



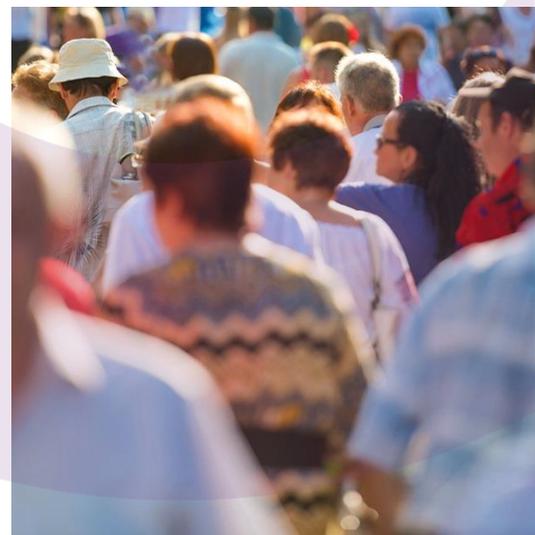
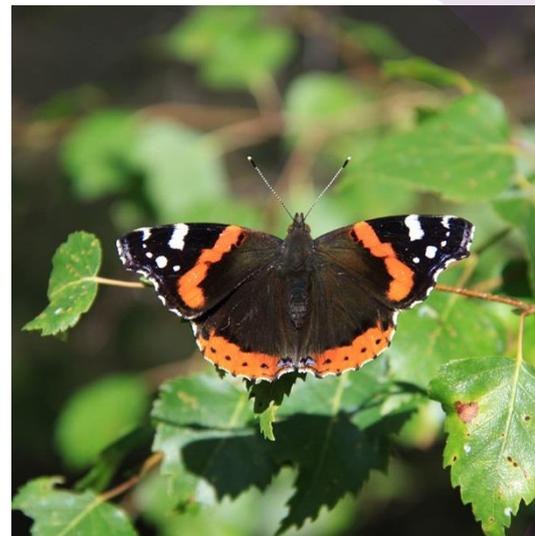
CHESTERFIELD
BOROUGH COUNCIL

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Chesterfield Borough Council

Local Plan for Chesterfield Borough: Pre-Submission Draft

Habitats Regulations Assessment



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1. Introduction

1.1 Overview

The Chesterfield Local Plan

Chesterfield Borough Council (the Council) is currently preparing a new Local Plan for Chesterfield Borough (the Local Plan). The Local Plan will set out the vision, objectives, planning policies and site allocations that will guide development in the Borough to 2033.

The first stage in the development of the Local Plan was the publication of the Chesterfield Borough Local Plan Consultation draft in January 2017. This included a number of strategic options concerning the quantum of land to be provided for housing and employment and the spatial distribution of development in the Borough. Following consultation, and an analysis of responses and further consultation on potential Gypsy and Traveller Sites in January 2018, the Council has prepared the Pre-Submission Local Plan in accordance with Regulation 19 of the Town and Country Planning Act (Local Planning) (England) Regulations 2012, which will be published for consultation in January 2019.

Wood (formerly Amec Foster Wheeler) has been commissioned by the Council to assist with the completion of a 'Habitats Regulations Assessment' of its Local Plan.

Habitats Regulations Assessment

Regulation 105 of the *Conservation of Habitats and Species Regulations 2017* (the 'Habitats Regulations') states that if a land-use plan is "(a) is likely to have a significant effect on a European site¹ or a European offshore marine site² (either alone or in combination with other plans or projects); and (b) is not directly connected with or necessary to the management of the site" then the plan-making authority must "...make an appropriate assessment of the implications for the site in view of that site's conservation objectives" before the plan is given effect.

The process by which Regulation 105 is met is known as Habitats Regulations Assessment (HRA)³. An HRA determines whether there will be any 'likely significant effects' (LSE) on any European site as a result of a plan's implementation (either on its own or 'in combination' with other plans or projects) and, if so, whether these effects will result in any adverse effects on site integrity. The Council has a statutory duty to prepare the Local Plan and is therefore the Competent Authority for an HRA.

¹ Strictly, 'European sites' are: any Special Area of Conservation (SAC) from the point at which the European Commission and the UK Government agree the site as a 'Site of Community Importance' (SCI); any classified Special Protection Area (SPA); any candidate SAC (cSAC); and (exceptionally) any other site or area that the Commission believes should be considered as an SAC but which has not been identified by the Government. However, the term is also commonly used when referring to potential SPAs (pSPAs), to which the provisions of Article 4(4) of Directive 2009/147/EC (the 'new wild birds directive') apply; and to possible SACs (pSACs) and listed Ramsar Sites, to which the provisions of the Habitats Regulations are applied a matter of Government policy (National Planning Policy Framework 2018 para. 176) when considering development proposals that may affect them. "European site" is therefore used in this report in its broadest sense, as an umbrella term for all of the above designated sites. Additional information on European site designations is provided in **Appendix A**.

² 'European offshore marine sites' are defined by Regulation 15 of *The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007* (as amended); these regulations cover waters (and hence sites) over 12 nautical miles from the coast.

³ The term 'Appropriate Assessment' has been historically used to describe the process of assessment; however, the process is now more accurately termed 'Habitats Regulations Assessment' (HRA), with the term 'Appropriate Assessment' limited to the specific stage within the process.

1.2 This Report

Regulation 105 essentially provides a test that the final plan must pass; there is no statutory requirement for HRA to be undertaken on draft plans or similar developmental stages (e.g. issues and options; preferred options). However, as with Sustainability Appraisal (SA), it is accepted best-practice for the HRA of strategic planning documents to be run as an iterative process alongside plan development, with the emerging policies or options reviewed during development to ensure that potentially significant effects on European sites can be identified at an early stage, so providing time for the effects (and any mitigation requirements) to be identified and assessed. This is undertaken in consultation with Natural England (NE) and other appropriate consultees.

This report summarises the HRA process that has been undertaken to support the Chesterfield Local Plan and ensure that it meets the requirements of Regulation 105. The report includes the following aspects:

- Details of the approach to the HRA of the Local Plan (**Section 2**).
- A summary of the baseline condition of the European sites and features that are potentially vulnerable (exposed and sensitive) to the likely effects of the Local Plan, and the impact pathways (**Section 3**).
- A summary of the screening assessments undertaken as part of the HRA of the emerging policies and proposals of the Local Plan, identifying those European sites and features that will not be affected by plan proposals, and those plan aspects (policies or allocations) which will not significantly affect any European sites (**Section 4**).
- Additional appropriate assessments for those European sites and features that are vulnerable to aspects of the Local Plan, taking account of mitigation measures included in the Pre-Submission Local Plan (**Sections 5 – 6**).
- A summary of the proposed conclusion for the HRA of the Local Plan (**Section 7**).

The assessment will be reviewed following any amendments that are made post-consultation, prior to the submission of the final plan. A formal assessment conclusion against the requirements of Regulation 105 will be made following Examination in Public, although this report sets out the proposed conclusion for the final assessment.

2. Approach to the HRA of the Local Plan

2.1 Overview

European Commission guidance⁴ suggests a four-stage process for HRA, although not all stages will necessarily be required (see **Box 1**). HRAs of Local Planning documents rarely proceed beyond Stage 2, as alternatives to 'adverse effect' policies or allocations are almost always available.

Box 1 – Stages of HRA

Stage 1 – Screening

This stage identifies the likely impacts upon a European site of a project or plan, either alone or 'in combination' with other projects or plans, and considers whether these impacts are likely to be significant. The screening test is a 'low bar' test and mitigation measures should not be considered at this point.

Stage 2 – Appropriate Assessment

Where there are likely significant effects, or where this is uncertain, this stage considers the effects of the plan or project on the integrity of the relevant European Sites, either alone or 'in combination' with other projects or plans, with respect to the sites' structure and function and their conservation objectives. Where it cannot be concluded that there will be no adverse effects on sites' integrity, it is necessary to consider potential mitigation for these effects. If mitigation is not available then the assessment may need to proceed Stage 3.

Stage 3 – Assessment of Alternative Solutions

Where adverse effects remain after the inclusion of mitigation, this stage examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of European sites.

Stage 4 – Assessment Where No Alternative Solutions Exist and Where Adverse Impacts Remain

This stage assesses compensatory measures where it is deemed that there are no alternatives that have no or lesser adverse effects on European sites, and the project or plan should proceed for imperative reasons of overriding public interest (IROPI). The EC guidance does not deal with the assessment of IROPI.

The 'screening' test or 'test of significance' is a low bar, intended as a trigger rather than a threshold test: a plan should be considered 'likely' to have an effect if the competent authority (in this case the Council) is unable (on the basis of objective information) to exclude the possibility that the plan could have significant effects on any European site, either alone or in combination with other plans or projects; an effect will be 'significant' simply if it could undermine the site's conservation objectives.

An 'appropriate assessment' stage (if required) allows for a closer examination of the plan (or its components) where the effects are significant or uncertain⁵ to determine whether there will be any 'adverse effects on integrity' of any European sites as a result of the plan's implementation. The scope of any 'appropriate assessment' stage is not set, however, and such assessments need not be extremely detailed: they must simply be 'appropriate' to the effects and proposal being considered, and sufficient to ensure that there is no reasonable doubt that adverse effects on site integrity will not occur.

It should be noted that the recent "**People Over Wind**" judgement⁶ has altered how mitigation and avoidance measures are accounted for in an HRA (see Section 2.3 below). The judgement states that "*...it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the*

⁴ *Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (EC 2002).

⁵ i.e. 'likely significant effects', where the possibility of significant effects cannot be excluded.

⁶ Court of Justice of the European Union (ECJ) Case C-323/17 - People over Wind, Peter Sweetman v Coillte Teoranta, preliminary ruling.

harmful effects [mitigation] of the plan or project on that site". This contrasts with established practice in this area (based on the "Dilly Lane" judgment⁷) whereby avoidance and mitigation measures were typically considered at screening. This presents some challenges for plan-level HRA, and in practice many more Local Plan HRAs will now require an 'appropriate assessment'; however, this should not substantially increase the workload required to complete an HRA for a Local Plan that would have previously been subject to screening only – as noted, any such assessment must simply be 'appropriate' to the issues being considered.

It is important to recognise that the *process* of strategic HRA is as much about guiding the development of the plan, and demonstrating that effects on European sites have been considered appropriately, as it is about (ultimately) assessing its effects. The HRA therefore contributes to the plan evidence-base, so assisting with the development of sustainable policies from the beginning of the plan-making process rather than being a purely retrospective 'test' applied towards the end. As a result, whilst the HRA reports that accompany the formal consultation stages of the plan development (Issues and Options, Preferred Options, Submission, etc.) necessarily reflect and assess the plan at that stage in its evolution, they also document the broader process of data gathering and assessment that occurs concurrently with the plan evolution and which ultimately demonstrates how the plan safeguards European sites. The HRA process therefore includes both evidence gathering and assessment, and informal reviews of the performance of the emerging plan and its policies, and whilst the two are inter-related for practical reasons a degree of separation is required in the reporting; therefore, the HRA report focuses on the evidence gathering and assessment, with the periodic reviews of the emerging policies summarised in appendices.

2.2 Guidance

The following guidance has been used during the review and assessment of the Pre_Submission Local Plan:

- PINS Note 05/2018: *Consideration of avoidance and reduction measures in Habitats Regulations Assessment: People over Wind, Peter Sweetman v Coillte Teoranta*).
- DTA Publications (2018) *The Habitats Regulation Handbook* [online]. Available at: <http://www.dtapublications.co.uk/handbook/>. Accessed 20.09.18;
- SNH (2017) *Habitats Regulations Appraisal of Plans: Guidance for plan-making bodies in Scotland*. Scottish Natural Heritage;
- DCLG (2006) *Planning for the Protection of European Sites: Appropriate Assessment. Guidance for Regional Spatial Strategies and Local Development Documents*. Department for Communities and Local Government, HMSO, London;
- English Nature (1997-2001) *Habitats Regulations Guidance Notes 1-9*, Natural England, Peterborough;
- European Commission (2002) *Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. European Commission, Brussels;
- European Commission (2001) *Assessment of plans and projects significantly affecting Natura 2000 sites*. European Commission, Brussels;
- European Commission (2007) *Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/433/EEC*. European Commission, Brussels.

⁷ Hart District Council v Secretary of State for Communities and Local Government [2008] EWHC 1204

2.3 Assessment Principles

The principles⁸ of **'screening'** are applied to the emerging Local Plan or its components (i.e. policies and site allocations) at an early stage, to identify those aspects where further investigation ('appropriate assessment') is required to determine the scale or nature of any effects and / or any bespoke mitigation that is necessary. The initial screening is used to exclude European sites and plan components from further assessment, if it is possible to determine that significant effects will not occur (e.g. if sites or interest features are clearly not vulnerable (i.e. both exposed and sensitive) to the outcomes of a plan due to the absence of any reasonable impact pathways). However, it is intended to be a coarse filter for identifying potential effect pathways that cannot be self-evidently discounted, rather than a detailed assessment in its own right. The initial screening is obviously undertaken at an early stage in the plan-development process, although the outcomes of this are re-visited throughout plan evolution to ensure that they remain robust.

'Appropriate assessments' are then used to provide a more detailed examination of those plan aspects where significant effects are likely, or (commonly) where there is a residual uncertainty which the assessment is intended to resolve. The 'appropriate assessment' stage may therefore conclude that the proposals are likely to have an adverse effect on the integrity of a site (in which case they should be abandoned or modified); or that the effects will be 'significant' but not adverse (i.e. an effect pathway exists, but those effects will not undermine site integrity, perhaps due to mitigation proposed for inclusion within the plan); or that the effects would, if screening were re-visited, be 'not significant' (i.e. the anticipated effect is shown to be *de minimus*⁹). The approaches used for appropriate assessments vary according to the sites affected and the effect-pathways; these are detailed in the relevant Sections 5 – 6.

Therefore, the initial screening essentially sets the framework for a more detailed examination of particular European sites or plan aspects, which is then undertaken alongside the plan development. However, there is obviously substantial overlap in the data requirements and assessment approaches for screening and appropriate assessment, and so the key aspects and principles underpinning both are summarised in the following sections.

Consultation

The HRA has been completed alongside the plan development. Wood (as Amec Foster Wheeler) produced a scoping document for comment (*Local Plan for Chesterfield Borough Habitats Regulations Assessment: Scope and Approach*) which was issued alongside the draft Local Plan and SA consultation undertaken in January 2017. Natural England responded to this in February 2017 (Letter Ref. 206217, 15 February 2017), providing guidance on the emerging policies, and responses to questions posed in the HRA scoping document. NE were broadly content with the proposed scope but suggested that the Sherwood Forest prospective potential Special Protection Area (ppSPA) also be included in the HRA.

Wood re-consulted with NE in October 2018 due to the implications of two legal judgements published since the original 'HRA scoping' technical note:

- *Wealden District Council v. Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority* [2017] EWHC 351 (relates to Air Quality and the 'in combination' assessment of this; generally referred to as 'the Wealden case'); and
- *People Over Wind and Sweetman v Coillte Teoranta (C-323/17)* (relates to the treatment of 'mitigation' and 'avoidance measures'; generally referred to as 'People over Wind' (or PoW)).

⁸ Note, from a strict procedural perspective, the 'screening' and 'appropriate assessment' stages can only be formally applied to the finalised plan, and not to its various phases or iterations; therefore the terms are used advisedly within this document.

⁹ In the absence of avoidance or mitigation measures, as per 'People over Wind'.

NE subsequently provided a response to this re-consultation (letter from NE to Wood dated 1 November 2018, ref. 262024). These consultation responses have been used to inform the scope and approach of the HRA.

Study Area

The zone of influence of the Local Plan will vary according to the aspect being considered (for example, noise effects would rarely extend more than a few hundred metres from the source), and so it is not usually appropriate to employ 'arbitrary' spatial buffers to determine those European sites that should be considered within an HRA. However, as distance is a strong determinant of the scale and likelihood of most effects, the considered use of a suitably precautionary search area as a starting point for the screening (based on a thorough understanding of both the plan outcomes and European site interest features) has some important advantages. Using search areas allows the systematic identification of European sites using GIS, so minimising the risk of sites or features being overlooked, and also ensures that sites where there are no reasonable impact pathways can be quickly and transparently excluded from any further screening or assessment. It also has the significant advantage of providing a consistent point of reference for consultees following the assessment process, allowing the 'screening' to focus on the potential effects, rather than on explaining why certain sites may or may not have been considered in relation to a particular aspect of the plan.

The screening stage therefore considers potential effects on:

- all European sites within 15km of the Council's Administrative Area;
- any additional sites that may be hydrologically linked to the Local Plan's zone of influence; and
- any additional sites identified by Natural England during scoping consultations.

This is considered to be a suitably precautionary starting point for the assessment of the Local Plan. The sites listed in **Table 2.1** are therefore included in the screening assessment (see also **Figure 2.1**).

Table 2.1 European sites within study area

| Site | Location relative to the Chesterfield Borough Council (CBC) Administrative Area |
|--|--|
| Birklands and Bilhaugh SAC | Site is approximately 15km to the east of the CBC boundary, in the Sherwood Forest Country Park. |
| Gang Mine SAC | Site located near Wirksworth, approximately 14km to the south-west of the CBC boundary. |
| Peak District Dales SAC | Composite site with multiple separate site units located to the west of the CBC Administrative Area; the closest unit is located near Matlock, approximately 11km from the CBC boundary. |
| Peak District Moors (South Pennine Moors Phase 1) SPA | Large upland site west and north-west of the CBC Administrative Area; closest point is approximately 4km from the CBC boundary but most of site substantially further away. |
| South Pennine Moors SAC | Large upland site west and north-west of the CBC Administrative Area; closest point is approximately 4km from CBC boundary but most of site substantially further away. |

In addition, Natural England (in its response to the HRA scoping document) indicated that the HRA should also consider potential effects on the "*Sherwood Forest prospective potential Special Protection Area (ppSPA)*". This site is not designated and so much of the information necessary for a detailed assessment is not currently available (for example: site boundaries; site condition assessments; conservation objectives; etc.); as a result any assessment of effects due to the Local Plan will be to some extent speculative. Natural England

has indicated a possible boundary for the prospective potential SPA in evidence to the Rufford Energy Recovery Facility (ERF) Public Inquiry¹⁰ (see **Appendix D**), which is used as the basis for assessment.

For all other European sites, it is considered that there is no possibility of any significant effects, alone or in combination, and these are not considered further.

'In Combination' Effects

Article 6(3) of the Habitats Directive requires that the potential effects of the Local Plan on European sites must also be considered 'in combination with other plans or projects'. The 'in combination' assessment must also consider within-plan effects (i.e. between policies or allocations). Consideration of 'in combination' effects is not a separate assessment, but is integral to the screening and appropriate assessments. There is limited guidance available on the scope of the 'in combination' element, particularly with regard to which plans should be considered. However, the assessment should not necessarily be limited to plans at the same level in the planning hierarchy and there is consequently a wide range of plans that could have potential 'in combination' effects with the Local Plan. There is also limited guidance on the mitigation that may be appropriate if a European site is already being significantly affected by other plans; this is possible, since some plans will pre-date the requirement for HRA of plans, and therefore cannot be relied on to have no significant effect in their own right.

Baseline Data

Data on the European site interest features, their distribution, and their sensitivity to potential effects associated with the Local Plan were obtained from various sources and reports, including the Joint Nature Conservation Committee (JNCC) and Natural England websites (citations; boundaries; Site Improvement Plans (SIPs); etc.); information on site condition was based on the Natural England condition assessments for corresponding Site of Special Scientific Interest (SSSI) units. Additional information on particular sites or features was obtained from other sources where available. The protocols used to gather other baseline data required to characterise a particular environmental change (for example, air quality data) are summarised in the relevant sections of this report.

The plans identified by the SA have provided the basis for the assessment of 'in combination' effects; these plans have been reviewed to identify any potential effects and then considered (as necessary) within the assessment. The assessment has not generally included national strategies, national policy or legislation since the Local Plan must be compliant with these. It is considered that 'in combination' effects are most likely in respect of other regional and sub-regional development plans and strategies. The plans considered 'in combination', and the results of the screening of these, are summarised in **Appendix B**.

Mitigation and Avoidance

The development of avoidance or mitigation measures is important to the HRA and plan development process. Avoidance measures are those that are implemented during the iterative plan development process (for example, abandoning a policy or allocation that is likely to have unavoidable adverse effects if implemented); mitigation measures are used where significant effects are identified in order to prevent adverse effects on a site's integrity¹¹.

Measures should aim to reduce the probability or magnitude of impacts on a European site until 'no likely significant effects' or 'no adverse effects on integrity' are anticipated, and they will generally involve the

¹⁰ Application by Veolia ES Nottinghamshire Limited, Land at former Rufford Colliery, Rainworth, Nottinghamshire; Application Ref: 3/07/01793/CMW

¹¹ Although it should be noted that not all 'significant' effects will require mitigation measures: the effect may be significant (i.e. has the potential to undermine the conservation objectives) but may be shown on examination, given the context, specific site and distance to be too small to have any risk of adversely affecting site integrity.

development and adoption of (for example) wording changes to policies or additional policies. Measures must be specific and targeted, and likely to work; it is not appropriate to re-state existing legislation or policy, for example by adding “*and must have no significant effect on any European site*” (or similar) to every policy. The avoidance or mitigation should also account for the limited influence that the Council can exert on non-planning issues, and should not generally exceed requirements set by national planning policy or guidance.

The ‘People Over Wind’ creates some issues for the application of avoidance and mitigation measures in the HRA process, stating that “*...it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects [mitigation] of the plan or project on that site*”; as noted, this contrasts with established practice in this area (based on the ‘Dilly Lane’ judgment)

There is currently little information on the practical implementation of the ‘People over Wind’ judgement¹², particularly for plan-level HRAs where the assessment is usually concurrent with plan development and where measures are invariably incorporated into the plan before the formal ‘screening’ of the final version takes place. Indeed, many ‘recommendations’ derived from an iterative policy review process might be interpreted as ‘avoidance’ or ‘mitigation’ measures if viewed solely in terms of their implications for European sites, making it difficult to distinguish between basic good policy practice and ‘mitigation’. For example, generic policies promoting the use of Sustainable Drainage Systems (SuDS); or safeguarding designated sites (including European sites); or requiring that developers ensure utility provision in advance; are fairly standard inclusions in virtually all land-use plans, but will all act to reduce effects on European sites. However, it would clearly be illogical to attempt to screen a hypothetical version of the plan that did not include such policies, particularly if these are included independently of the HRA.

The broader context of the ‘People over Wind’ case suggests that the judgement is principally focusing on those instances where specific measures are included or relied on to avoid or mitigate a specific effect that has been identified, and which would otherwise be significant; the judgement argues that the effectiveness of any such measures should be examined through an appropriate assessment stage. It is therefore arguable that an exhaustive examination of a plan’s genesis to see if any aspects might count as ‘mitigation’ for screening purposes would not be proportionate, or (arguably) consistent with the intent of the Habitats Directive or the ‘People over Wind’ judgement.

