the proposed development, following mitigation, *i.e.* the residual impacts, are assessed using the following criteria, based upon recent guidance provided by the IEEM.

To fully evaluate the effects of a predicted impact upon valued ecological receptors it is necessary to assess the significance of the impact upon that feature. Significance is assessed at the geographical scale at which the feature is considered important. For instance, the loss of the majority of a hedgerow resource within a site, assessed as being of local value, could be significant at the local scale. The loss of a small area of a nationally designated site may not be significant at a national level if the loss did not affect the integrity²¹ of the site. However, the loss may be significant at the county or local scale, if the features lost were rare in that geographical context. In most cases, the range of levels of significance is determined by careful consideration of factors such as the existing baseline, ecological context of proposed development area, predicted trends, background level of impacts, predictability of effects occurring and the likely effectiveness of the proposed mitigation measures.

Residual effects are only considered for those ecological features assessed as being of local or greater value. Features of less than local value are excluded from the assessment.

Table 1 shows the key considerations that have been taken into account in assessing residual impact and Table 7 shows predicted residual effects of the proposed development of the site. It is considered that no significant residual effects will occur as a result of the proposed development if the mitigation measures outlined above are implemented.

²¹Integrity can be defined as: *"the coherence of its ecological structure and function, across the whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it is classified"* PPG9 Box C10

Table 7
Summary of Residual Impact Assessment

Characterisation of Valued Ecological Receptor	Description of Potential Impacts	Characterisation of Potential Impacts	Significance of Impact if Unmitigated and Confidence Level	Proposed Mitigation and Compensation Measures	Residual Impact; Magnitude and Significance
Statutory Designations Thames Basin Heaths SPA	Habitat loss Loss and fragmentation of habitats, direct loss of species populations; reduction of carrying capacity; loss of resilience of ecosystems.	I-Negative impact II- Unlikely III-Direct IV-1 SPA, no loss V- None VI-N/A VII-N/A	No impact as no loss of habitat outside of the application boundary	None required	Not significant
	Statutory Designations Bramshill Quarry SSSI Castle Bottom to Yateley & Hawley Commons SSSI Castle Bottom NNR	Habitat loss Loss and fragmentation of habitats, direct loss of species populations; reduction of carrying capacity; loss of resilience of ecosystems.	I-Negative impact II- Unlikely III-Direct IV-2 SSSIs, no loss V- None VI-N/A VII-N/A	No impact as no loss of habitat outside of the application boundary	None required
National Value	Dust Deposition Ecological effects upon habitats within the SSSIs & NNR due to dust smothering or enrichment.	I-Negative impact II- Occurring III-Direct IV-2 SSSIs, 5% of habitat within the SSSIs V- Moderate VI-Temporary VII-Reversible	Current dust generation and deposition is ongoing, closest areas of habitat have been predominately stripped for quarrying. Dust deposition levels would not increase beyond current levels.	Creation of building within which waste handling and sorting would occur would minimise dust deposition levels further. Dust levels would not exceed current levels as waste type and volumes accepted would be the same as current.	Not significant Positive – minor significance

Characterisation of Valued Ecological Receptor	Description of Potential Impacts	Characterisation of Potential Impacts	Significance of Impact if Unmitigated and Confidence Level	Proposed Mitigation and Compensation Measures	Residual Impact; Magnitude and Significance
Birds Fifty five species of conservation concern within search area, including three Annex 1 species known to be breeding. None recorded within the application site.	Habitat loss Loss and fragmentation of habitats, direct loss of species populations; reduction of carrying capacity; loss of resilience of ecosystems or populations	I-Negative impact II- Unlikely III-Direct IV-2 SSSIs, no loss V- None VI-N/A VII-N/A	No impact as no loss of habitat outside of the application boundary	None required	Not significant
International - County Value					
	Noise Disturbance of bird species breeding within SPA/SSSIs due to noise generated in application site, areas of habitat becoming unsuitable for breeding and species being displaced.	I-Negative impact II- Occurring III-Direct IV-up to 55 species of birds, only those on the 2.5% of SPA/SSSI in zone of impact V- Moderate VI-Permanent VII-reversible	Current noise levels are on-going, closest areas of habitat for birds have been predominantly stripped for quarrying. Noise levels would not increase beyond current levels and indeed would be reduced.	Creation of building within which waste handling and sorting would occur. Noise levels would not exceed current levels as waste type and volumes accepted would be the same as current. Noise levels are likely to decrease as some waste handling and sorting would occur within a building.	Positive minor significance
			It is proposed to regularly monitor the air quality at the site by the use of deposition gauges and implement any necessary changes when required.		

9.0 CONCLUSION

The proposals to alter the existing site layout have the potential to have adverse ecological effects upon the flora and fauna present within the study area.

An Extended Phase I survey has been carried out within the application site and a 250m radius of the site, where access was possible. The impact assessment has been conducted following guidance published by the Institute of Ecology and Environmental Management and has been conducted by an experienced ecologist.

This report describes the current ecological baseline and has identified the following important ecological receptors:

- Thames Basin Heaths SPA;
- Bramshill Quarry SSSI and Castle Bottom to Yateley & Hawley Commons SSSI;
- Castle Bottom NNR;
- Annex I birds (Dartford Warbler, woodlark and nightjar); and
- Breeding bird assemblage.

All other ecological receptors identified were highly unlikely to be significantly affected by the proposed development and therefore have not been considered further in this assessment.

The impact assessment has identified and described potential impacts upon each important receptor and provided an outline of mitigation, compensation and enhancement measures that are proposed to reduce or offset adverse effects. This is summarised below:

Statutory Sites

The assessment has found no statutory designated sites would be significantly adversely affected by the proposals. No habitat loss from Thames Basin Heaths SPA, Bramshill Quarry SSSI or Castle Bottom to Yateley & Hawley Commons SSSI or Castle Bottom NNR therefore habitat loss is assessed as Not Significant.

No more than 5% of the habitat within the SSSIs/NNR has the potential to be affected by dust deposition. The construction of a building, in which some of the waste handling would be undertaken, means that there would be a decrease in the potential rate of dust deposition from the current rates. It is therefore concluded that the development would be of minor positive significance in the case of dust deposition.

Protected Species

Annex I birds and the general breeding bird assemblage were considered to be valued ecological receptors. The proposed development would not lead to the loss of any habitat potentially used by breeding birds; therefore habitat loss is assessed as Not Significant.

It is estimated that 2.5% of the SPA/SSSI has the potential to be impacted upon by noise emitted from Eversley Haulage Park; this may affect birds breeding within this habitat. The proposed development would not lead to an increase in noise emitted from the site; therefore the effect of noise disturbance is assessed as having a positive minor significance.

In the absence of mitigation, there is potential for legally protected species, including Annex I birds and breeding birds to be adversely affected by the proposals. However, mitigation

committed to as part of the development scheme and the fact that there would be no increase in levels or type of waste accepted at the site means that it is considered that there would be no risk of significant impact on the favourable conservation status of protected species identified in this assessment.

The ecological assessment has identified no residual impacts. There would be a minor positive impact in terms of a decrease in the likely volume of dust deposited on the SPA/SSSIs and NNR and the volume of noise generated by the site because of this development. . All other impacts are assessed as being Not Significant.

It is considered that this application is compliant with national planning policies, this issue is discussed in more detail in the Planning Supporting Statement, for which this EclA is an appendix.

10.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

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