Therefore, the screening **does not** take account of specific measures that are included in response to a specific identified effect on a European site, and which are intended to avoid or reduce that effect. However, generic policy safeguards that would be included regardless of the presence of European sites are essentially just ‘the plan’ and are not considered to be ‘mitigation’ unless there is a specific effect or pathway that they are intended or relied on to obviate. Aspects requiring specific investigations to understand the problem (and hence the mitigation requirements), or which rely on established mitigation to avoid an effect, are subject to Appropriate Assessment, although this does require an acceptance that some ‘appropriate’ assessments under this scenario would be very brief and more of a procedural step rather than a detailed technical undertaking (principally if it is entirely self-evident that ‘mitigation’ previously considered at screening is available, achievable and likely to be effective)).

Uncertainty and ‘Down the Line’ Assessment

For most policies, even at the strategic level, it will be clear if adverse effects are likely at an early stage, and in these instances the policy should not be included within the plan since plans should not include proposals which would be likely to fail the Habitats Regulations tests at the project application stage. For other options, however, the effects may be uncertain and it is therefore important that this uncertainty is addressed

¹² The Planning Inspectorate has issued a guidance note (PINS Note 05/2018: *Consideration of avoidance and reduction measures in Habitats Regulations Assessment: People over Wind, Peter Sweetman v Coillte Teoranta*) although this does not provide substantive practical information for LPAs or clear guidance on what might constitute an ‘avoidance measure’.

either through additional investigation or (if this is not possible) appropriate mitigation measures that provide certainty that the predicted effect will not adversely affect site integrity.

It is usually possible to incorporate caveats or measures within policy text that are sufficient to ensure that adverse effects will not occur. However, for other policies this may not be possible because there is insufficient available information about the nature of the development that is being proposed through the policy to enable a robust conclusion to be reached. In these instances, current guidance indicates that it may be appropriate and acceptable for assessment to be undertaken 'down-the-line' at a lower tier in the planning hierarchy. For this to be acceptable, the following conditions must be met¹³:

- the higher tier plan appraisal cannot reasonably predict the effects on a European site in a meaningful way; whereas;
- the lower tier plan, which will identify more precisely the nature, scale or location of development, and thus its potential effects, retains enough flexibility within the terms of the higher tier plan over the exact location, scale or nature of the proposal to enable an adverse effect on site integrity to be avoided; and
- HRA of the plan at the lower tier is required as a matter of law or Government policy.

¹³ SNH (2017) *Habitats Regulations Appraisal of Plans: Guidance for plan-making bodies in Scotland*. Scottish Natural Heritage

3. Baseline Summary and Impact Pathways

3.1 European Sites

Features and Condition

The interest features of the European sites within the study area, and the current factors affecting them, are summarised in **Table 3.1**. A summary of the conservation objectives is provided below. As set out in **Section 3.1**, the percentage of a site in favourable or unfavourable condition was estimated using the Natural England condition assessments for the corresponding SSSI units, although it must be noted that the boundaries of the component SSSI units (to which the condition assessments relate) do not always match the European site boundaries exactly (i.e. the SSSIs are usually larger) and it is not always possible to split SSSI units to determine the precise area of the European site (or interest feature) that is in each condition category¹⁴. The current pressures on, and threats to, the sites are also identified, based on the SIPs¹⁵.

There are many factors currently affecting the European sites over which the Local Plan will have no or little influence; analysis of the available European site data and the SSSI condition assessments indicates that the most common reasons for an 'unfavourable' condition assessment of the component SSSI units are due to inappropriate management of some form (e.g. over- or undergrazing, scrub control, water-level management etc.). The potential mechanisms by which the Local Plan could affect these sites are discussed in **Section 3.2**.

Conservation Objectives

The conservation objectives for all of the sites listed in **Table 3.1** have been revised by Natural England in recent years to increase consistency of assessment and reporting. As a result, the high-level conservation objectives for all sites are effectively the same:

For SACs:

- *With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features'...), and subject to natural change; ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring [as applicable to each site];*
 - ▶ *The extent and distribution of the qualifying natural habitats;*
 - ▶ *The extent and distribution of the habitats of qualifying species;*
 - ▶ *The structure and function (including typical species) of the qualifying natural habitats;*
 - ▶ *The structure and function of the habitats of qualifying species;*
 - ▶ *The supporting processes on which the qualifying natural habitats rely;*
 - ▶ *The supporting processes on which the habitats of qualifying species rely;*
 - ▶ *The populations of qualifying species; and,*
 - ▶ *The distribution of qualifying species within the site.*

¹⁴ This is evident in **Table 3.1**, where the proportion of the site area in each condition category does not always total 100%.

¹⁵ Available at: <http://publications.naturalengland.org.uk/category/5458594975711232>

For SPAs:

- *With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features'...), and subject to natural change; ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:*
 - ▶ *The extent and distribution of the habitats of the qualifying features;*
 - ▶ *The structure and function of the habitats of the qualifying features;*
 - ▶ *The supporting processes on which the habitats of the qualifying features rely;*
 - ▶ *The population of each of the qualifying features; and*
 - ▶ *The distribution of the qualifying features within the site.*

The conservation objectives are considered when assessing the potential effects of plans and policies on the sites; information on the sensitivities of the interest features also informs the assessment.

Table 3.1 European sites and interest features within 15km of the Chesterfield Borough Council Administrative Area, or otherwise included in assessment scope

| Site and interest features | Condition (%)** | Summary of current threats and potential vulnerabilities to outcomes of Local Plan |
|--|-----------------|--|
| Birklands and Bilhaugh SAC | F 0 | <p>This site is a remnant of the historic Sherwood Forest, designated for its ancient lowland oak woodland on acidic, sandy or gravelly substrates. The site comprises woodland and open wood-pasture, characterised by stands of ancient oak-birch woodland with a distinctive wood-pasture structure derived from its use as grazing land and one of the largest concentrations of ancient trees (over 500 years of age) in the UK. Both sessile oak <i>Quercus petraea</i> and pedunculate oak <i>Quercus robur</i> are dominant in almost even species distribution, forming vegetation consistent with the NVC types W10 <i>Quercus robur</i> – bracken <i>Pteridium aquilinum</i> – bramble <i>Rubus fruticosus</i> and W16a <i>Quercus</i> – birch <i>Betula</i> – wavy hair-grass <i>Deschampsia flexuosa</i> woodland. The woodland feature at Birklands and Bilhaugh is especially notable for its rich invertebrate fauna, particularly the groups of beetles, spiders and flies which are closely associated with, and dependent upon, the various micro-habitats provided by old trees and dead or decaying wood.</p> <p>The vast majority of the site is in ‘unfavourable recovering’ condition although a small area associated with a visitor centre is in ‘unfavourable no change’ condition; the condition assessment notes that “<i>This unit contains woodland, ancient and veteran trees within or close to the visitor centre compound and associated car parking areas. The replacement of the characteristic woodland and heathland ground vegetation with areas of hard-standing, buildings, made-up ground and surfaced walkways is the principal reason for adverse condition. The remedy identified is the physical removal of the centre footprint and the restoration of the appropriate vegetation communities.</i>”.</p> <p>The SIP indicates that the main pressures on the woodland are public access / disturbance; changes in land management; nitrogen deposition; and invasive species. With regard to public access, the Natural England (NE) Supplementary Advice (NE 2015) notes that “<i>there is high public usage across the SAC supported by a network of Public Rights of Way (PRoWs) and permissive paths</i>”, and there are concerns regarding future visitor numbers at the site and potential effects due to localised soil compaction, nutrient enrichment, direct loss of trees (vandalism, health and safety) and introduction of non-native species. The SIP suggests that this can be managed through wardening; the SIP also notes that “<i>The current visitor’s centre complex (restaurant, office, shops, associated infrastructure and car parks) are located within the SAC and its presence is preventing the necessary restoration of the full extent of the oak woodland. This needs to be physically removed and the area restored</i>”. With regard to air quality, the SIP notes that “<i>Nitrogen deposition exceeds site relevant critical loads. Locally observed effects include increase in bracken cover and vigorous grasses at expense of slower growing species of impoverished soils (although it is not possible to attribute this solely to nitrogen deposition)</i>”.</p> |
| | UR 98.8 | |
| <u>Annex I Features:</u> | U 1.2 | |
| Old acidophilous oak woods with <i>Quercus robur</i> | UD 0.0 | |
| on sandy plains | PD 0.0 | |
| | NS 0.0 | |

| Site and interest features | Condition (%)** | | Summary of current threats and potential vulnerabilities to outcomes of Local Plan |
|--|-----------------|------|--|
| Gang Mine SAC | F | 89.0 | <p>This site is located within the most highly mineralised region of carboniferous limestone of Derbyshire. It is on the south-eastern margin of the White Peak massif. This region has a long history of mineral mining. The site supports a variety of habitats with dry grassland, steppes and humid grassland, mesophile grassland comprising of approximately 94% of the area. The remainder of the site is composed of 'other land' in the form of the mine. Formed on natural limestone outcrops, the site is designated for its Calaminarian grasslands of the <i>Violetalia calaminariae</i>, which has colonised a large area of the mine working and spoil heaps. Due to the nature of the site including spoil heaps, the topography is highly varied in regard to slope and aspect. The soil is highly toxic due to the presence of heavy metals and the toxicity varies throughout the site. Spring sandwort <i>Minuartia verna</i> and alpine penny-cress <i>Thlaspi caerulescens</i> are abundant. Early-purple orchid <i>Orchis mascula</i> and dyer's greenweed <i>Genista tinctorial</i> are also present. Numerous species throughout the site are likely to be distinct genotypes due to the soil toxicity.</p> <p>The majority of the site is in 'favourable' condition, namely 'Buntings Field'. The smaller field that juts out to the west is considered to be 'unfavourable recovering'. Both areas are grassland which was previously grazed by cattle. In Spring, sheep were present within the northern half for ragwort control. With ownership change, a long sward was allowed to develop resulting in MG5 and MG1 grassland areas. Intervention has now improved the condition of the site, however the overall cover of the Calaminarian grassland is reduced. There are no current significant risks from management to the site's condition.</p> <p>The SIP considers air pollution to be a threat to the condition of the grasslands.</p> |
| <u>Annex I Features:</u> | UR | 11.0 | |
| Calaminarian grasslands of the <i>Violetalia calaminariae</i> | U | 0.0 | |
| | UD | 0.0 | |
| | PD | 0.0 | |
| | NS | 0.0 | |
| | NS | 0.0 | |
| Peak District Dales SAC | F | 64.0 | <p>The Peak District Dales cover a total area of 2,331.52 hectares and it is underpinned by 13 SSSIs. The site is predominantly formed of dry grassland, steppes and broad-leaved deciduous woodland with a range of other habitats incorporated. The Dales is an extensive area of CG2 <i>Festuca ovina</i> – <i>Avenula pratensis</i> grassland with a complexity of structures ranging from short turf to tall herb-rich vegetation. The rock outcrops, cliffs and screes further contribute to the diversity of habitat structural types and provide differing slopes, gradients and aspects. Limestone bedstraw <i>Galium sternerii</i> and globeflower <i>Trollius europaeus</i> are present due to the cold climatic conditions. The <i>Tilio-Acerion</i> woodland transitions to scrub and grassland extensively and supports diverse invertebrate and plant communities. The woodland present on the site is at the north of its range in the UK. It is dominated by ash <i>Fraxinus excelsior</i>, with abundant sycamore <i>Acer pseudoplatanus</i>. Mezereon <i>Daphne mezereum</i>, green hellebore <i>Helleborus viridis</i> and whitebeams <i>Sorbus spp.</i> are present on site.</p> <p>The River Dove is a high-quality, upland limestone river which supports the white-clawed crayfish <i>Austropotamobius pallipes</i>.</p> |
| <u>Annex I Features:</u> | UR | 33.1 | |
| European dry heaths (Q) | U | 1.1 | |
| Calaminarian grasslands of the <i>Violetalia calaminariae</i> (Q) | UD | 1.9 | |
| Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) | PD | 0.0 | |
| Alkaline fens (Q) | D | 0.0 | |
| Calcareous and calcshist screes of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>) (Q) | NS | 0.0 | |
| Calcareous rocky slopes with chasmophytic vegetation (Q) | | | |
| <i>Tilio-Acerion</i> forests of slopes, screes and ravines | | | |
| | | | |

| Site and interest features | Condition (%)** | | Summary of current threats and potential vulnerabilities to outcomes of Local Plan |
|--|---------------------------|------------------------------------|---|
| <p><u>Annex II Features:</u> White-clawed (or Atlantic stream) crayfish <i>Austropotamobius pallipes</i> Brook lamprey <i>Lampetra planeri</i> (Q) Bullhead <i>Cottus gobio</i> (Q)</p> | | | <p>The majority of the site is in 'favourable' or 'unfavourable recovering condition', however significant proportions are considered to be in 'unfavourable no change' or 'unfavourable declining' condition. The SIP highlights a range of issues that are considered to be pressures or threats on the habitat quality and condition of the SAC. Due to the SAC being formed of various sites, these pressures / threats are often localised to specific areas of the Dales. The listed pressures and threats are:</p> <ul style="list-style-type: none"> • inappropriate habitat management (over/undergrazing and scrub control); • elevated nutrient exposure (from agricultural fertiliser and sewage treatment works); • water (pollution, inappropriate weirs, dams and other structures and inappropriate water levels); • disease (white-clawed crayfish and Chalara); • invasive signal crayfish; • air pollution; • climate change; • flytipping, vehicles; and • unknown conditions and features. |
| <p>Peak District Moors (South Pennine Moors Phase 1) SPA</p> <p><u>Article 4.1 qualification:</u> Merlin <i>Falco columbarius</i> European golden plover <i>Pluvialis apricaria</i> Short-eared owl <i>Asio flammeus</i></p> | F UR UN UD PD | 12.9 81.5 3.5 2.1 0.1 | <p>Phase 1 of the South Pennine Moors SPA largely overlaps with the South Pennine Moors SAC and is underpinned by four SSSIs. These are: Dark Peak SSSI; Eastern Peak District Moors SSSI; Goyt Valley SSSI; and Leek Moors SSSI. This site is a vast area of unenclosed moorland and associated fringe habitats. It extends into enclosed farmlands of wet rush pasture, hay meadows and small wetlands. There are extensive areas of blanket bog and dry heath with acid grassland, flushes, exposed gritstone, boulder slopes, streams, moorland reservoirs, semi-natural woodland and enclosed farmland which forms the upland vegetation characterises of these moors. Species of note on site include merlin <i>Falco columbarius</i>, European golden plover <i>Pluvialis apricaria</i> and short-eared owl <i>Asio flammeus</i>.</p> <p>Factors influencing the condition of these sites include: burning habitat for grouse shooting; under/overgrazing; erosion of peat; inappropriate drainage and water management; bracken invasion; invasive species; inappropriate scrub control; lack of woodland regeneration; and age diversity, disturbance and disease.</p> |
| <p>South Pennine Moors SAC</p> <p><u>Annex I Features:</u> Northern Atlantic wet heaths with <i>Erica tetralix</i> (Q) European dry heaths Blanket bogs (* if active bog)</p> | F UR UN UD PD | 10.5 84.1 3.7 1.7 <0.0 | <p>The site covers over 65,000 hectares and is formed of large continuous areas and smaller isolated areas of moorland. The moorlands are on a dissected plateau ranging from 300m-600m in altitude. Ilkley Moor is the northernmost section and the Peak District is the southernmost section within the South Pennine Moors SAC. Blanket peat covers the majority of the gritstone. On the lower slopes a coarse, gravely mineral soil occurs. The moorland supports flushes and fen habitats adding to the complex mosaic of the site. Breeding bird colonies of national and international importance are supported by moorlands.</p> |

| Site and interest features | Condition (%)** | Summary of current threats and potential vulnerabilities to outcomes of Local Plan |
|--|-----------------|---|
| <p>Transition mires and quaking bogs (Q) Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</p> | | <p>Dry upland heath blankets extensive areas of the lower moor slopes where the peat is thin or mineral soils are present. This habitat is dominated by <i>Calluna vulgaris-Deschampsia flexuosa</i> heath and <i>C. vulgaris-Vaccinium myrtillus</i> heath. The upland heath transitions into acid grassland (derived from wet and dry heath), wet heath and blanket bog. A rarer habitat that is present within the site is <i>C. vulgaris- Ulex gallii</i> heath and <i>C.vulgaris-Erica cinerea</i> heath. On high and exposed ground <i>V. myrtillus – D. flexuosa</i> heath is more abundant. The smaller area of wetland heath within the site is dominated by cross-leaved heath <i>Erica tetralix</i> and purple moor grass <i>Molinia careulea</i>. A greater diversity of dwarf shrubs, lichens and mosses are present in the cloughs and valleys that extend into the heather moorlands.</p> <p>The blanket bog vegetation communities are species poor. Hare’s-tail cotton grass <i>Eriophorum vaginatum</i> is dominant and <i>Sphagnum</i> mosses rare. The drier areas support heather <i>C. vulgaris</i>, crowberry <i>Empetrum nigrum</i> and bilberry <i>V.myrtillus</i>. Significant areas of bog are eroding and there are large areas of bare peat. Some of this is thought to be a natural process.</p> <p>Sessile oak woodlands are present on slopes within the site. Ground flora is common, including grasses, dwarf shrubs and ferns. Alder woodland is present along stream-sides.</p> <p>Five SSSIs sites underpin South Pennine Moors SAC. These are Dark Peak SSSI, Eastern Peak District Moors SSSI, Goyt Valley SSSI, Leek Moors SSSI and South Pennine Moors SSSI. For the most part, these sites are considered to be in ‘unfavourable recovering’ or, to a lesser extent, ‘favourable’ condition. Goyt Valley SSSI and Leek Moors SSSI have the highest proportions of ‘unfavourable – declining’ areas and a small portion of Leek Moors is considered to be ‘partially destroyed’.</p> <p>The South Pennine Moors SIP includes the following individual pressures / threats to the site:</p> <ul style="list-style-type: none"> • hydrological changes; • managed rotational burning and arson; • low breeding success; • public access / disturbance; • air pollution (atmospheric nitrogen impacts); • vehicles; • inappropriate management and under/overgrazing; • woodland management; • species distribution changes; • disease and invasive species; and • planning permission issues. |

| Site and interest features | Condition (%)** | Summary of current threats and potential vulnerabilities to outcomes of Local Plan |
|---|-----------------|---|
| Sherwood Forest ppSPA Features not yet confirmed but likely to be: <u>Article 4.1 qualification:</u> Nightjar Woodlark | n/a | NE (in its response to the HRA scoping document) indicated that the HRA should also consider potential effects on the " <i>prospective potential Sherwood Forest SAC</i> ". As noted in Section 2.3, this site is not designated and so much of the baseline information necessary for a detailed assessment is not currently available (for example: site boundaries; site condition assessments; conservation objectives; etc.). NE indicated a possible boundary for the ppSPA in evidence to the Rufford Energy Recovery Facility (ERF) Public Inquiry (see Appendix D), which is used as the basis for assessment. The features of the site are likely to be breeding woodlark and nightjar. With regard to the habitats, these will be a mix of lowland heath, woodland and wood pasture. Based on other sites in this area (notably Birklands and Bilhaugh SAC) and heathland SPAs elsewhere, it is likely that the main pressures on the site will be visitor pressure, air quality and management, with visitor pressure and air quality potentially influenced by the Local Plan. |

Key

| | |
|-------------------|--|
| * | Interest features (habitats or species) that are a primary reason for designation; all other habitats and species are qualifying features |
| W | Wintering species |
| P | Breeding species |
| - | Species included on original SPA citation but proposed for removal following the SPA Review |
| + | Species not included on the original SPA citation but added following the SPA Review |
| Annex I / II | Habitats or species listed on Annex I or II (respectively) of Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive') |
| Article 4.1 / 4.2 | Bird species qualifying under Article 4.1 or 4.2 of Directive 2009/147/EC on the Conservation of Wild Birds (the 'new Wild Birds Directive') |
| ** | Based on the condition assessments of the SSSI units that correspond to the relevant European sites; note, for the Marine Site (Outer Thames Estuary SPA) there are no corresponding SSSI units. |
| F | Favourable |
| UR | Unfavourable recovering |
| U | Unfavourable no change |
| UD | Unfavourable declining |
| PD | Partially destroyed |
| NS | Not stated (e.g. offshore areas where site is not underpinned by an SSSI). |

3.2 Outcomes of the Local Plan and Effect Pathways

Local plans will generally assist the safeguarding of European sites through their protective policies. However, there will be a number of areas where the direction, controls or influence provided by a plan can result in outcomes that can affect European site interest features. Most potential effect pathways are associated with broad 'quantum of development' or population growth aspects, and whilst a local plan is not necessarily the main driver of these effects, they do have a key role in managing them locally through the site allocation process. In this context, the main mechanisms by which the Chesterfield Borough Local Plan could affect European sites are through spatial allocations that have direct or indirect effects on European sites; or through policies that direct development (or do not control development) such that significant effects are likely. The main environmental aspects, and the pathways by which the Local Plan could potentially affect European sites, are summarised in the following sub-sections together with any available baseline data on those aspects to inform the assessment. European sites that are particularly vulnerable to a specific aspect (i.e. sensitive and likely to be exposed due to the Local Plan) are identified.

Recreational Pressure

Many European sites will be vulnerable to some degree of impact as a result of recreational pressure, although the effects of recreational pressure are complex and very much dependent on the specific conditions and interest features at each site. For example: some bird species are more sensitive to disturbance associated with walkers or dogs than others; some habitats will be more sensitive to trampling or mechanical disturbance than others; some sites will be more accessible than others.

The most typical mechanisms for recreational effects are through direct damage of habitats, or disturbance of certain species. Damage will most often be accidental or incidental, but many sites are particularly sensitive to soil or habitat erosion caused by recreational activities and require careful management to minimise any effects (for example, through provision and maintenance of 'hard paths' (boardwalks, stone slabs etc.) and signage to minimise soil erosion along path margins).

Disturbance¹⁶ of species due to recreational activities can also be a significant problem at some sites, although the relationship (again) is highly variable and depends on a range of factors including the species, the time of year and the scale, type and predictability of disturbance. Most studies have focused on the effects on birds, either when breeding or foraging. For example, a long-term monitoring project by Natural England on the Thanet Coast has found that turnstones (a shoreline-feeding waterbird) are particularly vulnerable to disturbance from dogs, which interrupts their feeding behaviour and can prevent them from gaining sufficient body fat for overwintering or migration. Finney *et al.* (2005), meanwhile, noted that re-surfacing the Pennine Way significantly reduced the impact of recreational disturbance on the distribution of breeding Golden plover, by encouraging walkers to remain on the footpath. In contrast, some species are largely unaffected by human disturbance (or even benefit from it) which can result in local or regional changes in the composition of the fauna. The scale, type and predictability of disturbance is also important; species can become habituated to some disturbance (e.g. noise), particularly if it is regular or continuous. Unpredictable disturbance is most problematic.

Most recreational activities with the potential to affect European sites are 'casual' and pursued opportunistically (e.g. walking, walking dogs, riding) rather than structured (e.g. organised group activities or trips to specific discrete attractions), which means that it can be difficult to quantify or predict either the uptake or the impacts of these activities on European sites and (ultimately) harder to control or manage effects. It also means that it is difficult to explore in detail all of the potential aspects of visitor pressure at the strategic level. However, it is possible for plans and strategies to influence recreational use of European

¹⁶ In this case, literal disturbance by human activity; in ecology, 'disturbance' is a more complex concept used in models of ecosystem equilibrium.

sites through the planning process, for example by increasing the amount of green space required within or near developments if potentially vulnerable European sites are located nearby.

Urbanisation

Urbanisation is generally used as a collective term covering a suite of often disparate risks and impacts that occur due to increases in human populations near protected sites. Typically, this would include aspects such as fly-tipping or vandalism, although the effects of these aspects again depend on the interest features of the sites: for example, predation of some species by cats is known to be sizeable (Woods *et al.* 2003) and can be potentially significant for some European sites. Recreational pressure is arguably one type of effect associated with urbanisation, although this is usually considered separately as it is less closely associated with proximity; as a broad guide, urbanisation effects are more likely when developments (etc.) are within a few hundred metres of a designated site, whereas people will typically travel further for recreation.

Where sensitive sites are involved, development buffers of around 400m are typically used to minimise the effects of urbanisation: for example, Natural England has identified a 400m zone around the Chichester and Langstone Harbours SPA within which housing development should not be located due to the potential effects of urbanisation (particularly, the risk of chick predation by cats, which cannot be mitigated). Similarly, local planning authorities (LPAs) near the Thames Basin Heaths SPA have adopted a 400m zone around the SPA boundary where there is a presumption against new residential development as the impact on the SPA is considered likely to be adverse.

It should be noted that none of the condition assessments for European sites within the study area identify urbanisation as a particular issue and in reality, there is sufficient distance between most sites and the nearest settlement boundaries for this to not be a significant threat. Having said that, allocating development sites within existing settlements where urbanisation has already occurred and where effects are likely to be more manageable, even if near a European site, is arguably a preferable course of action.

It should be noted that no European sites are within the Council's Administrative Area or in close proximity, and so 'urbanisation' effects as a result of the Local Plan will not occur. In consequence, this pathway is not considered further.

Atmospheric Pollution

A number of pollutants have a negative effect on air quality; however, the most significant and relevant to habitats and species (particularly plant species) are the primary pollutants sulphur dioxide (SO₂, typically from combustion of coal and heavy fuel oils), nitrogen oxides (NO_x, mainly from vehicles) and ammonia (NH₃, typically from agriculture), which (together with secondary aerosol pollutants¹⁷) are deposited as wet or dry deposits. These pollutants affect habitats and species mainly through acidification and eutrophication. Acidification increases the acidity of soils, which can directly affect some organisms and which also promotes leaching of some important base chemicals (e.g. calcium), and mobilisation and uptake by plants of toxins (especially metals such as aluminium). Air pollution contributes to eutrophication within ecosystems by increasing the amounts of available nitrogen (N)¹⁸. This is a particular problem in low-nutrient habitats, where available nitrogen is frequently the limiting factor on plant growth, and results in slow-growing low-nutrient species being out-competed by faster growing species that can take advantage of the increased amounts of available N.

¹⁷ Secondary pollutants are not emitted, but are formed following further reactions in the atmosphere; for example, NO₂ is oxidised to form HNO₃; ozone is formed by the reaction of other pollutants (e.g. NO_x or volatile organic compounds) with UV light; ammonia reacts with acid pollutants (e.g. the products of SO₂ and NO_x emissions) to produce aerosols containing ammonium (NH₄⁺).

¹⁸ Nitrogen that is in a form that can be absorbed and used by plants.

Table 3.2 Main air pollutants, pathways and effects

| Pollutant | Pathway | Summary of Effects |
|---|---|--|
| Ammonia (NH₃) | Primarily from agriculture through decomposition of animal manure and slurry. | Emissions contribute to acidification and (particularly) eutrophication. |
| Nitrogen oxides (NO_x) | All combustion processes produce oxides of nitrogen (NO _x) in air; road transport is the main source, followed by the electricity supply industry. NO _x emissions have decreased with increased fuel efficiency and use of catalytic converters. | Emissions contribute to acidification and eutrophication; contribute to formation of secondary particles and ground level ozone. |
| Sulphur Dioxide (SO₂) | Sulphur dioxide (SO ₂) is released when fuels containing sulphur are burnt, especially coal and heavy fuel oils. The energy industry has traditionally been the primary source, although this has decreased as use of coal has decreased. | SO ₂ dissolves readily in water to form an acid which contributes to acidification of soils and water. |

Overall in the UK, there has been a significant decline in sulphur oxides (SO_x) and NO_x emissions in recent years and a consequential decrease in acid deposition. In England, SO_x and NO_x have declined by 97% and 72% respectively since 1970 (Defra, 2018) which is the result of a switch from coal to gas, nuclear and renewables for energy generation, and increased efficiency and emissions standards for cars. These emissions are generally expected to decline further in future years. In contrast, emissions of ammonia have remained largely unchanged; they have declined by 10% in England since 1980 (Defra, 2018), but since 2008 have started to increase slightly.

The effect of SO_x and NO_x decreases on ecosystems has been marked, particularly in respect of acidification; the key contributor to acidification is now thought to be deposited nitrogen, for which the major source (ammonia emissions) has not decreased significantly. Indeed, eutrophication from N-deposition (again, primarily from ammonia) is now considered the most significant air quality issue for many habitats.

The UK Air Pollution Information System (APIS) has been interrogated to identify those European sites and features in the study area where critical loads¹⁹ for nutrient-N deposition and acidification are met or exceeded. APIS provides a comprehensive source of information on air pollution and the effects on habitats and species and although there are limitations to the data (see SNIFFER, 2007), particularly related to the scale at which data can be modelled, this provides the best basis for assessing the impacts of air emissions associated with the Local Plan in the absence of site-by-site monitoring data.

Table 3.3 summarises the APIS data for SACs and SPAs with features that are directly sensitive to air quality in the study area. It should be noted that critical load values are generally provided for habitats rather than species, and that watercourses are not included as eutrophication of most watercourses due to air emissions is negligible compared to run-off from agricultural land.

Table 3.3 Summary of APIS interrogation

| Site | Air quality sensitive features | Over CL? | |
|-----------------------------------|--|----------|----|
| | | Acid | N |
| Birklands and Bilhaugh SAC | Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains | ++ | ++ |
| Gang Mine SAC | Calaminarian grasslands of the <i>Violetalia calaminariae</i> | + | ++ |

¹⁹ 'Critical Loads' are the threshold level for the deposition of a pollutant above which harmful indirect effects can be shown on a habitat or species, according to current knowledge (APIS, 2009).

| Site | Air quality sensitive features | Over CL? | |
|--|---|----------|----|
| Peak District Dales SAC | European dry heaths | + | ++ |
| | Calaminarian grasslands of the <i>Violetalia calaminariae</i> | + | ++ |
| | Semi-natural dry grasslands and scrubland facies on calcareous substrates | - | ++ |
| | Alkaline fens | n/a | ++ |
| | Calcareous and calcshist screes of the montane to alpine levels | + | ++ |
| | Calcareous rocky slopes with chasmophytic vegetation | + | ++ |
| | <i>Tilio-Acerion</i> forests of slopes, screes and ravines | + | ++ |
| Peak District Moors (South Pennine Moors Phase 1) SPA | Merlin <i>Falco columbarius</i> * | + | ++ |
| | European golden plover <i>Pluvialis apricaria</i> * | ++ | ++ |
| | Short-eared owl <i>Asio flammeus</i> * | + | ++ |
| South Pennine Moors SAC | Northern Atlantic wet heaths with <i>Erica tetralix</i> | ++ | ++ |
| | European dry heaths | ++ | ++ |
| | Blanket bogs (* if active bog) | ++ | ++ |
| | Transition mires and quaking bogs | ++ | ++ |
| | Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles | + | ++ |

Table Notes:

CL Critical load

Acid Acidification

N Eutrophication

n/a Critical load not set for feature / feature not sensitive

- below minimum CL for that habitat

+ minimum CL for that habitat is exceeded

++ maximum CL for that habitat is exceeded

* The SPA interest features are not directly sensitive to air quality (at least at the levels encountered) and so the sensitivity is based on the sensitivity of the supporting habitats.

The Local Plan proposals may indirectly contribute to local air pollution and wider diffuse pollution, but quantifying these effects is difficult. In practice, the principal source of air pollution associated with the Local Plan will be related to changing patterns of vehicle use due to the promotion of new development (since the Local Plan does not provide for any new significant point-sources). The Department of Transport's *Transport Analysis Guidance*²⁰ states that "beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant" and therefore this distance is used to determine the potential significance of any local effects associated with the Local Plan.

More broadly, Local Plan proposals may indirectly contribute to wider diffuse pollution within and beyond the Council's Administrative Area, in combination with other developments, plans and programmes. However, trans-boundary air pollution can only be realistically addressed by national legislation or higher-tier plans, policies or strategies and so any assessment must focus on the development of suitable mitigating policy that will minimise the contribution of plan-supported development to overall diffuse pollution.

Water Resources and Flow Regulation

The exploitation and management of water resources is connected to a range of activities, most of which are not directly controlled or influenced by the Local Plan; for example, agriculture, flood defence, recreation, power generation, fisheries and nature conservation. Much of the water supply to water-resource sensitive European sites is managed through specific consenting regimes that are independent of the Local Plan.

It is clear that development supported or managed by the Local Plan is likely to increase demand for water, which could indirectly affect some European sites in the study area. When assessing the potential effects of

²⁰ See

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/638648/TAG_unit_a3_envir_imp_app_dec_15.pdf; accessed 12/11/18.

increased water demand it is important to understand how the public water supply (PWS) system operates and how it is regulated with other water resource consents.

Water is predominantly supplied in the Chesterfield Borough area by Severn Trent Water. The Severn Trent Water area is covered by its Strategic Grid Water Resource Zone (WRZ); water in the Strategic Grid WRZ is from both groundwater and surface water sources, integrated in a complex network. The majority of the water resources in the Borough are therefore supplied through integrated grid networks that enable the highly effective conjunctive use of different water resources; this mitigates risk and allows optimal planning, optimal source operation, and resilient sources of supply both in drought and during floods. The complexity of the supply system means that direct and specific supply relationships cannot necessarily be made and it is rarely possible or appropriate to identify a particular 'source' for water supply to a specific area.

Consequently, direct effects on specific European sites as a result of development within the Borough cannot be identified or quantified.

More importantly, the water resources planning process helps to ensure that growth in water demand does not affect European sites. The Water Industry Act 1991, as amended by the Water Act 2003 and Water Act 2014, requires that all water companies must publish a Water Resources Management Plan (WRMP) that sets out their strategy for managing water resources across their supply areas over the next 25 years and beyond. WRMPs use calculations of Deployable Output (DO) to establish supply/demand balances; this enables water companies to identify those WRZs with potential supply deficits over the planning period²¹. The calculations account for any reductions in abstraction that are required to safeguard European sites²² and so the WRMP process (with other regulations) helps ensure (as far as is achievable) that future changes in demand will not affect any European sites²³.

Severn Trent Water accounted for the growth predicted by the Council and other LPAs in forecasting for the 2014 WRMP. Severn Trent identified supply demand deficits in its Strategic Grid WRZ due to the need to reduce abstraction from unsustainable sources (principally the Elan Valley reservoirs in Wales) and the potential impacts of climate change; these deficits are being met through leakage reduction schemes and a range of asset enhancement and licencing schemes (e.g. reservoir expansion; aquifer storage and recovery; licence transfers).

The 2014 WRMP has been subject to HRA, which concluded that it will have no significant effect on any European sites, including those water-resource sensitive sites and features within the Local Plan HRA study area. The WRMPs provide the best estimate of future water resource demand, and therefore it is reasonable to assume that the growth predicted within the Local Plan can be accommodated without significant effects on any European sites due to PWS abstractions. Furthermore, since the WRMP explicitly accounts for the growth predicted by the Council and other LPAs, 'in combination' effects between the Local Plan and the WRMP are unlikely to occur. Having said that, the Local Plan can obviously help manage demand and promote water efficiency measures through its policy controls. It should also be noted that all WRMPs are currently being reviewed ahead of publication in 2019, so future review of this aspect may be appropriate

²¹ Forecasts are completed in accordance with the Water Resources Planning Guidelines (published by the Environment Agency) and take into account (inter alia) economic factors (economic growth, metering, pricing), behavioural factors (patterns of water use), demographic factors (population growth, inward and outward migration, changes in occupancy rate), planning policy (LPA land use plans), company policies (e.g. on leakage control and water efficiency measures) and environmental factors, including climate change. The WRMP therefore accounts for these demand forecasts based on historical trends, an established growth forecast model and through review of local and regional planning documents.

²² For example, sustainability reductions required by the Review of Consents (RoC) or the Environment Agency's Restoring Sustainable Abstractions (RSA) programme. It should be noted that, under the WRMP process, the RoC changes (and non- changes to licences) are considered to be valid over the planning period. This means that the WRMP (and its underlying assumptions regarding the availability of water and sustainability of existing consents) is compliant with the RoC and so the WRMP can only affect European sites through any new resource and production-side options it advocates to resolves deficits, and not through the existing permissions regime.

²³ Calculations of DO include for Target Headroom (precautionary 'over-capacity' in available water) to buffer any unforeseen variation in predicted future demand; the WRMP is also reviewed on a five-yearly cycle to ensure it is performing as expected and to account for any variations between predicted and actual demand.

although the same requirements will exist with regard to the HRA of the WRMPs²⁴. The HRA of the draft 2019 WRMP concluded that the plan would have no significant effects on any European sites as a result of its delivery, and so effects on European sites due to water resource provision associated with growth in the Chesterfield area will not occur.

Water Quality

Chesterfield Borough contains lies within the Humber River Basin District (as defined for the Water Framework Directive) and its catchments are covered by the Don Catchment Flood Risk Management Plans (CFMPs). The main watercourses passing through the borough are the River Rother and its tributaries the River Nipper, River Drone, Barlow Brook, Holme Brook and Calow Brook.

Most waterbodies and watercourses in the borough are affected to some extent by point or diffuse sources of pollutants, notably nitrates and phosphates. Point sources are usually discrete discharge points, such as wastewater treatment works (WwTW) outfalls, which are generally managed through specific consenting regimes that are independent of the Local Plan. Diffuse pollution is derived from a range of sources (e.g. agricultural run-off; road run-off) that cannot always be easily traced or quantified.

Development promoted or supported by the Local Plan is likely to increase demand on wastewater treatment works and potentially increase run-off. However, it should be recognised that the nearest downstream European sites are those associated with the Humber estuary, which are a significant distance downstream from the Borough. Sewerage and wastewater treatment services are provided by Severn Trent Water and Yorkshire Water. The Infrastructure Study and Delivery Plan 2011²⁵ prepared in support of the Local Plan identifies that in the long term, new wastewater treatment capacity will be required to meet the demand resulting from planned growth, principally at Staveley but that this capacity will be planned for through Yorkshire Water and Severn Trent's Asset Management Plans (AMP). In this context, planned future improvements to increase the capacity of existing facilities during future AMP periods will ensure that sufficient capacity exists to accommodate growth through the plan period. With regard to effects on European sites, it should be noted that the EA's Review of Consents determined that there was no adverse effect on the integrity of any European sites from nutrient enrichment due to EA consents (i.e. associated with sewerage treatment). The role of the Local Plan should therefore be to ensure, through policy controls, that infrastructure provision is planned and delivered ahead of developments being completed.

Run-off from impermeable surfaces can have considerable effects on waterbodies and watercourses, and is a notable issue in both urban and rural areas. Development has traditionally sought to capture and divert rain and run-off to the nearest watercourse or treatment facility as quickly as possible, and extensive drainage networks have been developed to facilitate this. However, as developed areas have increased so have the total volumes and flow rates of run-off. This has two principal effects: firstly, impermeable surfaces provide very little resistance to the mobilisation and transport of pollutants within run-off; and secondly, flow rates and volumes often exceed the capacity of the receiving drains or watercourses, causing localised flooding or the operation of combined sewer overflows (CSOs)²⁶. The effect of run-off from developed areas can be mitigated or reduced by the use of Sustainable Drainage Systems (SuDS) and by increasing the area of permeable surfaces (both natural and artificial) within developed areas. These measures offer effective

²⁴ Consultation on the Severn Trent Water draft WRMP closed on 18th May 2018. For further information see <https://www.severntrent.com/about-us/future-plans/water-resource-management/water-resource-management-plan/> [Accessed Oct 2018].

²⁵ Available at: <https://www.chesterfield.gov.uk/planning-and-building-control/planning-policy-and-the-local-plan/evidence-base/infrastructure-study-and-delivery-plan.aspx>

²⁶ All sewerage pipes have a certain capacity, determined by the size of the pipe and the receiving water treatment works. At times of high rainfall, this capacity can be exceeded, with the risk of uncontrolled bursts. CSOs provide a mechanism to prevent this, by allowing untreated sewerage to mix with surface water run-off when certain volumes are exceeded. This is then discharged to the nearest watercourse.

attenuation by reducing the volumes of surface run-off. They also increase the retention of pollutants and, in the case of some SuDS, can allow for treatment of pollutants.

With regard to European sites, no sites are considered to be vulnerable to potential changes in water quality associated with growth in the Borough (the Humber estuary sites are over 40 miles downstream of the Borough). Since the water quality effects of the Local Plan are ultimately either controlled by existing consents regimes (which must undergo HRA) or have diffuse 'in combination' effects that are difficult to quantify, the HRA process aims to ensure that suitable mitigating policy that will minimise the impacts of plan-supported development on water quality generally is provided.

Flooding and Water Level Management

The implementation of the European Floods Directive (Directive 2007/60/EC) in England and Wales is being co-ordinated with the Water Framework Directive. Catchment Flood Management Plans (prepared by the EA), Shoreline Management Plans (prepared by coastal local authorities and the EA), River Basin District Flood Risk Management Plans (prepared by the EA) and Local Flood Risk Management Strategies set out long term policies for flood risk management. The delivery of the policies from these long-term plans will help to achieve the objectives of these plans and the RBMPs.

Development supported by the Local Plan is unlikely to significantly alter regional flood risk levels, but may exacerbate the effects of local flooding. Run-off from impermeable surfaces can have considerable effects on waterbodies and watercourses, meaning that flow rates and volumes often exceed the capacity of the receiving drains or watercourses. This can lead to local water quality impacts on European sites. The effect of run-off from developed areas can be mitigated or reduced by the use of SuDS and by increasing the area of permeable surfaces (both natural and artificial) within developed areas. However, no European sites are considered to be exposed to potential changes in flood risk that may result from the Local Plan.

Effects on Functional Habitats Outside of European Sites

The provisions of the Habitats Regulations ensure that 'direct' (encroachment) effects on European sites as a result of land use change (i.e. the partial or complete destruction of a European site) are extremely unlikely under normal circumstances, and this will not occur as a result of the Local Plan. However, many European interest features (particularly more mobile animal species) may use or be reliant on non-designated habitats outside of a European site during their life-cycle. Developments some distance from a European site can therefore have an effect on the site if its population of interest features is reliant on the habitats being affected by the development. All of the above aspects (recreation, water resources, etc.) can therefore also affect European site integrity indirectly through effects on functional habitats outside of the designated site boundary.

With regard to the European sites within the study area, this is only a potential issue for the Peak District Moors (South Pennine Moor Phase 1) SPA and (potentially) the Sherwood Forest ppSPA.

Natural England has suggested that golden plover can use functionally-linked land up to 20km from a SPA, and several studies suggest that some areas of lowland farmland may be as important for this species as the habitats of the coastal and wetland SPAs typically associated with wintering waders (e.g. Mason & MacDonald 1999; Gillings 2003), and perhaps even more so. Broadly, it appears that golden plover retain an association with wetland or coastal sites, typically remaining within a few kilometres of these (except where significant regional movements of flocks occur in response to, for example, changing weather conditions), but will often spend several tidal cycles (or more) foraging and roosting in farmland, both during the day and night. This behaviour is known to be under-recorded by the standard Wetland Bird Survey (WeBS) monitoring technique, with the result that increasing attention is being paid to the use of agricultural areas by overwintering golden plover. However, this is principally considered an issue for SPAs where the birds aggregate in winter rather than for summer breeding sites such as the Peak District Moors (South Pennine Moor Phase 1) SPA, and land-use in the Borough will not influence breeding success (and hence integrity) of

golden plover associate with the SPA. The 2016 SPA Review (JNCC, 2016) includes golden plover in a broad group of species that are known to be reliant on cropped habitats, which are under-represented in the SPA network (although the SPA Review suggests that this should be addressed outside the SPA Review process through "*wider countryside measures to preserve and promote permanent pasture as feeding and roosting habitat for the species*").

With regard to the Sherwood Forest ppSPA, the integrity of the populations of the proposed interest features of this site (woodlark and nightjar) will not be reliant on habitats within the Borough, principally due to the behavioural characteristics and habitat preferences of these species, and the nature of the habitats in the Borough (note, this is not to say that (for example) woodlark will not use habitats within Chesterfield; rather that these habitats will not be critical to the maintaining the integrity of the ppSPA woodlark population).

4. Initial Screening Assessment

4.1 Initial Screening of European Sites

All European sites within 15km of the Council's Administrative Area have been included in the scope of the HRA. Often, however, sites or interest features within a study area can be excluded from further assessment at an early stage ('screened out') because the plan or project will self-evidently have either 'no effect' or 'no significant effect' on these sites (i.e. the interest features are not sensitive to the likely effects of a plan or project; or are not likely to be exposed to those effects due to the absence of any reasonable impact pathways).

The following sections provide a brief summary of the screening of the European sites and their interest features based on the baseline data summarised in **Section 3** and the policies and proposals of the Local Plan. It should be noted that this aspect of the screening process is a 'low bar', with sites, aspects or features only 'screened out' if they will self-evidently be unaffected by the Local Plan (i.e. it is aiming to identify those aspects that will clearly have 'no effect' or 'no significant effect' (alone or in combination) due to an absence of impact pathways). In addition, it is appropriate to assume that all relevant lower tier consents and permissions (etc.) will be correctly assessed and controlled, and that any activities directly or indirectly supported by the Local Plan will adhere to the relevant legislative requirements and all normal best-practice (e.g. it would be inappropriate to assume that normal controls on, for example, the installation of a new discharge to a watercourse, would not be correctly followed).

Bilhaugh and Birklands SAC

The Bilhaugh and Birklands SAC is a remnant of the historic Sherwood Forest, designated for its ancient lowland oak woodland on acidic, sandy or gravelly substrates. The site comprises woodland and open wood-pasture. The vast majority of the SSSI associated with the SAC is in 'unfavourable recovering' condition although a small area associated with a visitor centre is in 'unfavourable no change' condition; however, it is understood that the visitor centre has been relocated (summer 2018) and the woodland in this area is being restored, and so it is likely that all of the site will be in 'unfavourable recovering' condition in the near future. The SIP indicates that the main pressures on the woodland are public access / disturbance; changes in land management; nitrogen deposition; and invasive species.

Table 4.1 Summary of site screening based on impact pathways

| Aspect | Screening summary | Consider further? |
|------------------------------|---|-------------------|
| Recreational pressure | The SAC is approximately 15km from the Council's administrative boundary, and so potentially within the travelling range of visitors from the Borough; this aspect is considered further. | Yes |
| Urbanisation | Site is not within the Borough and so not exposed to the outcomes of the Local Plan in this regard. | No |
| Atmospheric pollution | The habitat features of the SAC are sensitive to atmospheric pollutants, and the critical loads for the site are currently exceeded. | Yes |
| Water resources | The site features are not considered 'water resource sensitive', and will not be vulnerable to increased abstraction that may be associated with the growth supported by the Local Plan. | No |
| Water quality | There is no pathway for this site to be affected by changes in water quality associated with the proposals within the Local Plan. | No |

| Aspect | Screening summary | Consider further? |
|---|---|-------------------|
| Flooding / water management | There is no pathway for this site to be affected by changes in flooding / water management associated with the proposals within the Local Plan. | No |
| Effects on mobile species away from site | Site does not support any mobile interest features. | No |

Gang Mine SAC

This site is located on former carboniferous limestone mine workings and supports a variety of habitats including dry grassland, steppes and humid grassland, and mesophile grassland. It is designated for its Calaminarian grasslands of the *Violetalia calaminariae*, which has colonised a large area of the mine workings and spoil heaps; many areas of the site are toxic due to the presence of heavy metals. The site is almost entirely in 'favourable' condition.

Table 4.2 Summary of site screening based on impact pathways

| Aspect | Screening summary | Consider further? |
|---|---|-------------------|
| Recreational pressure | This is a small SAC approximately 14km from the Borough boundary, and visitor pressure is not identified as a specific threat or pressure at the site. Development within the Borough will not significantly alter this baseline or affect the site in this regard. | No |
| Urbanisation | Site is not within the Borough and so not exposed to the outcomes of the Local Plan in this regard. | No |
| Atmospheric pollution | The habitat features of the SAC are sensitive to atmospheric pollutants, and the critical loads for the site are currently exceeded. | Yes |
| Water resources | The site features are not considered 'water resource sensitive', and will not be vulnerable to increased abstraction that may be associated with the growth supported by the Local Plan. | No |
| Water quality | There is no pathway for this site to be affected by changes in water quality associated with the proposals within the Local Plan. | No |
| Flooding / water management | There is no pathway for this site to be affected by changes in flooding / water management associated with the proposals within the Local Plan. | No |
| Effects on mobile species away from site | Site does not support any mobile interest features. | No |

Peak District Dales SAC

The Peak District Dales SAC comprises thirteen separate units; these units are predominantly ash woodlands and calcareous grasslands although a range of other habitats (rock outcrops; fens; rivers) also support interest features. Most of the SAC units are well over 20km from the Borough, and not likely to be exposed to potentially significant effects associated with the Local Plan. The closest units are the woodland SSSIs around Matlock (Matlock Woods SSSI and Via Gellia Woodlands SSSI) that support the *Tilio-Acerion forests of slopes, screes and ravines* feature, which are approximately 12km from the Borough boundary at their closest point. All of the site units associated with Matlock Woods SSSI and Via Gellia Woodlands SSSI are in 'favourable' or 'unfavourable recovering' condition, with the exception of two areas where the absence of

scrub management has meant that grasslands here are classified as 'unfavourable – no change' or 'unfavourable – declining'.

Table 4.3 Summary of site screening based on impact pathways

| Aspect | Screening summary | Consider further? |
|---|---|-------------------|
| Recreational pressure | Most of the SAC units are well over 20km from the Borough and are not considered to be exposed to potential significant effects as a result of the Local Plan due to this separation. The closest units (approximately 11km from the Borough), associated with Matlock Woods SSSI and Via Gellia Woodlands SSSI near Matlock, are woodland sites with some public access. | Yes |
| Urbanisation | Site is not within the Borough and so not exposed to the outcomes of the Local Plan in this regard. | No |
| Atmospheric pollution | The habitat features of the SAC are sensitive to atmospheric pollutants, and the critical loads for the site are currently exceeded. | Yes |
| Water resources | Some site features are 'water resource sensitive' (principally those associated with the rivers and fen habitats) although the sites will not be subject to significant or significant adverse effects as a result of future PWS abstraction based on the existing consents regime; and the information provided in the Severn Trent Water WRMP and HRA. | No |
| Water quality | There is no pathway for this site to be affected by changes in water quality associated with the proposals within the Local Plan (separate catchments). | No |
| Flooding / water management | There is no pathway for this site to be affected by changes in flooding / water management associated with the proposals within the Local Plan. | No |
| Effects on mobile species away from site | Site does not support any mobile interest features. | No |

South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA

The South Pennine Moors SAC and Peak District (South Pennine Moors Phase 1) SPA are largely coincident and are both vulnerable to a similar range of pressures. In consequence, they are considered together here (this is consistent with the SIP), with specific effects associated with specific features identified where appropriate. The sites cover over 65,000 hectares and are formed of large continuous areas and smaller isolated areas of moorland on a dissected plateau ranging from 300m-600m in altitude. The Peak District is the southernmost section within the South Pennine Moors SAC, although most of the site is some distance from the Borough (over 20 km) and so unlikely to be exposed to any effects associated with the Local Plan. The closest areas to the Borough are the moors on the western edge of the North East Derbyshire Council administrative area, principally Big Moor, East Moor and Harewood Moor. All of the SSSI site units associated with these areas of the SAC / SPA are in 'favourable' or 'unfavourable recovering' condition.

Table 4.4 Summary of site screening based on impact pathways

| Aspect | Screening summary | Consider further? |
|------------------------------|--|-------------------|
| Recreational pressure | Sites are approximately 10km from the Borough at their closest point and vulnerable to visitor pressure. | Yes |
| Urbanisation | Sites are not within the Borough and so not exposed to the outcomes of the Local Plan in this regard. | No |

| Aspect | Screening summary | Consider further? |
|---|---|-------------------|
| Atmospheric pollution | The habitat features of the SAC are sensitive to atmospheric pollutants, and the critical loads for the site are currently exceeded. | Yes |
| Water resources | Some site features are 'water resource sensitive' (principally upland mires) although the sites will not be subject to significant or significant adverse effects as a result of future PWS abstraction based on the existing consents regime; and the information provided in the Severn Trent Water WRMP and HRA. | No |
| Water quality | There is no pathway for the sites to be affected by changes in water quality associated with the proposals within the Local Plan (separate catchments). | No |
| Flooding / water management | There is no pathway for the sites to be affected by changes in flooding / water management associated with the proposals within the Local Plan. | No |
| Effects on mobile species away from site | Sites do not support any mobile interest features. | No |

Sherwood Forest ppSPA

The Sherwood Forest ppSPA is not designated and so much of the baseline information necessary for a detailed assessment is not currently available (for example: site boundaries; site condition assessments; conservation objectives; etc.). Natural England indicated a possible boundary for the ppSPA in evidence to the Rufford ERF Public Inquiry (see **Appendix D**), which is used as the basis for assessment. The features of the site are likely to be breeding woodlark and nightjar. With regard to habitats, these will be a mix of lowland heath, woodland and wood pasture. Based on other sites in the study area (notably Birklands and Bilhaugh SAC) and heathland SPAs elsewhere, it is likely that the main pressures on the site will be visitor pressure, air quality and management, with visitor pressure and air quality potentially influenced by the Local Plan. Most of the site would probably be in 'unfavourable recovering' condition if designated.

Table 4.5 Summary of site screening based on impact pathways

| Aspect | Screening summary | Consider further? |
|---|---|-------------------|
| Recreational pressure | Site is approximately 10km from the Borough at its closest point and vulnerable to visitor pressure. | Yes |
| Urbanisation | Site is not within the Borough and so not exposed to the outcomes of the Local Plan in this regard. | No |
| Atmospheric pollution | The supporting habitats of the SPA are sensitive to atmospheric pollutants, and the critical loads for the site are likely to be exceeded on designation. | Yes |
| Water resources | There is no pathway for this site to be affected by PWS abstractions associated with the proposals within the Local Plan (separate catchments). | No |
| Water quality | There is no pathway for this site to be affected by changes in water quality associated with the proposals within the Local Plan (separate catchments). | No |
| Flooding / water management | There is no pathway for this site to be affected by changes in flooding / water management associated with the proposals within the Local Plan. | No |
| Effects on mobile species away from site | Site does not support any mobile interest features. | No |

4.2 Review of Local Plan Components: Policies and Allocations

Approach

The screening process has considered the European sites potentially vulnerable to the Local Plan and the likely outcomes of the policies as drafted. Policies may have effects in their own right, or they may be used to control potential effects or prevent them from occurring. A policy should be considered 'likely' to have an effect if the competent authority is unable (on the basis of objective information) to exclude the possibility that the plan could have significant effects on any European site, either alone or in combination with other plans or projects; an effect will be 'significant' if it could undermine the site's conservation objectives. However, it is important that the policy assessment focuses on effects that are objectively possible, rather than just imaginable; furthermore, it is not appropriate for policies to simply re-state existing legislation in place of appropriate mitigating measures.

When considering the likely effects of a policy, it is recognised that some policy 'types' cannot result in impacts on any European sites. Different guidance documents suggest various classification and referencing systems to help identify those policies that can be safely screened out; the general characteristics of these policy types are summarised in **Table 4.6**.

Table 4.6 Policy 'types' that can usually be screened out

| Broad Policy Type | Notes |
|--|--|
| General statements of policy / aspiration | The European Commission recognises* that plans or plan components that are general statements of policy or political aspirations cannot have significant effects; for example, general commitments to sustainable development. |
| General design / guidance criteria or policies that cannot lead to or trigger development | A general 'criteria based' policy expresses the tests or expectations of the plan-making body when it comes to considering proposals, or relates to design or other qualitative criteria which do not themselves lead to development (e.g. controls on building design); however, policies with criteria relating to specific proposals or allocations should not be screened out. |
| External plans / projects | Plans or projects that are proposed by other plans and are referred to in the plan being assessed for completeness (for example, Highways England road schemes; specific waste development proposals promoted by a County Minerals and Waste Plan). |
| Environmental protection policies | Policies designed to protect the natural or built environment will not usually have significant or adverse effects (although they may often require modification if relied on to provide sufficient safeguards for other policies). |
| Policies which make provision for change but which could have no conceivable effect | Policies or proposals which cannot affect a European site (no impact pathways and hence no effect; for example, proposals for a new cycle path several kilometres from the nearest European site) or which cannot undermine the conservation objectives, either alone or in combination, if impact pathways exist (no significant effect). |

* EC, 2000, Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC April 2000 at 4.3.2

It should be noted that it is inappropriate to apply a policy classification tool uncritically to all policies of a certain type; there will obviously be some occasions when a policy or similar may have potentially significant effects, despite being of a 'type' that would normally be screened out. The criteria in **Table 4.6** have therefore been applied critically to the screening of the draft Local Plan policies to identify the following policy groups:

- **'No effect'** policies: policies that will have 'no effect' (i.e. policies that, if included as drafted, self-evidently would not have any effect on a European site due to the type of policy or its operation; for example, a policy controlling town centre shop signage; a policy setting out

sustainable development criteria that developments must meet). Note that 'no effect' policies cannot have in-combination effects.

- **'No likely significant effect'** policies: policies where impact pathways exist but the effects will not be significant (alone or in-combination).
- **'Uncertain effect'** policies: policies where the precise effects on European sites (either alone or in combination) are uncertain, and hence additional investigation (appropriate assessment) or policy modification is required. Note that further investigation will often demonstrate that there is no significant effect or allow suitable mitigation or avoidance measures to be identified to ensure this.
- **'Likely significant effect'** policies: policies which are likely to have a significant effect (either alone or in-combination) and hence require additional investigation (appropriate assessment) or policy modification. Note that 'likely significant effect' policies are more likely to require that the policy be amended, abandoned or re-worked to avoid significant effects.

Reflecting these policy groups, a colour coding system (see **Table 4.7**) has been used for the purposes of screening the Local Plan policies in **Appendix C**.

Table 4.7 Colour coding for screening of Local Plan policies

| | |
|--|--|
| | No LSE – policy will not or cannot affect any European sites and can therefore be screened out (subject to brief review of final policy). |
| | No LSE, but amendments recommended; policies that will not affect any European sites but which could be enhanced or strengthened. |
| | Policy has a potential pathway for effects that should be explored through appropriate assessment; may require changes to avoid adverse effects (e.g. minor re-wording; referencing mitigating policies). |
| | Policy has a pathway that is likely to result in adverse effects (requires detailed consideration through appropriate assessment if retained); policy should be abandoned or re-worked to include specific mitigation (may apply to groups of policies). |

It should be noted that the inclusion of a policy in the 'red' or 'yellow' categories does not mean that significant effects are inevitable since in many instances the assessments reflect uncertainties that need to be explored through further analysis (and it would be possible to undertake an appropriate assessment stage and still conclude (following a further screening) that there will be no significant effects). **Appendix C** therefore summarises the initial screening review (identifying pathways) and also the outcomes of the appropriate assessments in **Sections 5 and 6**.

Policy Review Outcomes

The vast majority of the planning policies contained in the Pre-Submission Local Plan were categorised as 'no effect' or 'no significant effect' policies. However, the policies relating to housing growth and allocations were identified as having possible LSE due to recreational pressure and air quality, and were therefore incorporated into more detailed appropriate assessments (see **Sections 5 and 6**).

4.3 Review and Screening of Site Allocations

The proposed site allocations have been reviewed to identify those which (if developed) could result in significant effects on a European site. The review has largely focused on the identification of specific effects that might be associated with specific allocations (and which may therefore require the inclusion of allocation-specific mitigation within the associated policies) rather than the broader 'quantum of

development' effects²⁷. The risk of effects is obviously strongly dependent on how a particular development is implemented at the project stage and in most cases, potential effects can be avoided using best-practice and standard scheme-level avoidance measures which do not necessarily need to be specified for each allocation. However, in some instances there may not be sufficient flexibility or safeguards provided to ensure that a particular allocation could be delivered without significant effects, if brought forward.

The review of the proposed allocations has concluded that none, if developed, would have any significant effects **on their own** that could not be avoided or mitigated using standard measures, and that the Local Plan provides sufficient flexibility (and protective policies) to ensure this. This is principally due to the distance of the allocations from the nearest European sites and the absence of effect pathways. However, it is possible that some European sites may be vulnerable to the effects of housing growth in the Borough in combination with growth and allocations proposed for other LPA areas; this aspect is explored further in **Section 5 and 6**).

4.4 Summary of Screening

The screening undertaken has concluded the following:

- The vast majority of proposed Local Plan policies will have no effect on any European sites, typically because they are policy types that do not make provision for changes.
- None of the proposed site allocations are likely to result in significant effects alone.
- Most of the European sites are potentially vulnerable to regional 'in-combination' effects due to visitor pressure and changes in air quality, to which the Local Plan will contribute (although the contribution is likely to be relatively limited for most sites), and therefore these aspects would benefit from further consideration to ensure that effects as a result of the Local Plan do not occur.
- Other potential pathways for sites to be affected (e.g. through water resource permissions or changes in water quality) are unlikely to be realised due to the absence of reasonable impact pathways. The potential for effects is managed by separate consenting (etc.) regimes that the Local Plan must complement and support through appropriate policy controls, but it is considered that policy controls within the Local Plan can adequately mitigate the risk of effects.

Based on the findings of the screening exercises, two principal aspects have been taken forward for further consideration and detailed appropriate assessment as part of this report in order to ensure that effects as a result of the Local Plan do not occur, specifically: air quality and recreational pressure. These aspects are explored in more detail in **Sections 5 and 6**.

²⁷ Effects due to the overall quantum of development are essentially a within-plan 'in combination' effect.

5. Appropriate Assessment: Recreational Pressure

5.1 Approach

All of the European sites within the study area are potentially sensitive to 'in combination' visitor pressure effects due to the combined growth associated with the implementation of the local plans of LPAs near to these designated sites, although Gang Mine SAC is not considered to be exposed the effects of the Chesterfield Borough Local Plan. In strict additive terms, any visit by a Chesterfield Borough resident to any European site is contributing to 'in combination' visitor pressure, although distance and journey time obviously have a very strong influence on the number of visitors from the Borough and the frequency of visits, which in turn influences the relative importance of visitor pressure associated with growth supported by the Local Plan.

Attempts to predict the effects of increased recreation on European sites that may be associated with development or allocations derived from strategic plans typically aim to identify the distance within which a certain percentage of visits currently originate. Site-specific questionnaire surveys can be undertaken to identify visitor origin and to characterise the typical use of a site; these are then used to identify the 'buffer zones' or 'zones of influence' within which new development would be considered likely to have significant effects on a site, unless appropriately mitigated. Probably the most common metric used for 'buffer zones' or 'zones of influence' is the distance within which approximately 70 - 75% of visitors live. Some examples are summarised in **Table 5.1**. It should be noted that these are necessarily selective as not all studies considering visitor pressure have necessarily reported percentiles.

Table 5.1 Travel distances for ~70 – 75% of visitors recorded by previous studies

| Study | European sites and key issues | Summary of findings |
|--|---|---|
| Solent Disturbance and Mitigation Project (Fearnley <i>et al.</i> 2010) | Solent Maritime SAC Chichester and Langstone Harbours SPA Pagham Harbour SPA Chichester and Langstone Harbours Ramsar Pagham Harbour Ramsar (Coastal sites; major urban areas; disturbance of birds) | Half of all visitors arriving on foot lived within 0.7km; half of all visitors arriving by car lived more than 4km away. Average travel distance (excluding holidaymakers): 5.04km. 75% of visits from postcodes within 5.6km. |
| Thames Basin Heaths (Liley <i>et al.</i> 2005) | Thames Basin Heaths SPA (Heathland sites; urban areas; disturbance of birds) | 70% of visitors travel 5km or less to access sites. |
| Whitehall and Bordon Ecotown (EPR 2012) | Wealden Heaths SPA Shortheath Common SAC Woolmer Forest SAC Thursley, Ash, Pirbright and Chobham SAC Thursley and Ockley Bogs Ramsar site (Heathland and woodland sites; urban areas; disturbance of birds; damage to heath) | Average travel distance: 6.7km. 70% of visitors travel 4.3km or less to access sites. 70% distance values for following component sites: - Frensham Common: 10.7km - Kingsley Common: 7.4km - Bramshott Common: 4.5km - Woolmer Forest: 3.4km |

| Study | European sites and key issues | Summary of findings |
|--|---|--|
| | | <ul style="list-style-type: none"> - Longmoor Enclosure: 3.2km - Ludshott Common: 2.9km - Broxhead Common: 2.1km - Hogmoor Inclosure: 0.9km - Shortheath Common: 0.6km - Bordon Enclosure: 0.5km |
| Ashdown Forest (UE / University of Brighton 2009) | Ashdown Forest SPA (Heathland sites; urban areas; disturbance of birds) | 76% of visitors travel 5km or less to access sites. |
| Thanet Coast and Sandwich Bay (Fearnley et al. 2014) | Thanet Coast and Sandwich Bay SPA / Ramsar; Thanet Coast SAC (coastal sites, disturbance of birds) | 75% of 'regular visitors' live within 4.9km; 75% of all visitors live within 9.8km. |
| Dorset Heaths (English Nature 2006) | Dorset Heaths SAC (plus other sites; heathland sites; urban areas; disturbance of birds) | 75% of visitors coming to a site on foot come from within a straight-line distance of 500m. 75% of visitors by car live within 5.3km of the site. |
| South-East Devon European Site Mitigation Strategy (Liley et al. 2014) | Exe Estuary SPA (coastal sites, disturbance of birds); Dawlish Warren SAC (sand dunes, visitor damage); East Devon Pebblebed Heaths SAC / SPA (heathland, visitor damage, disturbance of birds) | 75% of visitors to Exe Estuary, Dawlish Warren, and East Devon Pebblebed Heaths live within 7.8km, 14.4km and 6.9km of the site boundary respectively (based on household survey); 75% of visitors to Exe Estuary and Dawlish Warren live within 14.3km and 14.7km the site boundary respectively (based on on-site visitor surveys). Other metrics for determining 75% distances also used. |
| Deben Visitor Survey (Lake et al. 2014 for the Deben Estuary Partnership) | Deben Estuary SPA / Ramsar | 75% of visitors on a day trip / from home live within 13.2km. |

Typically, the distance within which 75% of visitors live is less than 6 – 7km, although in practice this distance is as likely to reflect the local settlement and population distributions, and journey times (which are not generally examined in detail), as much as the attractiveness of the European site. However, it is important to note that there is no standard method for defining the 'zone of influence' and a range of approaches have been adopted for different sites. For example, in a study for Canterbury City Council, Fearnley *et al.* (2014) suggested several possible options for a 'zone of influence' around the Thanet Coast SAC, on which mitigation proposals could be based; these ranged from 4.9km (the distance within which 75% of all 'regular visitors'²⁸ live) to 7.2km (the distance within which 90% of all 'regular visitors' live), to 9.8km (the distance within which 75% of all visitors live). Indeed, Fearnley *et al.* (2014) note that "*The identification of a 'zone of influence' is really an exercise in identifying a boundary which seems pragmatic, representative of visitor patterns to the site, the physical features of the site, infrastructure, current housing distribution and the nature of the surrounding area*". The South-East Devon European Site Mitigation Strategy (Liley *et al.* 2014) identifies several alternative approaches for determining the a 'zone of influence' around the Exe Estuary SPA (and hence the appropriate area for seeking developer contributions towards mitigation); these ranged from

²⁸ People visiting at least once a week.

7.8km from the SPA boundary to 14.3km, with a distance of 10km ultimately selected for the purposes of seeking developer contributions.

A difficulty with solely using straight-line distance is that it treats all visitors as 'equal users', whereas in reality, a relatively small number of visitors may be responsible for most visits to a site (and hence most disturbance risk). Natural England, as part of its input to the County Durham Plan, noted a '75% rule' to determine significance, whereby recreational buffers are based on the distance within which 75% of visits, as opposed to visitors, originate (i.e. taking account of frequency of visits as well as distance travelled); for the Durham Coast SAC, Northumbria Coast SPA / Ramsar and Teesmouth and Cleveland Coast SPA / Ramsar this distance was 6km. For the Thanet Coast study (Fearnley *et al.* 2014), 75% of all 'regular visitors' lived within 4.9km. Furthermore, it is likely that journey time plays a role in choice of visit location and frequency, although this aspect is not substantially explored in much of the literature reviewed as part of this report.

Visitor behaviour is complex and generalised statistics can hide important variations in the use of a site, particularly for larger sites such as those associated with the Peak District (for example, the 75% distance is likely to vary significantly depending on the access point surveyed and the activity being undertaken by the visitor). Furthermore, there is some evidence that inland sites have smaller travel distances than coastal sites, although in reality the nature of the site will be important; regional or national attractions (such as the Peak District, or Sherwood Forest) will probably attract visitors from a wider catchment than small sites with limited access. Any derived buffers must therefore be applied cautiously.

Secondary buffers are also sometimes identified to reflect the variation in visitor behaviour, particularly for those that live in close proximity to a site. For example, the studies supporting the County Durham Plan adopted a 400m buffer also, since 59% of respondents living within the 0 – 400 metre buffer were high risk users, i.e. visit the coast between one and three times a day. This distance has also been used as a threshold for seeking contributions towards mitigation for the Thames Basin Heaths SAC.

Growth in visitor pressure due to the Chesterfield Borough Local Plan is likely to be limited by the distance of the sites from the Borough and specific visitor surveys have not been undertaken for the plan. The HRA therefore relies on: existing visitor data that are available for the sites; information on the characteristics of the sites and interest features (including their likely exposure to effects taking into account established site management); evidence from existing HRAs for local plans of LPAs adjacent to the sites; and data from visitor studies at similar sites in the UK (see **Table 5.1** above). It should be noted that Natural England has been consulted on this approach²⁹, and observed that³⁰:

- *"Natural England would not consider that specific visitor surveys would be necessary and that existing datasets could be relied on. We agree with your reasoning on this approach based on distance of the Chesterfield Local Plan area and the size of the Peak District and its characteristics as a national attraction which would limit the effectiveness and value of any surveys that the Council might be able to implement";* and
- *"Natural England would require the local plan policies to include the provision of Green Infrastructure (GI) within new developments and the protection and enhancement of the GI network. We would not however require GI as mitigation for public access/disturbance effects on the European sites".*

5.2 Incorporated Mitigation

The Pre-Submission Local Plan includes several policies relating to the protection and enhancement of green networks and the provision and protection of green space at and near developments, including Policies LP1

²⁹ Letter from Wood to NE dated 11 October 2018, ref. 38746L008i1

³⁰ Letter from NE to Wood dated 1 November 2018, ref. 262024

and LP16 (*“Development proposals should demonstrate that they will not adversely affect, or result in the loss of, green infrastructure, unless suitable mitigation measures or compensatory provision are provided”*). Collectively, and with other Local Plan policies relating to masterplanning of strategic allocations (e.g. Policies SS1 to SS6) and biodiversity (e.g. Policies LP17 and LP20) and design (e.g. Policy LP21), these policies will safeguard semi-natural green space within the Borough and increase provision in connection with developments and population growth. This will help to reduce visitor pressure on European sites associated with the implementation of the Local Plan. As noted, however, NE have indicated that it *“...would not however require GI as mitigation for public access/disturbance effects on the European sites”*.

5.3 Birklands and Bilhaugh SAC

Baseline

Public access / disturbance is identified as a pressure affecting the Birklands and Bilhaugh SAC in the SIP, with a range of potential effect pathways identified (e.g. *“[public access] can cause localised soil compaction, nutrient enrichment, direct loss of trees (vandalism, health and safety), introduction of non-native species (including new diseases) as well as an altered ecological succession.”*). However, it should also be noted that most of the concerns relating to visitor pressure have been associated with the location of the visitor centre within the SAC; , it is understood that the visitor centre has been relocated (summer 2018) and the woodland in this area is being restored and the expectation is that this, together with the future management of the National Nature Reserve (NNR) and Country Park by an RSPB-led partnership, will create the conditions for attaining and maintaining favourable conservation status (access management is a significant factor influencing the ecological effects of recreational visits).

It is estimated that the Sherwood Forest NNR attracts ~350 000 visitors annually³¹. Specific visitor surveys at the SAC have not been undertaken for the Local Plan. Data are available from surveys undertaken by Nottinghamshire County Council (NCC) in 2015, although the survey approach limits some of the conclusions that can be drawn with regard to the site catchment and recreational use. In broad summary, the 2015 survey suggests that:

- the majority of visitors (~70%) visited once a month or less, with over 56% visiting three times a year or less;
- the catchment for the site appears relatively large, reflecting the absence of urban areas near the SAC, the NNR’s role as a regional attraction, and the survey approach;
- visitor postcodes were strongly clustered around Mansfield, Retford and north Nottingham; and
- few visitors were recorded from Chesterfield Borough.

The 2015 survey data do not allow for the identification of a definitive ‘75% distance’ (see **Section 5.1**), and so appropriate proxies are employed based on approximate catchments established for other heathland and woodland sites (see **Section 5.1**) and available assessment information from the HRAs of other Local Plans that have been recently completed (notably for Newark and Sherwood, Mansfield, Ashfield and Gedling). As noted in **Section 5.1**, existing studies of several inland sites suggest that the distance within which 75% of visitors live (particularly regular visitors) is typically less than 8km, and we are not aware of any occasions where ‘significant effect buffers’ of over 10km have been employed in a Local Plan for inland sites.

Assessment

The Birklands and Bilhaugh SAC is approximately 15km from the Borough at its closest point. As noted above, specific visitor surveys at the SAC have not been undertaken for the Local Plan; existing data suggest

³¹ <http://www.nottinghamshire.gov.uk/newsroom/news/a-firm-foundation-for-a-new-era-at-sherwood-forest>

that visitors from the Borough will periodically use the SAC but determining the significance of this requires consideration of potential effects associated with growth in other districts (as effects 'alone' as a result of the proposed Local Plan allocations will self-evidently not occur).

Two of the four local authorities within 10km of the SAC (Newark and Sherwood and Mansfield) have recently completed, or have nearly completed, reviews of their local plans. The HRAs of these plans have considered the potential for the SAC to be affected by specific allocations and by broader quantum of development 'in combination' effects. In summary:

- The HRA of the Newark and Sherwood Local Plan Review (July 2017) concluded that *"development proposals in the LPR [Local Plan Review] include the provision of Suitable Alternative Natural Greenspaces (SANGs) and restored heathland which will alleviate visitor pressure at the SAC" and that "...it is therefore considered unlikely that public access associated disturbances will undermine the integrity of the SAC because of developments in the LPR".* The HRA also indicated that Natural England had agreed with this conclusion (letter dated 08 March 2017, Ref 206193).
- The interim HRA of the emerging Mansfield Local Plan (HRA Feb 2016; Publication Draft Local Plan expected 2018) concluded that *"...a likely significant effect on the SAC would not arise (either alone or in combination) via recreation due to new housing in Mansfield district" based on the plan's "contribution towards the protection and enhancement of integrated green infrastructure networks...[and as a] forthcoming community open space assessment of the Borough also includes provision for access to natural green space."*

Consequently, for the local plans covering those areas nearest to the SAC, the provision of SANGs and policies relating to green infrastructure are considered sufficient to ensure that there will be either no significant effects, or no significant adverse effects, on the Birklands and Bilhaugh SAC. Specific additional mitigation (such as the funding of wardening schemes, which have been proposed at some coastal SPAs suffering from particularly high levels of visitor pressure) have not been considered necessary.

The proposed site allocations within Chesterfield Borough are beyond the range where significant effects would typically be considered possible due to visitor pressure. In consequence, whilst the occupants of the Boroughs' new development may visit the Birklands and Bilhaugh SAC (and so have the potential to contribute to any significant visitor pressure effects 'in combination' with other plans), the distance of the proposed allocations from the SAC will ensure that the Local Plan will clearly not have an adverse effect on integrity – and in reality the appropriate conclusion following this assessment would be 'no significant effects' alone or in combination.

5.4 South Pennine Moors SAC / Peak District (South Pennine Moors Phase 1) SPA / Peak District Dales SAC

Baseline

The South Pennine Moors SAC and Peak District (South Pennine Moors Phase 1) SPA are largely coincident and are both vulnerable to the effects of visitor pressure. In consequence, the sites are considered together in this section (this is consistent with the SIP); the Peak District Dales SAC is also considered here as the available baseline data and assessment arguments are largely the same.

Public access / disturbance is identified as a pressure affecting the features of the SACs and SPA in the SIPs³², with the South Pennine Moors SAC / Peak District (South Pennine Moors Phase 1) SPA SIP noting that

³² Although it should be noted that, for the SPA, the SIP identifies the 'breeding bird assemblage' as being vulnerable to the effects of recreational pressure rather than (as for all other pressures) the qualifying features (i.e. golden plover, merlin and short-eared owl).

"Disturbances/activities located in sensitive site areas or at sensitive times of the year (e.g. bird breeding season or during heavily waterlogged periods) can have a negative impact upon notified features. Particular activities which impact include rock climbing, walking (incl. dog walkers), legal activities (byway usage), hang-gliding and the flying of model aircraft". However, it should be noted that no SSSI units associated with the sites currently identify recreational pressure as being a factor in an unfavourable condition assessment, and previous HRAs³³ note that there is a general acceptance that future visitor numbers can be managed through the provisions of the Peak District National Park Authority (PDNPA) Management Plan and Recreational Strategy, and the powers vested in the PDNPA as Rights of Way and Access Authority by the Countryside and Rights of Way Act (CROW) Act 2000.

Visitor data that specifically relate to the SACs or SPA are not available, and visitor surveys have not been undertaken for this HRA. As the sites are almost entirely within the Peak District National Park (PDNP), the available visitor data for the National Park have been reviewed³⁴, although it should be noted that the PDNP covers a much greater area than the SACs and SPA. Overall, these surveys suggest that there are approximately 21 million annual visitors to the PDNP, of which around 80% are 'day visitors' (i.e. visiting for the day from their home location). The 2014 visitor survey data did not identify any visitors from Chesterfield Borough, although it should be noted that the 2014 visitor survey locations did not cover the site units closest to the Borough (i.e. those associated with Brampton East Moor and East Moor). The available data do not allow for the identification of a definitive '75% distance' (see **Section 5.1**), and so appropriate proxies are employed based on approximate catchments established for other European sites (see **Section 5.1**) and available assessment information from the HRAs of other local plans that have been recently completed (notably for the Derbyshire Dales, North East Derbyshire, Amber Valley, and for the Greater Nottingham Aligned Core Strategies). As noted, existing studies of several inland sites suggest that the distance within which 75% of visitors live (particularly regular visitors) is typically less than 8km, and we are not aware of any occasions where 'significant effect buffers' of over 10km have been employed in a local plan for inland sites.

Assessment

The nearest unit of the South Pennine Moors SAC and Peak District (South Pennine Moors Phase 1) SPA (Harewood Moor) is just over 3.4 km from the Borough boundary (near Holymoorside); most of the borough is within 15km, and hence most of the allocations (although the largest strategic allocations around Staveley are over 9km from the sites). The closest allocations are Allocation 130 (Linacre Road; 300 dwellings); and Allocations 293 – 295 (Dunston Grange, 1200 dwellings). The Peak District Dales SAC is at least 12km from the Borough boundary. As a result, visitors to the SPA / SACs from the Borough will be mostly low-frequency rather than high-frequency users (i.e. 'day visitors', at the site for more than three hours but infrequently, rather than visiting the site several times per week or per month). The locations of the proposed allocations will have little relevance in this regard. The potential effect of the Local Plan is therefore through broad but diffuse regional in combination effects, some of which will be linked to the plan but most of which will simply be a consequence of population growth.

The Peak District sites are particularly large, and the population within 15 km is substantial. The predicted growth in Chesterfield is an inconsequential proportion of this. Indeed, it remains inconsequential even if the area of the South Pennine Moors SAC and Peak District (South Pennine Moors Phase 1) SPA that is within 15km of Chesterfield is considered in isolation. Evidence provided by the three local plan HRAs referred to above is particularly relevant to the assessment of the Chesterfield Borough Local Plan, specifically:

³³ E.g. the HRA for the Greater Nottingham Aligned Core Strategies, available at: <https://www.broxtowe.gov.uk/media/3785/habitats-regulations-assessment-june-2012.pdf>

³⁴ Peak District National Park Visitor Surveys for 2005 and 2014, available at <http://www.peakdistrict.gov.uk/publications/visitorsurvey> and <http://www.peakdistrict.gov.uk/publications/visitor-survey-2014>; Peak District National Park State of the Park STEAM analysis, available at <http://www.peakdistrict.gov.uk/microsites/sopr/welcoming/tourism>.

- the HRA of the Derbyshire Dales Local Plan (2016), since this LPA is closest to many of the Peak District sites;
- the HRA of the North East Derbyshire Local Plan (at Examination), as this LPA area lies adjacent to the SAC / SPA and between Chesterfield and the Peak District;
- the HRAs of the Amber Valley Borough Council Core Strategy (2013) and Local Plan (in preparation; draft screening completed 2017), since this area is similar to Chesterfield Borough in terms of distance from the sites and character; and
- the HRA of the Greater Nottingham Aligned Core Strategies, as this includes a large urban area located slightly further away from the Peak District.

In summary:

- The HRA of the Derbyshire Dales Local Plan (2016) concluded that the plan would have "*no adverse effect*" based on: the relatively low accessibility of the nearest units of the SAC / SPA (few car parks or footpaths); the availability of accessible natural green space within the LPA area, away from the SAC / SPA; and the existing PDNPA Management Plan and Recreational Strategy.
- The HRA of the North East Derbyshire Local Plan (at Examination) has concluded that this plan will have "[no] *significant effect*" as a result of public access based on: the size of the SAC / SPA; the small scale of population growth (6,600 homes); the relative scale of this growth compared to the number of visitors; the provision of green space within the Borough; and the current apparent absence of adverse effects due to public access.
- The HRA screening of the Amber Valley Local Plan (in preparation) concluded that "*it is unlikely that development proposed within the Amber Valley Borough Draft Local Plan will have any effect on site integrity either alone or in-combination*" as "*...no discernible effect in respect of public access or disturbance, or the increased use of the site by vehicles is likely given that the closest growth proposed through the Amber Valley Borough Local Plan is 15km to the south of the site (and substantially further by road) with most of the 4,000 homes and employment development allocated being in excess of 15km from the site*".
- The HRA of the Amber Valley Borough Council Core Strategy (2013) concluded that "*the possibility of adverse effects from recreational pressure arising can be screened out of the HRA*" due to: distance; the small scale of population growth and relative scale of this to the number of visitors; and the existing site management measures.
- The HRA of the Greater Nottingham Aligned Core Strategies also concluded that there would be no significant effect on the Peak District sites, noting correspondence with key Natural England and PDNPA officers which did not identify concerns regarding predicted future increases in visitor numbers, and which expressed confidence that the existing range of management initiatives and powers under the CROW Act would continue to be sufficient.

The Chesterfield Borough Local Plan includes measures that will help minimise its contribution to visitor pressure at the Peak District sites, including policies relating to the protection and enhancement of the green infrastructure; given that the closest allocations are within 5km of the edge of the Peak District sites these may have a marginal positive effect in moderating use by regular users with dogs. However, NE have indicated that it "*...would not however require GI as mitigation for public access/disturbance effects on the European sites*". In consequence, whilst it is recognised that the Borough's residents will visit the Peak District sites (and so have the potential to contribute to visitor pressure effects 'in combination' with other plans), the Local Plan will not have an adverse effect on integrity (alone or in combination) due to:

- the relatively small scale of growth in the Borough supported by the Local Plan;

- the limited exposure of the interest features (due to the physical characteristics of the European sites and the management measures that reduce or control exposure); and
- the policy measures included within the Local Plan (particularly as they relate to green space provision).

5.5 Sherwood Forest ppSPA

Baseline

There is no SIP currently available for the Sherwood Forest ppSPA but it is likely that public access / disturbance would be identified as a pressure affecting the features of the site if designated. However, due to the size and variability of the site, the levels of public access will vary considerably from unit to unit, and there are no existing data on recreational use of the majority of the units that would form a future SPA; it is not therefore possible to identify particular hotspots beyond the qualitative identification of those areas obviously providing recreational facilities (e.g. Forestry Commission woodland such as the Sherwood Pines Forest Park, National Trust land and Country Parks such as Sherwood Forest Country Park and Rufford Country Park). There are likely to be other areas of public access that cannot necessarily be determined from analysis of mapping and public rights of way (PRoWs). In terms of condition, it is arguable that the current levels of visitor pressure are not so severe that the suitability of the site for designation as an SPA is threatened, although obviously designation may be spurred by anticipated deterioration as much as current value.

The RSPB suggests that there are around 70 pairs of breeding nightjar within the 'Sherwood Forest Futurescape'³⁵, which broadly corresponds with the areas of the ppSPA. This species is generally reliant on heterogenous landscape of heathland and open woodland, and as a ground-nesting bird is particularly sensitive to disturbance (especially from dogs); studies suggest that nest failure is more likely in areas that are more popular with dog-walkers³⁶. Data on woodlark populations within the ppSPA are variable. Data from the woodlark National Breeding Surveys (2006)³⁷ identified around 33 territories in the area broadly covered by the ppSPA (although this was not a systematic survey of the site); the same paper estimated the total number of territories in Lincolnshire, Nottinghamshire and Yorkshire (principally around the Sherwood Forest area) to be 285. Around 9,000 hectares of habitat in the ppSPA is potentially suitable for the species; in the Sherwood area the species is strongly linked with heathland and plantation woodland, and its habitat requirements are principally lowland heathland with areas of short grassland and bare ground, nearby open woodland, and a high abundance of invertebrate prey. As with nightjar, the ground-nesting woodlark is particularly sensitive to disturbance.

As noted, visitor data that specifically relates to the areas proposed for the ppSPA are not available, and visitor surveys have not been undertaken for this HRA due to the size of the ppSPA and the uncertainty over its future designation. In accordance with Natural England guidance³⁸, therefore, a 'risk-based' approach to assessment has been employed with appropriate proxies used based on the approximate catchments established for other European sites (see **Section 5.1**) and available assessment information from the HRAs of other local plans that have been recently completed (notably for the Newark and Sherwood Local Plan).

³⁵ RSPB Futurescapes Project: Sherwood Forest; available at http://ww2.rspb.org.uk/Images/sherwood-forest_tcm9-281889.pdf

³⁶ Langston, R.H.W., Liley, D., Murison, G., Woodfield, E. & Clarke, R.T. (2007) What effects do walkers and dogs have on the distribution and productivity of breeding European Nightjar *Caprimulgus europaeus*? *Ibis* 149, 1: 27–36

³⁷ Conway *et al.* (2009), *Bird Study* 56: 310-325

³⁸ NE (2014) *Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region*; available at <http://www.mansfield.gov.uk/CHttpHandler.ashx?id=7529&p=0>

Assessment

The Natural England guidance for the ppSPA identifies the following risk factors for the site:

- disturbance to breeding birds from people, their pets and traffic;
- loss, fragmentation and/or damage to breeding and/or feeding habitat;
- bird mortality arising from domestic pets and/or predatory mammals and birds;
- bird mortality arising from road traffic and/or wind turbines; and
- pollution and/or nutrient enrichment of breeding habitats.

Pollution and nutrient enrichment is considered in the 'Air Quality' section of this report (see **Section 5**). None of the remaining factors are likely to result from the implementation of the Local Plan due to the distance of the ppSPA from the Borough and the nature of the Local Plan, with the exception of "*disturbance to breeding birds from people, their pets and traffic*".

If a very precautionary buffer of 8km is used, then there are no proposed Chesterfield allocations within 8km of the indicative ppSPA boundary; the closest allocations are over 10km away, around Staveley. However, it is worth noting that the HRA of the Newark and Sherwood Local Plan employed smaller buffers when considering the potential for significant effects from allocations (2 – 5km), on the basis that the most significant risk factor for disturbance of nightjar was the presence of dogs³⁹, and "*approximately 79% of dog walkers travel no further than 3km to reach the location at which they walk their dogs*" (from the Natural England Monitor of Engagement with the Natural Environment survey). Application of a 5km buffer would exclude all Chesterfield allocations.

The actual effects of growth in the Borough on the features of a future SPA cannot be robustly quantified at this point and it is likely that a number of factors (particularly regards the future management of any SPA) will have a significant influence on this. However, the Local Plan will contribute to an increase in visitors to the areas covered by the ppSPA over the plan period.

As with the assessment of the Birklands and Bilhaugh SAC, the HRAs of other local plans are relevant to the assessment, particularly Newark and Sherwood, and Mansfield. As noted (see **Section 5.3**), the current policy position for the Local Plans covering those areas nearest to the ppSPA is that the provision of SANGs and policies relating to green infrastructure are currently considered sufficient to ensure that there will be either no significant effects, or no significant adverse effects, on the ppSPA. Specific additional mitigation (such as the funding of wardening schemes, which have been proposed at some coastal SPAs suffering from particularly high levels of visitor pressure), have not been considered necessary.

The Chesterfield Borough Local Plan provides a strong policy framework for the protection and enhancement of green infrastructure. The proposed site allocations within Chesterfield Borough are beyond the range where significant effects would typically be considered possible due to visitor pressure. In consequence, whilst the occupants of the Boroughs' new development may visit the ppSPA (and so have the potential to contribute to any significant visitor pressure effects 'in combination' with other plans), the distance of the proposed allocations from the SAC will ensure that the Local Plan will clearly not have an adverse effect on integrity (indeed, it is arguable that any potential effects will in reality be too small to be considered 'significant')

³⁹ Murison, G. (2002) The impact of human disturbance on the breeding success of nightjar *Caprimulgus europaeus* on heathlands in south Dorset, England. *English Nature*, Peterborough.

6. Appropriate Assessment: Air Quality

6.1 Assessment Approach

The principal source of air pollution related to the implementation of the Local Plan will be that associated with changing patterns of vehicle use due to the promotion of new development (since the Local Plan does not provide for any new significant point-sources). Historically, the Department of Transport's Design Manual for Roads and Bridges (DMRB)⁴⁰ threshold of an increase of over 1,000 vehicles / day in annual average daily traffic (AADT) volumes was used to scope the need for air quality assessments; if predicted AADT increases from a development or plan were less than 1,000 then no air quality assessment was considered necessary. However, recent case law (the 'Wealden Case'⁴¹) has altered the established approach to air quality assessments for European sites.

The case concerned the cumulative impact of local plans produced by multiple councils impacting Ashdown Forest SAC. In this instance, the HRA of the Joint Core Strategy (JCS) prepared by Lewes District Council and South Downs National Park Authority scoped out an air quality assessment for the Ashdown Forest SAC as the AADT increases associated with the JCS were below 1,000. This did not, however, account for increases associated with other local plans and the Court determined that the threshold would be breached if considered 'in combination' with allocations in the Wealden District Council Core Strategy. As a consequence of this decision, it is important that local authorities thoroughly consider the cumulative effect of traffic associated with multiple developments. This is a developing area, so there are currently no guidelines as to the catchment for inclusion into the air quality assessment, nor on the extent to which thresholds can still be applied (particularly where plan contributions to traffic flows are negligible).

The Department of Transport's *Transport Analysis Guidance*⁴² states that "beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant" and therefore this distance is used to determine the potential exposure of European sites near roads to effects associated with the Local Plan. The sites considered potentially vulnerable to air quality changes associated with the Local Plan are those with features that are potentially sensitive to this aspect, with site units that are within 200m of a classified road, i.e.:

- Bilhaugh and Birklands SAC;
- Gang Mine SAC;
- Peak District Dales SAC;
- South Pennine Moors SAC; and
- Peak District Moors (South Pennine Moors Phase 1) SPA.

The potential for effects on the Sherwood Forest ppSPA is also appropriately considered.

The DMRB threshold of an increase of over 1,000 vehicles / day in annual average daily traffic (AADT) is initially used as a coarse screening tool; if data (either from bespoke modelling or existing studies) suggests that this value may be exceeded (alone or in combination) then additional traffic and air quality modelling is

⁴⁰ <https://www.gov.uk/guidance/standards-for-highways-online-resources#the-design-manual-for-roads-and-bridges>

⁴¹ Wealden District Council v. Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority [2017] EWHC 351

⁴² See

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/638648/TAG_unit_a3_envir_imp_app_dec_15.pdf; accessed 12/11/18.

used to determine whether the anticipated traffic increase will result in an increase of >1% of the minimum critical load⁴³ for the relevant habitats, or 1% of the annual mean critical level⁴⁴ (this is the accepted threshold for 'significant effects' to be possible; the Institute of Air Quality Management (IAQM) position statement on air quality effects⁴⁵ notes that "it is the position of the IAQM that the use of a criterion of 1% of an assessment level in the context of habitats should be used only to screen out impacts that will have an insignificant effect. It should not be used as a threshold above which damage is implied and is therefore used to conclude that a significant effect is likely.").

6.2 Incorporated Measures

The potential for effects on distant European sites due to air quality is difficult for a Local Plan to specifically mitigate, since the decision to travel by car outside the LPA area is typically made in the context of regional and national travel conditions rather than local provision of sustainable travel options. However, the promotion of sustainable transport is woven throughout the Local Plan and Policy LP23 specifically seeks to influence travel behaviour through development design, so that travel needs can be met other than by private car.

6.3 Birklands and Bilhaugh SAC

Baseline Summary

The Birklands and Bilhaugh SAC is approximately 15km from the Borough at its closest point. The feature of the SAC (Old acidophilous oak woods with *Quercus robur* on sandy plains) is considered sensitive to air quality impacts – specifically, based on the SIP, atmospheric nitrogen deposition. Although N-deposition is not specifically identified as a factor affecting the associated SSSI units that are in 'unfavourable' or 'unfavourable recovering' condition, the critical loads for N-deposition for this feature (based on APIS) are exceeded for the site (see **Table 6.1**). The critical levels for NOx are provided in **Table 6.2**.

Table 6.1 Summary of N-deposition and critical loads for Birklands and Bilhaugh SAC, based on APIS

| Feature | Critical Loads (kg N/ha/yr) | Current N-deposition (kg N/ha/yr) | | |
|--|-----------------------------|-----------------------------------|------|---------|
| | | Max | Min | Average |
| Old acidophilous oak woods on sandy plains | 10 – 15 | 26.6 | 26.6 | 26.6 |

Table 6.2 Summary of NOx concentrations and critical levels for Birklands and Bilhaugh SAC, based on APIS

| Feature | Critical Levels (µg/m ³) | Current NOx concentration (µg/m ³) | | |
|--|--------------------------------------|--|-------|---------|
| | | Max | Min | Average |
| Old acidophilous oak woods on sandy plains | 30 (annual); 75 (24hr) | 19.7 | 17.03 | 17.69 |

⁴³ The critical load essentially reflects N-deposition from NOx and other sources; the critical level is associated with total atmospheric NOx levels.

⁴⁴ *Ibid.* Footnote 24

⁴⁵ IAQM (2016). *Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats*. Institute of Air Quality Management, London.

This exceedance is thought to be due to general diffuse air pollution rather than specific roads or point sources; the only road within 200m of the site is the relatively minor B6034.

Assessment of Effects

The B6034 is not a route that is likely to receive potentially significant increases in vehicle movements as a result of the Local Plan. It is a small road running between the A616 and the A6075, and is most likely to be used by local traffic wishing to avoid the A614 when travelling north or south, and by visitors to the Sherwood Forest Visitor Centre (which will include visitors from the Borough). However, the Visitor Centre has been moved to the edge of Edwinstowe, which will further reduce the likelihood of visitors originating from the Borough using the road.

Specific traffic assessments for the B6034 have not been undertaken for the Pre-Submission Local Plan; the minor nature of this road and its distance from the Borough do not allow for robust traffic modelling in this regard. However, traffic and air quality studies for the B6034 have been undertaken in connection with the Newark and Sherwood Local Plan, specifically in relation to the HRA of a proposed housing allocation and planning application at the former Thoresby Colliery, Edwinstowe, which is located approximately 200m to the east of the SAC. These studies are reported in the following documents:

- Redmore Environmental (2017). *Air Quality Technical Note (Ecological Impacts): Former Thoresby Colliery, Edwinstowe*. Report for Harworth Estates Mines Property Ltd. ref 1459-1r1. Redmore Environmental, Manchester.
- Lepus Consulting (2017). *Habitats Regulations Assessment of the Newark and Sherwood Local Plan Review: HRA Screening Document*. Report for Newark & Sherwood District Council, ref NSDC re-screen HRA _4_ 070717JE.docx. Lepus Consulting, Bath.

These assessments considered possible scenarios for traffic increases on the B6034. In summary, the assessments concluded that even under very precautionary scenarios for traffic movements, the AADT increase (over the future predicted baseline) along the B6034 as a result of the Thoresby scheme would only be 240. The predicted change in annual mean NO_x concentration at modelled locations on the SAC boundary as a result of this was less than 1% of the critical level (0.06 – 0.09 µg/m³, 0.2 – 0.3%), with the predicted annual nitrogen deposition rates also being substantially below 1% of the critical load (predicted changes of 0.00 – 0.01 kgN/ha/yr, 0.04 – 0.07% of the lower critical load (10 kgN/ha/yr) for the habitat. On this basis, the HRA of the Newark and Sherwood Local Plan concluded that there would be no significant effects on the SAC as a result of air quality changes associated with the plan.

As the contribution of the Chesterfield Borough Local Plan to traffic movements on the B6034 will be minimal, it is clear that the growth proposed by the plan will not result in increases in AADT of over 1,000 in combination with other plans or projects. Furthermore, the accepted threshold for 'significant effects' to be possible is an increase of >1% of the minimum critical load; in this instance, this would be approximately 0.1 kg/ha/yr. Although it is not simple to apply 'rule of thumb' estimates to relationships between traffic volumes and N-deposition (as this is influenced by a number of factors), it is worth noting that the DMRB guidance regarding air quality thresholds is based on the assumption that 1,000 extra vehicles is equivalent to ~0.01 kg N/ha/yr (this is obviously a coarse figure and there are other factors that come into play such as the emissions factors used for opening year/ wind direction etc./ number of HGVs / speed etc.). Recent air quality modelling by Wood of a new link road elsewhere in the UK found that an increase of ~7,000 AADT increased nitrogen deposition by 0.21 kg N/ha/yr at the worst receptor point (at the immediate kerbside), and that by 25m from the road the increase in N-deposition was zero.

On this basis, it is clear that the Local Plan will have no adverse effects on the integrity of the Birklands and Bilhaugh SAC alone or in combination, and in reality it is evident that there will be no significant effects alone or in combination due to changes in air quality associated with the local plan.

6.4 Gang Mine SAC

Baseline Summary

Gang Mine SAC is approximately 14km from the Borough at its closest point. The feature of the SAC (Calaminarian grasslands of the *Violetalia calaminariae*) is considered sensitive to air quality impacts – specifically, based on the SIP, atmospheric nitrogen deposition, although the SIP also notes that “*the sensitive features are currently considered to be in favourable condition on this site*”. The critical loads for N-deposition for this feature (based on APIS) are exceeded for the site (see **Table 6.3**). The critical levels for NOx are provided in **Table 6.4**.

Table 6.3 Summary of N-deposition and critical loads for Gang Mine SAC, based on APIS

| Feature | Critical Loads (kg N/ha/yr) | Current N-deposition (kg N/ha/yr) | | |
|---|-----------------------------|-----------------------------------|------|---------|
| | | Max | Min | Average |
| Calaminarian grasslands of the <i>Violetalia calaminariae</i> | 10 – 15* 15 – 25** | 25.6 | 25.6 | 25.6 |

* Critical loads for Non-Mediterranean dry acid and neutral closed grassland

** Critical loads for Sub-Atlantic semi-dry calcareous grassland

Table 6.4 Summary of NOx concentrations and critical levels for Gang Mine SAC, based on APIS

| Feature | Critical Levels (µg/m ³) | Current NOx concentration (µg/m ³) | | |
|---|--------------------------------------|--|-------|---------|
| | | Max | Min | Average |
| Calaminarian grasslands of the <i>Violetalia calaminariae</i> | 30 (annual); 75 (24hr) | 15.63 | 15.63 | 15.64 |

Assessment of Effects

There are two minor classified roads within 200m of the SAC, the B5035 and B5036. Specific traffic assessments for these roads have not been undertaken for the Pre-Submission Local Plan; the minor nature of the roads and their distance from the Borough constrain robust traffic modelling in this regard, and it is self-evident that neither road is likely to experience potentially significant increases in vehicle movements as a result of the plan due to their distance from the Borough and location.

Traffic and air quality studies for the B5036 have been undertaken in connection with the Derbyshire Dales Local Plan; these are reported in the HRA for the Local Plan (Clearlead (2016). *Derbyshire Dales Local Plan – Submission Habitats Regulations Report. Report for Derbyshire Dales District Council (DDDC)*. Clearlead, Devon). The assessments in this HRA considered the potential increases in traffic on this road associated with the Derbyshire Dales Local Plan and the predicted growth in the neighbouring authority areas (so this did not explicitly include growth in Chesterfield). In summary, the ‘in combination’ estimated increase in AADT on the B5036 was 1,020, above the threshold of significance of changes in 1,000 AADT or more. Air quality modelling determined that the effect on nitrogen deposition of this increase in traffic flow would be an increase of 0.003 kg N/ha/yr, which is 0.02 – 0.03% of the critical load for the Calaminarian grasslands of the *Violetalia calaminariae* feature.

It is likely that the AADT figure would increase slightly if the effects of the Chesterfield Borough Local Plan were comprehensively modelled; however, any increase in AADT over that predicted by the Derbyshire Dales Local Plan HRA would be very small, given the minor nature of the road and its distance from the Borough

and there would be no risk of this increase resulting in an exceedance of the 1% of critical load threshold for nitrogen deposition.

On this basis, the Local Plan will have no adverse effects on the integrity of the Gang Mine SAC due to changes in air quality, alone or in combination.

6.5 South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA

Baseline Summary

The features of the Peak District Moors (South Pennine Moors Phase 1) SPA (golden plover, merlin and short-eared owl) are not themselves sensitive to air quality changes, although there is a conceptual pathway for effects if air quality changes alter key habitats⁴⁶; the South Pennine Moors SAC and Peak District Moors (South Pennine Moors Phase 1) SPA are therefore considered together in this section, with the assessment focusing on the habitats of the SAC. For simplicity, the sites are referred to collectively in this section as 'the South Pennine Moors sites' unless reference to specific interest features is being made.

The closest areas of the South Pennine Moors sites to the Borough run along the north-western boundary of the North East Derbyshire District Council (NEDDC) administrative area, generally over 14km from the Borough but ~10km away at the closest point. The Chesterfield urban area sits between the sites and the Chesterfield Borough boundary.

The vast majority of the site units in the areas of the South Pennine Moors closest to the Borough are in 'favourable' or 'unfavourable recovering' condition; air quality (the impact of atmospheric nitrogen deposition) is identified as a pressure in the SIP for all of the SAC features (Northern Atlantic wet heaths with *Erica tetralix*; European dry heaths; Blanket bogs (* if active bog); Transition mires and quaking bogs; Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles) although the SIP and SSSI unit condition assessments do not identify any specific areas where significant effects on site features have been identified as a result of this mechanism. The critical loads for N-deposition for these features (based on APIS) are shown in **Table 6.5**. The critical levels for NO_x are provided in **Table 6.6**.

With regard to exposure, the South Pennine Moors sites south of Sheffield are crossed by a number of roads, most notably the A619 (Chesterfield to Baslow), the A621 (Sheffield to Baslow), the A625 (Sheffield to Hathersage), the B6054 (Chesterfield to Hathersage) and the B6050 (Chesterfield to Baslow). Those routes most likely to be used by travellers heading to or from Chesterfield Borough are the A619, the B6054, and the B6050. Based on the SSSI unit condition assessments (which provide an indication of the habitats present in each unit), it is not possible to exclude any of the SAC habitats from areas within 200m of these roads.

⁴⁶ It should be noted, however, that N-deposition generally results in relatively subtle changes in vegetation communities rather than substantial shifts of habitat type or structure; the effect of these changes on birds is often limited, and is typically dwarfed by other factors, particularly habitat management.

Table 6.5 Summary of N-deposition and critical loads for South Pennine Moors SAC, based on APIS

| Feature | Critical Loads (kg N/ha/yr) | Current N-deposition (kg N/ha/yr) | | |
|--|-----------------------------|-----------------------------------|------|---------|
| | | Max | Min | Average |
| Northern Atlantic wet heaths with <i>Erica tetralix</i> | 10 – 20 | 37.5 | 21.6 | 25.8 |
| European dry heaths | 10 – 20 | 37.5 | 21.6 | 25.8 |
| Blanket bogs (priority feature if active bog) | 5 – 10 | 37.5 | 21.6 | 25.8 |
| Transition mires and quaking bogs | 10 – 15 | 37.5 | 21.6 | 25.8 |
| Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> | 10 – 15 | 52.4 | 31.6 | 39.4 |

Table 6.6 Summary of NOx concentrations and critical levels for South Pennine Moors SAC, based on APIS

| Feature | Critical Levels (µg/m ³) | Current NOx concentration (µg/m ³) | | |
|--|--------------------------------------|--|-------|---------|
| | | Max | Min | Average |
| Northern Atlantic wet heaths with <i>Erica tetralix</i> | 30 (annual); 75 (24hr) | 24.93 | 10.55 | 13.7 |
| European dry heaths | 30 (annual); 75 (24hr) | 24.93 | 10.55 | 13.7 |
| Blanket bogs (priority feature if active bog) | 30 (annual); 75 (24hr) | 24.93 | 10.55 | 13.7 |
| Transition mires and quaking bogs | 30 (annual); 75 (24hr) | 24.93 | 10.55 | 13.7 |
| Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> | 30 (annual); 75 (24hr) | 24.93 | 10.55 | 13.7 |

Assessment of Effects

As noted above, the routes most likely to be used by travellers heading to or from Chesterfield Borough are the A619, the B6054, and the B6050, although given the distance and location of these roads where they cross the SAC from the Borough it is likely that the contribution of the Local Plan to any traffic increases will be small.

Specific traffic assessments for these roads have not been undertaken for the Local Plan, although traffic and air quality studies have been completed for the HRA of the emerging North East Derbyshire Local Plan and the Derbyshire Dales Local Plan. These reports are as follows:

- North East Derbyshire Local Plan studies:
 - ▶ Redmore Environmental (2018). *Ecological Air Quality Assessment: North East Derbyshire*. Report for Lepus Consulting. ref 1459-1r1. Redmore Environmental, Manchester⁴⁷.
 - ▶ Lepus Consulting (2018). *Habitat Regulations Assessment of the North East Derbyshire District Council Local Plan: Appropriate Assessment*. HRA Screening Document. Report for North East Derbyshire District Council, ref. LC-355 NEDCC AA_2_030418JE.docx. Lepus Consulting, Bath⁴⁸.

⁴⁷ Available at: <http://www.ne-derbyshire.gov.uk/index.php/resident/local-plan>

⁴⁸ Available at: <http://www.ne-derbyshire.gov.uk/index.php/your-council/document-library/local-plan-exam-library/03-supporting-docs-evidence-base/environment/2253-eb-env4c-habitats-regulation-assessment-appropriate-assessment/file>

- Derbyshire Dales Local Plan:
 - ▶ Clearlead (2016). Derbyshire Dales Local Plan – Submission Habitats Regulations Report. Report for Derbyshire Dales District Council. Clearlead, Devon⁴⁹

In summary, the North East Derbyshire Local Plan and the Derbyshire Dales Local Plan HRAs assessed the cumulative impact of local plan traffic growth on the surrounding highway network using industry standard models, including (for North East Derbyshire) TEMPro7.2. These models essentially apply growth factors for other (non-target) LPA areas, which may vary slightly compared to the housing (etc.) numbers actually predicted or proposed by the relevant LPA⁵⁰; however, the assumptions within the North East Derbyshire traffic studies (Lepus 2018) have been reviewed, and it is considered that this assessment provides a reasonable proxy for the effects of Chesterfield traffic growth (see **Appendix E** for review summary).

The North East Derbyshire studies considered the effect of the Local Plan allocations in combination with predicted housing growth in the adjacent LPA areas (including Chesterfield). These data indicate that the 'in combination' AADT increase on sections of the A619 (as well as other A-roads crossing the SAC) is over the 1,000 threshold; however, modelling for the B6054 and B6050 were not undertaken. Air quality modelling was subsequently undertaken for the A-roads crossing the SAC.

Traffic studies were undertaken for the A621 and A625 in connection with the Derbyshire Dales Local Plan (Clearlead 2016). These studies did not include the A619 or any B-roads on the basis that "with the exception of the A621 and A625, no other roads within 200m of a European site are a direct route between any Derbyshire Dales main settlements and any major conurbations and possible major destinations". In summary, the 'in combination' estimated increase in AADT on the A621 and A625 was 960 and 891 respectively, just below the 1000 threshold for possible significant effects. Additional air quality modelling was not therefore undertaken for the Derbyshire Dales Local Plan.

Air Quality modelling was completed for NEDDC following the traffic assessment. This model (Redmore Environmental 2018) concluded that the predicted changes in traffic volumes would have the following effects on NO_x concentrations and N-deposition.

- Annual mean NO_x concentrations would exceed 1% of the critical level in some modelled areas, but these exceedances would not coincide with the South Pennine Moors sites.
- N-deposition rates would exceed 1% of the critical loads for all interest feature habitats (see **Table 6.6** above); however, these exceedances would only occur within 10m of the roadside for the South Pennine Moors sites.

Redmore (2018) note that the exceedance of 1% of the critical load should be seen as a 'starting point' for the determining the significance of any effects, noting the guidance provided within the Institute of Air Quality Management (IAQM) position statement on air quality effects⁵¹ which states that:

"it is the position of the IAQM that the use of a criterion of 1% of an assessment level in the context of habitats should be used only to screen out impacts that will have an insignificant effect. It should not be used as a threshold above which damage is implied and is therefore used to conclude that a significant effect is likely."

⁴⁹ Available at:

<http://www.derbyshiredales.gov.uk/images/documents/L/Local%20Plan%20Examination%20Library/SD06%20HRA%20Submission%20December%202016.pdf>

⁵⁰ For example, inherent within the TEMPro 7.2 growth factors used for the NEDDC traffic modelling (Lepus 2018) is an allowance for an extra 4,014 households and an extra 3,001 jobs within Chesterfield Borough in the period 2018-2034. The rate of growth implied in the draft Chesterfield Borough Local Plan equates to an extra 4,672 dwellings and the equivalent of 4,400 extra jobs over the same period.

⁵¹ IAQM (2016). *Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats*. Institute of Air Quality Management, London.

The significance of the exceedance in critical loads was therefore considered in the Lepus (2018) appropriate assessment report. This report concluded that the exceedance associated with the North East Derbyshire growth would not result in significant effects (alone or in combination) for a number of reasons, including:

- the very limited proportion of the South Pennine Moors sites that are potentially affected by the modelled exceedance (~0.1% of South Pennine Moors SAC and 0.2% of Peak District Moors (South Pennine Moors Phase 1) SPA are within 10m of the affected roads);
- the likely absence of some qualifying features from the areas closest to the roads (for example, golden plover are unlikely to be reliant to any degree on habitats immediately adjacent to the roads);
- the absence of evidence of adverse effects due to atmospheric nitrogen deposition, despite critical loads currently being exceeded; and
- the limited contribution overall of road transport to N-deposition (road transport is responsible for 6-7% of nitrogen deposition at the European sites, whilst agriculture is responsible for approximately 50% (fertiliser and livestock combined)).

It should be noted that the Examination of the North East Derbyshire Local Plan is ongoing (November / December 2018); however, the representations received from Natural England as part of this Examination indicate that it concurs with this conclusion. As noted, it is considered that the traffic and air quality modelling undertaken for NEDDC provide a suitable proxy for the effects of the Chesterfield plan (in the absence of bespoke models) and so the conclusion of the North East Derbyshire Local Plan HRA holds for this HRA also. On this basis, the Pre-Submission Local Plan will have no adverse effects on the integrity of the South Pennine Moors SAC or Peak District Moors (South Pennine Moors Phase 1) SPA, alone or in combination.

Traffic heading to and from the Chesterfield Local Plan area that is associated with the growth supported by the local plan will contribute to the 'in combination' exceedances predicted for some roads (principally the A619, which is the cross-Pennine route most likely to be used by vehicles travelling to and from the Chesterfield Local Plan area based on its orientation). However, the Chesterfield Local Plan contribution to any 'in combination' effect will be smaller than that of North East Derbyshire and Derbyshire Dales Local Plans (due to the increased distance and location of allocations), and the critical loads for N-deposition at the South Pennine Moors sites will be exceeded irrespective of the proposals in the plan. Given the limited effect of the Chesterfield Local Plan, specific mitigation measures for potential effects associated with out-of-district travel are not considered essential to ensure that the European sites are safeguarded, and whilst the Local Plan's ability to influence out-of-district travel will be limited, sustainable travel principles are woven throughout the proposed Local Plan policies, particularly with regards to the strategic allocations.

6.6 Peak District Dales SAC

Baseline Summary

The closest units of the Peak District Dales SAC are:

- the woodland SSSIs around Matlock (Matlock Woods SSSI and Via Gellia Woodlands SSSI) that support the *Tilio-Acerion* forests of slopes, screes and ravines feature, which are approximately 12km from the Borough boundary at their closest point;
- Coombs Dale SSSI (calcareous grasslands east of Calver, approximately 11km from the Borough boundary); and
- Lathkill Dale SSSI (supports the *Tilio-Acerion* forests of slopes, screes and ravines feature, approximately 14 km from the Borough boundary, south of Bakewell).

Of these units, Coombs Dale SSSI is not within 200m of a road, and Lathkill Dale SSSI is only within 200m of a minor road ('Back Lane') which is too small to be represented in standard traffic models (and any traffic increases will self-evidently not be over 1000 AADT, alone or in combination); these components of the SAC are not considered further.

All of the site units associated with Matlock Woods SSSI and Via Gellia Woodlands SSSI are in 'favourable' or 'unfavourable recovering' condition, with the exception of two areas where the absence of scrub management has meant that grasslands here are classified as 'unfavourable – no change' or 'unfavourable – declining'. The 'Tilio-Acerion forests' feature of the SAC in this area is considered sensitive to air quality impacts although the SIP notes (for the site as a whole) that "*Nitrogen deposition exceeds site relevant critical loads. Survey work conducted locally was inconclusive about impacts*". The critical loads for N-deposition for this feature (based on APIS) are exceeded for the site (see **Table 6.7**). The critical levels for NO_x are provided in **Table 6.8**. Other features of the SAC are also sensitive to air quality changes, although the site units that these features are associated with are a substantial distance from the Borough boundary and are not considered to be exposed to potential significant effects (and so are not considered further).

Table 6.7 Summary of N-deposition and critical loads for Peak District Dales SAC, based on APIS

| Feature | Critical Loads (kg N/ha/yr) | Current N-deposition (kg N/ha/yr) | | |
|--|-----------------------------|-----------------------------------|------|---------|
| | | Max | Min | Average |
| Tilio-Acerion forests of slopes, screes and ravines | 15 – 20 | 55.6 | 40.6 | 46.7 |

Table 6.8 Summary of NO_x concentrations and critical levels for Peak District Dales SAC, based on APIS

| Feature | Critical Levels (µg/m ³) | Current NO _x concentration (µg/m ³) | | |
|--|--------------------------------------|--|-------|---------|
| | | Max | Min | Average |
| Tilio-Acerion forests of slopes, screes and ravines | 30 (annual); 75 (24hr) | 17.72 | 12.04 | 13.07 |

Assessment of Effects

There are two major roads within 200m of the SAC units near Matlock, the A6 and the A5012. The roads (where they pass the SAC) will not be primary routes for drivers travelling to or from the Chesterfield Borough area unless specifically heading to Matlock, and specific traffic assessments for these roads have not been undertaken for the Local Plan; as with the South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA, existing data from the HRAs of the North East Derbyshire and Derbyshire Dales Local Plans has been used as a proxy.

With regard to the Derbyshire Dales Local Plan, traffic and air quality studies for the A6 and A5012 were undertaken in for its HRA (Clearlead 2016). The assessments in this HRA considered the potential increases in traffic on this road associated with the Derbyshire Dales Local Plan and the predicted growth in the neighbouring authority areas (so this did not explicitly include growth in Chesterfield). **Table 6.9** contains the predicted figures that were reported for the A6 and A5012.

Table 6.9 Predicted traffic increases A6 and A5012 and changes in N deposition (from Clearlead 2016)

| Location / Road | Predicted 'in combination' increase in AADT | Increase in N deposition (kg N/ha/yr) | Increase in N deposition as % of critical load |
|-----------------------------------|---|---------------------------------------|--|
| Matlock Woods SSSI (A6) | 2131 | 0.004 | 0.03 |
| Via Gellia Woodlands SSSI (A5012) | 647 | n/a (<1000 AADT) | n/a (<1000 AADT) |

In summary, the 'in combination' estimated increase in AADT on the A6 near Matlock Woods SSSI was 2,131, above the 1,000 threshold; however, air quality modelling determined that the effect on nitrogen deposition of this increase in traffic flow would be an increase of 0.03% of the critical load for the *Tilio-Acerion* forests of slopes, screes and ravines feature. As with Gang Mine SAC, it is likely that the AADT figure would increase slightly if the effects of the Chesterfield Borough Local Plan were comprehensively modelled.

With regard to the NEDDC study (Lepus 2018), the following figures were reported for the A6 and A5012 near Matlock (**Table 6.10**):

Table 6.10 Predicted traffic increases A6 and A5012 and changes in N deposition (from Lepus 2018)

| Location / Road | Predicted 'in combination' increase in AADT | Increase in N deposition (kg N/ha/yr) | Increase in N deposition as % of critical load |
|-----------------------------------|---|---------------------------------------|--|
| Matlock Woods SSSI (A6) | 2004 | 0.16 | 1.06 |
| Via Gellia Woodlands SSSI (A5012) | 551 | n/a (<1000 AADT) | n/a (<1000 AADT) |

The predicted increase in AADT is slightly different from that predicted by DDDC, which is likely to reflect minor methodological variations; however, the modelled increase in N-deposition is quite different, which is likely to reflect differences in modelling locations and parameters.

As the NEDDC modelling suggests a more substantial increase these data are primarily relied on for the assessment (as they lead to a more precautionary assessment). The NEDDC modelling (Lepus 2018) indicates that N-deposition rates would exceed 1% of the critical loads for the *Tilio-Acerion* forests of slopes, screes and ravines feature, although these exceedances would occur mainly within 10m of the roadside, up to a maximum of 50m at Matlock. As with the South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA assessment (see above) the significance of the exceedance in critical loads was considered in the Lepus (2018) appropriate assessment report. This report concluded that the exceedance associated with the NEDDC growth would not result in significant effects (alone or in combination) on the Peak District Dales SAC for a number of reasons, including:

- the very limited proportion of the Peak District Dales SAC affected by this exceedance;
- the absence of evidence of adverse effects due to atmospheric nitrogen deposition, despite critical loads currently being exceeded; and
- the limited contribution overall of road transport to N-deposition (road transport is responsible for 6-7% of nitrogen deposition at the European sites, whilst agriculture is responsible for approximately 50% (fertilizer and livestock combined)).

As noted, the representations received from Natural England as part of the North East Derbyshire Local Plan Examination indicate that it concurs with this conclusion. As it is considered that the traffic and air quality modelling undertaken for NEDDC provide a suitable proxy for the effects of the Chesterfield plan (in the absence of bespoke models), the conclusion of the North East Derbyshire Local Plan HRA holds for this HRA also. On this basis, the Pre-Submission Local Plan will have no adverse effects on the integrity of the Peak District Dales SAC, alone or in combination.

6.7 Sherwood Forest ppSPA

Possible boundaries for the Sherwood Forest ppSPA have not been formally proposed and so any assessment of effects due to air quality changes will be somewhat speculative. Natural England indicated a possible boundary for the ppSPA in evidence to the Rufford ERF Public Inquiry⁵² (see **Appendix D**); this covers Birklands and Bilhaugh SAC and a number of SSSIs including:

- Birklands and Bilhaugh SSSI;
- Birklands West and Ollerton Corner SSSI;
- Rainworth Heath SSSI;
- Strawberry Hill Heath SSSI;
- Thoresby Lake SSSI;
- Welbeck Lake SSSI; and
- Clumber Park SSSI.

The possible boundary also includes several Local Nature Reserves; however, the majority of any future site is not covered by existing statutory designations.

The site would be designated for its populations of nightjar and woodlark, which will not be directly sensitive to air quality changes; there is a conceptual pathway for effects if air quality changes alter the supporting habitats (principally heathland and open woodland), although the significance of this effect pathway is often limited, particularly in comparison with other factors such as habitat management⁵³. The condition of any future site cannot be gauged; however, from an air quality perspective, it is likely that critical loads for N-deposition would be exceeded on designation, based on the supporting habitats for nightjar and woodlark (dry heaths and broadleaved woodland) and current values for areas of the potential site. **Table 6.11** summarises the current N-deposition for these habitats at the Birklands and Bilhaugh SSSI and the Birklands West and Ollerton Corner SSSI (the latter site is within 200m of the A614 and A616 and is likely to be one of the areas that is most exposed to air quality effects in any future SPA). However, it is worth noting that the vast majority of any future site will be substantially over 200m from any roads.

⁵² Application by Veolia ES Nottinghamshire Limited, Land at former Rufford Colliery, Rainworth, Nottinghamshire; Application Ref. 3/07/01793/CMW

⁵³ This is particularly true for many heathland and open woodland habitats, which are typically maintained through a range of management measures.

Table 6.11 Summary of N-deposition and critical loads for Birklands and Bilhaugh SSSI and Birklands West and Ollerton Corner SSSI, based on APIS*

| Feature | Critical Loads (kg N/ha/yr) | Current N-deposition (kg N/ha/yr)* | | |
|--|-----------------------------|------------------------------------|------|---------|
| | | Max | Min | Average |
| Dwarf shrub heath (<i>Calluna vulgaris</i> - <i>Deschampsia flexuosa</i> heath) | 10 – 20 | 21.8 | 17.1 | 17.7 |
| Broad-leaved, mixed and yew woodland (<i>Quercus robur</i> - <i>Pteridium aquilinum</i> - <i>Rubus fruticosus</i> woodland) | 15 – 20 | 26.6 | 26.6 | 26.6 |
| Broad-leaved, mixed and yew woodland (<i>Quercus spp.</i> - <i>Betula spp.</i> - <i>Deschampsia flexuosa</i> woodland) | 10 – 15 | 26.6 | 26.6 | 26.6 |

* Note, the 'worst' values for current N-deposition from the two sites is used

With regard to exposure, there are a number of routes close to possible units of a future SPA that could be used by vehicles traveling to or from Chesterfield Borough, including the A57, the A616 and the A6075. Specific traffic assessments for these roads have not been undertaken for the HRA of the Local Plan, and such studies have not been completed for recent HRAs of other local plans (e.g. the Newark and Sherwood Local Plan (adopted); the Rotherham Core Strategy (adopted); the Mansfield Local Plan (emerging); the Bassetlaw Local Plan (emerging)) or are not currently available. However, using the available data from other sites (see above), it is evident that increases in AADT over 1,000 do not necessarily translate to large increases in N-deposition and it is also clear that the sensitivity of the nightjar and woodlark to any increases in N-deposition will be limited as consequent habitat changes are likely to be relatively subtle (particularly compared to the role of habitat management). In addition, the SPA will be a large site with the vast majority over 200m from any roads.

On this basis, it is unlikely that the Local Plan will have adverse effects on the integrity of a future SPA in this area, alone or in combination.

7. Summary and Conclusions

7.1 Summary

The Council is currently preparing a new Local Plan for Chesterfield Borough. The new Local Plan will set out the vision, spatial principles, planning policies and site allocations that will guide development in the local authority area in the period up to 2033. The Council is currently consulting on the Pre-Submission Local Plan before it is considered by an independent planning inspector.

Regulation 105 of the Habitats Regulations states that if a land-use plan is "(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects); and (b) is not directly connected with or necessary to the management of the site" then the plan-making authority must "...make an appropriate assessment of the implications for the site in view of that site's conservation objectives" before the plan is given effect. The process by which Regulation 105 is met is known as HRA. An HRA determines whether there will be any 'likely significant effects' (LSE) on any European site as a result of a plan's implementation (either on its own or 'in combination' with other plans or projects) and, if so, whether these effects will result in any adverse effects on the site's integrity. The Council has a statutory duty to prepare the Local Plan and is therefore the Competent Authority for an HRA.

The HRA presented in this report has demonstrated that the vast majority of the Local Plan policies and proposed site allocations will have 'no effect' (either alone or in combination) on any European sites, typically because either they are policy types that do not make provision for changes or they are sites at considerable distance from the European sites (with no known pollutant or effect pathway).

The screening process has identified the following:

- There are no European sites in or in close proximity (<3 km) to Chesterfield Borough.
- Five European sites and one "prospective potential" European site are within 15km of the Borough boundary.
- The growth supported by the Local Plan has the potential to contribute to 'in combination' air quality effects on sensitive sites.
- All of the European sites within the study area are beyond the distance that significant effects 'alone' due to visitor/recreational pressure would be expected, although the Local Plan may make a contribution to 'in combination' visitor/recreational pressure effects at the sites.
- Other potential mechanisms for sites to be affected, notably through changes in water resource permissions, or water quality changes, will not occur due to the absence of reasonable impact pathways.

The effects from air quality and visitor/recreational pressure have been subject to more detailed 'appropriate assessments' in relation to each European site. This is to ensure that proposals coming forward under the Local Plan either avoid affecting designated sites entirely (no significant effect) or will not adversely affect site integrity where potential effect pathways remain.

In summary:

- **Air Quality:** The assessment of potential air quality impacts is driven in part by recent case law that has altered the interpretation of historically accepted metrics regarding 'in combination' effects. The assessment presented in this report (**Section 6**) has considered potential effects on air quality sensitive sites that may arise due to future traffic growth associated with the Local Plan's implementation. This has focused on sites that are within 200m of a road that might see

a potentially significant increase in traffic (>1,000 AADT) and to which the Local Plan might reasonably contribute. The analysis in this HRA has drawn on existing traffic studies for other local plans that relate to areas in closer proximity to the sites (which will account for traffic growth regionally). The analysis indicates that the Chesterfield Borough Local Plan will:

- ▶ have no significant effects, alone or in combination, on the Bilhaugh and Birklands SAC due to air quality changes (the 'appropriate assessment' analyses were undertaken to resolve a residual uncertainty, although this has clearly demonstrated that 'significant effects' will not occur due to the negligible scale of any increases in traffic flows along the road closest to the SAC);
 - ▶ have no adverse effects on the integrity of Gang Mine SAC, Peak District Dales SAC, Peak District Moors (South Pennine Moors Phase 1) SPA or South Pennine Moors SAC, alone or in combination due to air quality changes (air quality modelling suggests that thresholds for 'significant' effects will be exceeded, but additional analyses demonstrate that these effects will be too localised and small scale to adversely affect the sites);
 - ▶ have no adverse effects on the integrity of the Sherwood Forest ppSPA (based on distance and existing data, although this cannot be confirmed until the site is designated and the boundaries are established).
- **Visitor/Recreational Pressures:** The wide-scale and regional nature of recreational pressures means that the possibility of associated significant effects cannot be excluded based on the available data for the European sites. However, existing studies strongly suggest that the contribution of new development to visitor pressure decreases substantially with distance, and will in most instances be considered 'not significant' at distances over 8km. Most of the proposed Local Plan allocations are well over this distance from the nearest European sites (with the exception of allocations on the western side of Chesterfield, which are within ~5 – 6km of the South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA). However, the Chesterfield Borough Local Plan includes measures that will help minimise its contribution to visitor pressure at the Peak District sites, including policies relating to the protection and enhancement of the green infrastructure locally; and NE have indicated that it *"...would not however require GI as mitigation for public access/disturbance effects on the European sites"*. In consequence, whilst it is recognised that the Borough's residents will visit the Peak District sites (and so have the potential to contribute to visitor pressure effects 'in combination' with other plans), the Local Plan will not have an adverse effect on integrity (alone or in combination) due to the relatively small scale of growth in the Borough supported by the Local Plan; and the limited exposure of the interest features (due to the physical characteristics of the European sites and the management measures that reduce or control exposure). It is therefore considered that the Local Plan will:
 - ▶ have no adverse effects, alone or in combination, on the Bilhaugh and Birklands SAC, Gang Mine SAC, Peak District Dales SAC, or Sherwood Forest ppSPA (these sites are over the typically accepted distance thresholds for significant effects to be possible, or not vulnerable to visitor pressure effects due to site characteristics and access restrictions);
 - ▶ have no adverse effects, alone or in combination, on the integrity of the Peak District Moors (South Pennine Moors Phase 1) SPA or South Pennine Moors SAC (due to the relatively small scale of growth in the Borough supported by the Local Plan; and the limited exposure of the interest features due to the physical characteristics of the European sites and the management measures employed to reduce or control that exposure).

7.2 Conclusions

Overall, the assessment of the Draft Local Plan has concluded that most aspects of the plan will have no significant effects on any European sites, alone or in combination due to the absence of effect pathways. Appropriate assessments have been undertaken for those aspects where effect pathways are present or where there are uncertainties over the scale of the effects (in combination air quality and visitor pressure effects), taking into account policy-based measures have been incorporated into the plan. These appropriate assessments have employed additional analyses and data to resolve uncertainties present at the initial screening, and have concluded that **the Local Plan will have no adverse effects on the integrity of any European sites, alone or in combination.**

It will be necessary to review any changes that are made to the Pre-Submission Local Plan prior to adoption in order to ensure that the HRA conclusions remain applicable. A formal assessment conclusion against the requirements of Regulation 105 will be made at that point.

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Appendix A

European Site Terminology

Table A1 European site terminology

| Name | Abbreviation | Notes |
|--------------------------------------|--------------|--|
| Special Area of Conservation | SAC | Designated under the EU <i>Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora</i> , and implemented in the UK through the <i>Conservation of Habitats and Species Regulations 2017</i> , and the <i>Conservation (Natural Habitats, & c.) Regulations (Northern Ireland) 1995</i> (as amended). |
| Sites of Community Importance | SCI | Sites of Community Importance (SCIs) are sites that have been adopted by the European Commission but not yet formally designated by the government of each country. Although not formally designated they are nevertheless fully protected by <i>Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora</i> , the <i>Conservation of Habitats and Species Regulations 2017</i> , and the <i>Conservation (Natural Habitats, & c.) Regulations (Northern Ireland) 1995</i> (as amended). |
| Candidate SAC | cSAC | Candidate SACs (cSACs) are sites that have been submitted to the European Commission, but not yet formally adopted as SCIs. Although these sites are still undergoing designation and adoption they are still fully protected by <i>Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora</i> , the <i>Conservation of Habitats and Species Regulations 2017</i> and the <i>Conservation (Natural Habitats, & c.) Regulations (Northern Ireland) 1995</i> (as amended). |
| Possible SACs | pSAC | Sites that have been formally advised to UK Government, but not yet submitted to the European Commission. As a matter of policy the Governments in England, Scotland and Wales extend the same protection to these sites in respect of new development as that afforded to SACs. |
| Draft SACs | dSAC | Areas that have been formally advised to UK government as suitable for selection as SACs, but have not been formally approved by government as sites for public consultation. These are not protected (unless covered by some other designation) and it is likely that their existence will not be established through desk study except through direct contact with the relevant statutory authority; however, the statutory authority is likely to take into account the proposed reasons for designation when considering potential impacts on them. |
| Special Protection Area | SPA | Designated under <i>EU Council Directive 79/409/EEC on the Conservation of Wild Birds</i> (the 'old Wild Birds Directive') and <i>Directive 2009/147/EC on the Conservation of Wild Birds</i> (the 'new Wild Birds Directive', which repeals the 'old Wild Birds Directive'), and protected by Article 6 of <i>Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora</i> . These directives are implemented in the UK through the <i>Wildlife & Countryside Act 1981</i> (as amended), the <i>Conservation of Habitats and Species Regulations 2017</i> , the <i>Wildlife (Northern Ireland) Order 1985</i> , the <i>Nature Conservation and Amenity Lands (Northern Ireland) Order 1985</i> and <i>The Conservation (Natural Habitats, &c.) (Northern Ireland) Regulations 1995</i> (as amended) and the <i>Offshore Marine Conservation (Natural Habitats & c.) Regulations 2007</i> . |
| Potential SPA | pSPA | These are sites that are still undergoing designation and have not been designated by the Secretary of State; however, ECJ case law indicates that these sites are protected under Article 4(4) of <i>Directive 2009/147/EC</i> (which in theory provides a higher level of protection than the Habitats Directive, which does not apply until the sites are designated as SPAs), and as a matter of policy the Governments in England, Scotland and Wales extend the same protection to these sites in respect of new development as that afforded to SPAs, and they may be protected by some other designation (e.g. SSSI). |
| Ramsar | | The <i>Convention on Wetlands of International Importance especially as Waterfowl Habitat</i> (Ramsar Convention or Wetlands Convention) was adopted in Ramsar, Iran in February 1971. The UK |

| Name | Abbreviation | Notes |
|------|--------------|--|
| | | ratified the Convention in 1976. In the UK Ramsar sites are generally underpinned by notification of these areas as Sites of Special Scientific Interest (SSSIs) (or Areas of Special Scientific Interest (ASSIs) in Northern Ireland). Ramsar sites therefore receive statutory protection under the <i>Wildlife & Countryside Act 1981</i> (as amended), and the <i>Nature Conservation and Amenity Lands (Northern Ireland) Order 1985</i> . However, as a matter of policy the Governments in England, Scotland and Wales extend the same protection to listed Ramsar sites in respect of new development as that afforded to SPAs and SACs. |



Appendix B

Review of Plans for 'In Combination' Effects

Table B1 presents the review of plans for in-combination effects with the Local Plan.



Table B1 Review of plans for 'in combination' effects

| Plan | Summary | Likely net effect of plan on European sites (based on plan HRAs where available) | LSE with the Local Plan (with incorporated measures)? | Notes |
|---|---|--|---|---|
| Severn Trent (2014) Water Resources Management Plan | Water companies in England and Wales are required to produce a Water Resources Management Plan that sets out how they aim to maintain water supplies over a 25-year period. The current Water Resources Management Plan was published in 2014. The Severn Trent WRMP demonstrates how in the medium to long term, new resources intend to be developed, leakage tackled and sensible water use promoted through metering and water efficiency campaigns. The long term strategy is to increase the robustness of the water resources network to climate change and reduce unsustainable abstractions. | No significant effect. | No | The WRMP for the next 25 years explicitly accounts for any reductions in abstraction that are required to safeguard European sites (see Section 3) and for the growth predicted by the Local Plan and other LPA local plans in its forecasting. Therefore, the future water resource requirements of the District are factored into the abstraction regime, such that they will not affect European sites (i.e. the growth provided for by the Local Plan is in line with predictions and will not increase water resources pressure on any European sites, alone or in combination). |
| Defra and the Environment Agency (2015) Humber District River Basin Management Plan (RBMP) | The RBMP focuses on the protection, improvement and sustainable use of the water environment. The overall objective is to ensure sufficient water supplies for future generations especially in the face of climate change, housing growth and an increase in individual water use. | No significant effect | No | The plans will be complementary and the proposals within both plans do not create a scenario where there is insufficient flexibility at the project stage to allow significant effects to be avoided. |
| Sheffield City Region Local Enterprise Partnership (2014) Strategic Economic Plan | The Strategic Economic Plan sets out a 10 year plan for growth in the City Region (SCR). It identifies that Bolsover has the need and ability to accommodate significant economic growth in key settlements, taking advantage of access to the M1. The Strategy identifies the following objectives: <ul style="list-style-type: none"> • Ensure SCR businesses have the support they need to realise their full growth potential; • Become more outward looking; • Provide the conditions that businesses need to prosper and become more resilient. | No significant effect | No | The plans will be complementary and the proposals within both plans do not create a scenario where there is insufficient flexibility at the project stage to allow significant effects to be avoided. |

| Plan | Summary | Likely net effect of plan on European sites (based on plan HRAs where available) | LSE with the Local Plan (with incorporated measures)? | Notes |
|---|--|--|---|---|
| South Yorkshire Local Transport Plan Partnership (2011) Sheffield City Region Transport Strategy 2011 – 2026 | The strategy sets out the following goals: <ul style="list-style-type: none"> • support economic growth; • enhance social inclusion and health; • reduce the emissions from vehicles; • make transport increasingly safe and secure. | No significant effect | No | The plans will be complementary and the proposals within both plans do not create a scenario where there is insufficient flexibility at the project stage to allow significant effects to be avoided. |
| D2N2 Local Economic Partnership (2014) Strategic Economic Plan | The vision is to create a more prosperous, better connected and increasingly resilient and competitive economy. This is supported by 5 strategic priorities: <ul style="list-style-type: none"> • Business support and access to finance; • Innovation; • Employment and skills; • Infrastructure for economic growth; • Housing and regeneration. | No significant effect | No | The Local Plan is complementary and the proposals within both plans do not create a scenario where specific developments cannot be delivered due to the risk of significant effects. |
| Derbyshire County Council (2013) Derbyshire County and Derbyshire City Joint Municipal Waste Management Strategy | The strategy aims to deliver a sustainable waste management service and sets out ten key objectives, including: <ul style="list-style-type: none"> • Reduced waste; • Increase reuse and recycling / composting of waste; • Reduced waste to landfill and recovering value from what that is over for disposal; • Increased public understanding and engagement in waste and recycling leading to high levels of customer satisfaction; • An accessible, efficient, effective and value for money service; • Improved resource efficiency; • Reduced carbon / climate change impacts; • Protection of natural resources; • The management of non-household waste; • Local self-sufficiency in the management of waste. | No significant effect | No | The Local Plan is complementary and the proposals within both plans do not create a scenario where specific developments cannot be delivered due to the risk of significant effects. |
| Derbyshire County Council (2011) Derbyshire Local Transport Plan (LTP3) | The strategy approach for LTP3 has been to develop five themes, based on the previous Government’s five National Transport Goals as set out in the LTP3 Guidance, but made relevant to Derbyshire. The themes are as follows: | No significant effect | No | The Local Plan is complementary and the proposals within both plans do not create a scenario where specific developments cannot |



| Plan | Summary | Likely net effect of plan on European sites (based on plan HRAs where available) | LSE with the Local Plan (with incorporated measures)? | Notes |
|---|---|--|---|---|
| | <ul style="list-style-type: none"> • Supporting a resilient local economy; • Tackling climate change; • Contributing to better safety, security and health; • Promoting equality of opportunity; • Improving quality of life and promoting a healthy natural environment. | | | be delivered due to the risk of significant effects. |
| Amber Valley Borough Council (2018) Amber Valley Submission Local Plan | <p>The spatial strategy for the plan makes provision for 9,770 additional homes throughout the plan period. The plan also makes provision for 45.90 ha of land for new businesses and industrial development. The Plan contains the following strategic objectives:</p> <ol style="list-style-type: none"> 1) To achieve sustainable design and construction by promoting high quality design and facilitating reductions in resource consumption and waste, whilst maximising opportunities for renewable energy generation and utilisation where appropriate. 2) To foster economic development by improving the quality and accessibility of employment land and infrastructure within the Borough, including the regeneration of brownfield land and to reduce socio-economic inequalities through the regeneration of deprived communities. 3) To promote the growth and viability of the market towns of Alfreton, Belper, Heanor and Ripley in a way that is consistent with the role and function of these towns. 4) To enable the provision of a sufficient number of decent, affordable and well-designed dwellings to meet the housing needs of all local communities. 5) To promote the principles of community safety by supporting initiatives that engender reductions in local levels of crime and fear of crime in the Borough. 6) To improve the health and wellbeing of local people and promote equality and cohesion within and between communities in the Borough, by increasing opportunities for local people to participate in a range of leisure, cultural, sport and community activities and providing access to the natural environment, particularly for children and young people. 7) To protect and enhance the environmental quality and local distinctiveness of spaces and places in the Borough in relation to | No significant effect | No | Potential 'quantum of development' effects through recreational pressure and air quality impacts associated with traffic movements on some sites; see Sections 5 and 6. |



| Plan | Summary | Likely net effect of plan on European sites (based on plan HRAs where available) | LSE with the Local Plan (with incorporated measures)? | Notes |
|--|--|--|---|--|
| | <p>landscapes and heritage, including, but not limited to, the Derwent Valley Mills World Heritage Site and the Special Landscape Area.</p> <p>8) To protect, maintain, restore, enhance and create areas of nature conservation and woodland in the environment, with a focus upon enhancing wildlife corridors and networks of habitats, preventing further fragmentation and extending the connectivity of habitats.</p> <p>9) To ensure that a network of easily accessible and high quality open spaces, parks, recreational areas, leisure facilities, community facilities, sports facilities, green infrastructure and cultural facilities is maintained and enhanced in the Borough.</p> <p>10) To provide and support improvements to the transport network, including the provision of infrastructure that creates opportunities for non-motorised transport, increases public transport accessibility and mitigates against the creation of traffic congestion.</p> <p>11) To aim to ensure that local services, facilities and employment opportunities in the Borough are accessible to all local communities.</p> <p>12) To ensure that new development is directed away from areas at highest risk of flooding, and to maintain, enhance and where necessary remediate the quality of surface and groundwater resources.</p> | | | |
| Ashfield District Council (2017) Local Plan | <p>The Ashfield Local Plan was submitted to the Secretary of State for Communities and Local Government in February 2017. Examination Hearings were held between 2nd October and 12th October 2017; however, the Council resolved at its meeting on 6th September 2018 to withdraw the emerging Local Plan and commence development of a new Local Plan immediately.</p> | <p>No significant effect (based on previous plan HRA)</p> | <p>No</p> | <p>Potential 'quantum of development' effects through recreational pressure and air quality impacts associated with traffic movements on some sites; see Sections 5 and 6.</p> |
| Bassetlaw District Council (2011) Bassetlaw Core Strategy and Development Management Policies DPD | <p>The Bassetlaw Core Strategy was adopted in December 2011 and covers the plan period up to 2028. The Core Strategy sets out the overall vision and 10 strategic objectives for Bassetlaw.</p> | <p>No significant effect</p> | <p>No</p> | <p>Potential 'quantum of development' effects through recreational pressure and air quality impacts associated with traffic movements on some sites; see Sections 5 and 6.</p> |
| Bolsover District Council Local Plan (emerging) | <p>The new Local Plan for Bolsover District will be a single planning policy document. It will set out how much new development is to be</p> | <p>No significant effect</p> | <p>No</p> | <p>Potential 'quantum of development' effects through recreational pressure and air quality</p> |



| Plan | Summary | Likely net effect of plan on European sites (based on plan HRAs where available) | LSE with the Local Plan (with incorporated measures)? | Notes |
|---|---|--|---|--|
| | <p>accommodated in the District out to 2033 and where this growth will be located. It will also contain planning policies and land allocations.</p> | | | <p>impacts associated with traffic movements on some sites; see Sections 5 and 6.</p> |
| <p>Mansfield District Council (2017) Mansfield District Local Plan Preferred Options 2013-2033</p> | <p>The Local Plan covers the plan period up to 2033 and has the following objectives:</p> <ul style="list-style-type: none"> • To support economic growth by promoting the regeneration of previously developed land and existing buildings, identifying sustainable areas for job growth, services and new homes which are well designed to help encourage further uplift and address deprivation. In doing so, prioritise development within the Mansfield urban area, followed by Market Warsop, whilst seeking to minimise the loss of greenfield land and mitigate against any social, environmental and infrastructure impacts. • To contribute towards creating a stronger more resilient local economy bringing forward a diverse range of employment sites and ensuring that new residential areas are accessible to employment and training opportunities. • To increase the range and choice of housing throughout the urban areas and villages, that meets the needs of the whole community, including the need for affordable housing, low cost and specialist housing to meet the needs of the ageing population and to attract young people to the district. • To conserve and enhance the identity, character and diversity of the districts built and natural heritage assets. • To ensure that all new development achieves a high standard of design which reflects local context and circumstances, and in particular by association with the Sherwood Forest, to create a greener more attractive district. • To enhance the vitality and viability of the district's town, district and local centres, with a particular focus on regeneration opportunities, in ways that help meet the consumer needs, looking at new and varied uses to bring activity, footfall and vibrancy into these locations, with a focus on cultural, residential and leisure activities to complement the retail and service role of these centres. | <p>No significant effect</p> | <p>No</p> | <p>Potential 'quantum of development' effects through recreational pressure and air quality impacts associated with traffic movements on some sites; see Sections 5 and 6.</p> |

| Plan | Summary | Likely net effect of plan on European sites (based on plan HRAs where available) | LSE with the Local Plan (with incorporated measures)? | Notes |
|------|--|--|---|-------|
| | <ul style="list-style-type: none"> • To promote the health and wellbeing of the district's population by ensuring residents and visitors have access to a range of good quality green space, green corridors, cycle trails, leisure and community facilities and the countryside through appropriately designed places and well planned green infrastructure. • To ensure that development helps reduce and is designed to be more resilient to the impacts of climate change by adopting measures to address renewable and low carbon energy, flood mitigation, resource management and waste prevention. • To support improvements to accessibility so everyone can move around, across and beyond the district easily, by a range of sustainable transport options, including public transport, walking and cycling; and to take account of those areas of the Mansfield highway network that are identified as being very congested with little capacity for expansion. • To seek to deliver the infrastructure requirements of the district, including the delivery of high speed broadband. • To protect the vitality, identity and setting of the villages by safeguarding important areas of open land and supporting access to key community facilities and services. • To identify, protect, enhance and encourage the appropriate management of district's important natural resources, in and adjoining the district, including wildlife, soil and geological resources, and the network of habitats and designated sites. In doing so, to also promote their enhancement through the appropriate location and design of new development. • To encourage new development to be water sensitive by addressing water efficiency, protecting and enhancing the natural environment, reducing flood risk and pollution, whilst at the same ensuring the effective design and location of sustainable urban drainage systems (SUDs) and naturalising of the river environment in such a way such that the SUDs and the natural environments help to create a more attractive environment for residents. • Conserve and enhance the quality of the district's landscape character and key landscape features by positively addressing National | | | |

| Plan | Summary | Likely net effect of plan on European sites (based on plan HRAs where available) | LSE with the Local Plan (with incorporated measures)? | Notes |
|---|--|--|---|---|
| | Character Area profiles and landscape policy actions within the Sherwood and Magnesium Limestone landscape areas into the design of new developments to help lift the image and quality of the development in the district. | | | |
| North East Derbyshire District Council (2018) North East Derbyshire Local Plan (2014 – 2034) Publication Draft | The Local Plan covers the period 2014 - 2034 and once adopted will replace the Local Plan 'Saved Policies' 2005. The spatial strategy for the plan makes provision for a minimum of 6,600 dwellings and 41ha of employment land throughout the plan period. The policy also seeks to Support and enhance the role of the four Towns of Clay Cross, Dronfield, Eckington, and Killamarsh. | No significant effects | No | Potential 'quantum of development' effects through recreational pressure and air quality impacts associated with traffic movements on some sites; see Sections 5 and 6. |
| Rotherham Metropolitan Borough Council (2014) Rotherham Local Plan Core Strategy 2013 – 2028 (adopted 2014) | The Local Plan was adopted in September 2014. The Local Plan sets out the overall vision and objectives for growth in Rotherham to promote economic growth, achieve sustainable development and create sustainable communities for the plan period up to 2028. | No significant effect | No | Potential 'quantum of development' effects through recreational pressure and air quality impacts associated with traffic movements on some sites; see Sections 5 and 6. |

Appendix C

Review of Draft Local Plan Policies

| Policy Ref | Screening / Pathway | HRA conclusion | Rationale |
|---|--|--|--|
| LP1 Spatial Strategy | Yes (quantum of development) | No adverse effects (alone or in combination) | This policy sets out the overall approach to growth (concentrate new development within walking distance of centres, which is largely neutral from an HRA perspective). However, the policy also sets out the anticipated growth levels that the plan is addressing (minimum Objectively Assessed Need (OAN) of 4,374 net new dwellings over the period 2018 to 2033), and population growth more broadly is a key component underpinning most impact pathways. The effects of quantum of development has been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. Includes provision for Green Infrastructure and Green Wedges which will help with the management of recreational pressure. The quantum of development aspect creates a series of potential impact pathways; however, assessment has demonstrated that the growth predicted can be accommodated without effects on European sites, with the protective safeguards and benefit of the cross-cutting policies within the plan. |
| LP2 Principles for Location of Development | No (General 'criteria based' policy.) | HRA neutral - no effects | General 'criteria based' policy. The principles for location of development are high-level and will not themselves increase the risk of effects on European sites; the policy benefits from the cross-cutting policies within the plan (" <i>...meet sequential test requirements set out by other national or local policies</i> "). The policy will not have significant effects alone or in combination. |
| LP3 Presumption in favour of sustainable development | No (General statements of policy / aspiration) | HRA neutral - no effects | The NPPF (para 11) states that all plans should be based upon and reflect the presumption in favour of sustainable development. Policy LP3 sets out what this means in practice, and how the presumption will influence decisions on development proposals. |
| LP4 Flexibility in Delivery of Housing | Yes (Location specific) | No adverse effects (alone or in combination) | The policy states that " <i>Planning permission will be granted for residential development on the sites allocated on the policies map...provided they accord with other relevant policies of the Local Plan</i> " and so relies on the individual allocations having no significant or no adverse effects to be sound. The allocation locations have been reviewed and none individually are likely to result in significant effects on European sites; the effects of quantum of development has been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. The policy provides flexibility should unallocated sites come forward, although the policy controls (" <i>only be permitted where it accords with the strategy of 'Concentration and Regeneration' as set out in policies LP1 and LP2</i> ") will ensure that development is predominantly in built-up areas where the risk of effects on European sites due to a specific site is minimal. |
| LP5 Range of Housing | No (General 'criteria based' policy.) | HRA neutral - no effects | General 'criteria based' policy. Criteria etc. for increasing local housing choice. |

| Policy Ref | Screening / Pathway | HRA conclusion | Rationale |
|--|--|--|--|
| LP6 Sites for Travellers | Yes (Location specific) | No adverse effects (alone or in combination) | The allocation locations have been reviewed and none individually are likely to result in significant effects on European sites; the effects of quantum of development has been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. |
| LP7 Economic Growth | Yes (Quantum of development) | No adverse effects (alone or in combination) | This policy sets out the overall approach to economic growth and the development of employment land, which is largely neutral from an HRA perspective). However, the policy also underpins the anticipated growth levels that the plan is addressing, and population growth more broadly is a key component underpinning most impact pathways. The effects of quantum of development has been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. The quantum of development aspect creates a series of potential impact pathways; however, assessment has demonstrated that the growth predicted can be accommodated without effects on European sites, with the protective safeguards and benefit of the cross-cutting policies within the plan. |
| LP8 Tourism and the Visitor Economy | Yes (Supports development which may affect a site) | No adverse effects (alone or in combination) | The policy is generally protective but does state that "...proposals for tourism development will be encouraged where they are related to...(v.) connections with the Peak District National Park". The effects of recreational pressure are considered in Section 6 of this report, and it is concluded that there will be no adverse effects alone or in combination; this policy does effectively direct or support tourist use of the Peak District, although it is understood that visitor pressure in these sites is generally manageable, other than in some localised areas. |
| LP9 Vitality and Viability of Centres | No (General 'criteria based' policy.) | HRA neutral - no effects | General 'criteria based' policy. Criteria for retail etc. development in town centres. |
| LP10 Retail | No (General 'criteria based' policy.) | HRA neutral - no effects | General 'criteria based' policy. Criteria for retail etc. development in town centres. |
| LP11 Social Infrastructure | No (General 'criteria based' policy.) | HRA neutral - no effects | General 'criteria based' policy. Criteria for development of community, leisure, cultural, religious, education and health facilities including local shops, public houses and places of worship. |
| LP12 Infrastructure Delivery | No (General 'criteria based' policy.) | HRA neutral - no effects | General 'criteria based' policy. States that " <i>Developers will be required to demonstrate that the necessary infrastructure (green, social and physical) will be in place in advance of, or can be provided in tandem with, new development, and where appropriate arrangements are in place for its subsequent maintenance</i> " and so provides safeguards that will ensure that (e.g. sewerage provision is in place). Note, limitations on utilities provision or infrastructure (e.g. WwTW capacity or availability of public water supply) are not likely to have significant effects on any European sites alone or in combination. |
| LP13 Renewable Energy | Yes (Type of development supported.) | No significant effects | General design / guidance criteria or policies that cannot lead to or trigger development. Provides support for renewable energy schemes subject to criteria, including in relation to nature conservation, and direct developments away from green belts. |

| Policy Ref | Screening / Pathway | HRA conclusion | Rationale |
|---|---------------------------------------|--------------------------|---|
| | | | None of the European sites considered will be significantly affected by renewable energy proposals in Chesterfield. There is a theoretical risk of effects on the interest features of the South Pennine Moors SPA from wind farm developments although this pathway will not be realised based on the behaviours of the interest features, their relatively low collision risk, the habitats within Chesterfield, and the safeguarding criteria within the policy. |
| LP14 Managing the Water Cycle | No (General 'criteria based' policy.) | HRA neutral - no effects | General 'criteria based' policy aimed principally at controlling development and flood risk, although it also requires that <i>"Development proposals will be expected to demonstrate that water is available to support the development proposed"</i> . No European sites are vulnerable to the ancillary effects of flooding in Chesterfield and so there is no pathway in relation to this aspect. Data from Severn Trent Water on its current (2014) and emerging (2019) Water Resources Management Plan (WRMP) does not suggest that water is not available for use (and these plans are subject to HRA), although the policy does provide a good practice safeguard. Limitations on utilities provision or infrastructure (e.g. WwTW capacity or availability of public water supply) are not likely to have significant effects on any European sites alone or in combination. |
| LP15 A Healthy Environment | No (Environmental protection policy) | HRA neutral - no effects | General 'criteria based' policy aimed principally at providing environmental safeguards. Cannot negatively affect any European sites. |
| LP16 Green Infrastructure | No (Environmental protection policy) | HRA neutral - no effects | General 'criteria based' policy aimed principally at safeguarding and enhancing green infrastructure around Chesterfield. Cannot negatively affect any European sites but may provide some benefits by encouraging local recreation (although this is not required to ensure 'no adverse effects' as a result of recreational pressure associated with the quantum of growth). |
| LP17 Biodiversity, Geodiversity and the Ecological Network | No (Environmental protection policy) | HRA neutral - no effects | General 'criteria based' policy aimed principally at providing environmental safeguards. Cannot negatively affect any European sites. Provides explicit criteria relating to the protection of European sites (largely reflects current legislation). |
| LP18 Open Space, Play Provision, Sports and Recreational Facilities and Allotments | No (General 'criteria based' policy.) | HRA neutral - no effects | General 'criteria based' policy setting out standards for Open Space, Play Provision, Sports and Recreational Facilities and Allotments. Cannot negatively affect any European sites. |
| LP19 Chesterfield Canal | No (Safeguarding policy) | HRA neutral - no effects | General design / guidance criteria or policies that cannot lead to or trigger development; safeguards the route of Chesterfield Canal and prevents development <i>"...which prejudices the existing character of and/or the future potential for the improvement and enhancement of the chesterfield canal, including public access, environment and recreation..."</i> |
| LP20 River Corridors | No (Safeguarding policy) | HRA neutral - no effects | General design / guidance criteria or policies that cannot lead to or trigger development; safeguards the river corridors (<i>"Development which prejudices the existing character of and/or the future potential for the improvement and enhancement of the environment of rivers as shown on the policies map, including public access and recreation as shown on the proposals map, will not be permitted"</i>). |



| Policy Ref | Screening / Pathway | HRA conclusion | Rationale |
|---|---------------------------------------|--|--|
| LP21 Design | No (General 'criteria based' policy.) | HRA neutral - no effects | General 'criteria based' policy setting out design expectations. Cannot negatively affect any European sites. |
| LP22 Historic Environment | No (Environmental protection policy) | HRA neutral - no effects | General 'criteria based' policy aimed principally at providing environmental safeguards in relation to the historic environment. Cannot negatively affect any European sites. |
| LP23 Influencing the Demand for Travel | No (General 'criteria based' policy.) | HRA neutral - no effects | General design / guidance criteria or policies that cannot lead to or trigger development; policy designed to ensure that travel needs can be met by a range of transport choices other than the private car. The policy states that <i>"To reduce congestion, improve environmental quality and encourage more active and healthy lifestyles, the Council will seek to maximise walking, cycling and the use of public transport through the location and design of development and parking provision. Priority will be given to measures to encourage more sustainable travel choices"</i> . This policy has some overlap with the air quality assessment (HRA Chapter 5), which concluded that there would be no adverse effects on the integrity of any European sites as a result of population (and hence traffic) growth associated with Chesterfield, alone or in combination. This policy may help reduce car use, although it is recognised that this will largely influence short-range local travel rather than the out of region travel which is most likely to affect European sites due to air quality changes. |
| LP24 Major Transport Infrastructure | No (Safeguarding policy) | HRA neutral - no effects | General design / guidance criteria or policies that cannot lead to or trigger development; safeguards land for major new transport infrastructure, some of which is derived from other plans subject to HRA. Cannot negatively affect any European sites. |
| RP1 Regeneration Priority Areas | Yes (Location specific) | No adverse effects (alone or in combination) | Principally sets criteria for masterplanning but identifies areas for regeneration and provides housing numbers for specific areas. The allocation locations have been reviewed and none individually are likely to result in significant effects on European sites; the effects of quantum of development have been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. |
| SS1 Chesterfield Town Centre | Yes (Supports growth / development) | No adverse effects (alone or in combination) | Policy relating to the granting of planning permission; developments in this location will not have direct effects alone or in combination due to the locations of the nearest European sites; the effects of quantum of development have been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. |
| SS2 Chatsworth Road Corridor | Yes (Supports growth / development) | No adverse effects (alone or in combination) | Policy relating to the granting of planning permission; developments in this location will not have direct effects alone or in combination due to the locations of the nearest European sites; the effects of quantum of development have been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. |
| SS3 Chesterfield Waterside and the Potteries | Yes (Supports growth / development) | No adverse effects (alone or in combination) | Policy relating to the granting of planning permission; developments in this location will not have direct effects alone or in combination due to the locations of the nearest European sites; |

| Policy Ref | Screening / Pathway | HRA conclusion | Rationale |
|--|-------------------------------------|--|--|
| | | | the effects of quantum of development have been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. |
| SS4 Markham Vale | Yes (Supports growth / development) | No adverse effects (alone or in combination) | Policy relating to the granting of planning permission; developments in this location will not have direct effects alone or in combination due to the locations of the nearest European sites; the effects of quantum of development have been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. |
| SS5 Staveley and Rother Valley Corridor | Yes (Supports growth / development) | No adverse effects (alone or in combination) | Policy relating to the granting of planning permission; developments in this location will not have direct effects alone or in combination due to the locations of the nearest European sites; the effects of quantum of development have been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. |
| SS6 Land at Dunston | Yes (Supports growth / development) | No adverse effects (alone or in combination) | Policy relating to the granting of planning permission; developments in this location will not have direct effects alone or in combination due to the locations of the nearest European sites; the effects of quantum of development have been explored through the HRA and this has concluded that there will either be 'no significant effects' (alone or in combination) or, where a potential pathway exists, no adverse effects on the integrity of any European sites. |
| SS7 Chesterfield Railway Station | No (No pathway for effects) | HRA neutral - no effects | Policy relating to development of Chesterfield Station and surrounding area; no reasonable pathway for European sites to be affected. |
| SS8 Neighbourhood Plans | No (No pathway for effects) | HRA neutral - no effects | Policy supporting community groups and bodies such as Town and Parish Councils who wish to prepare a Neighbourhood Plan; no reasonable pathway for European sites to be affected. |

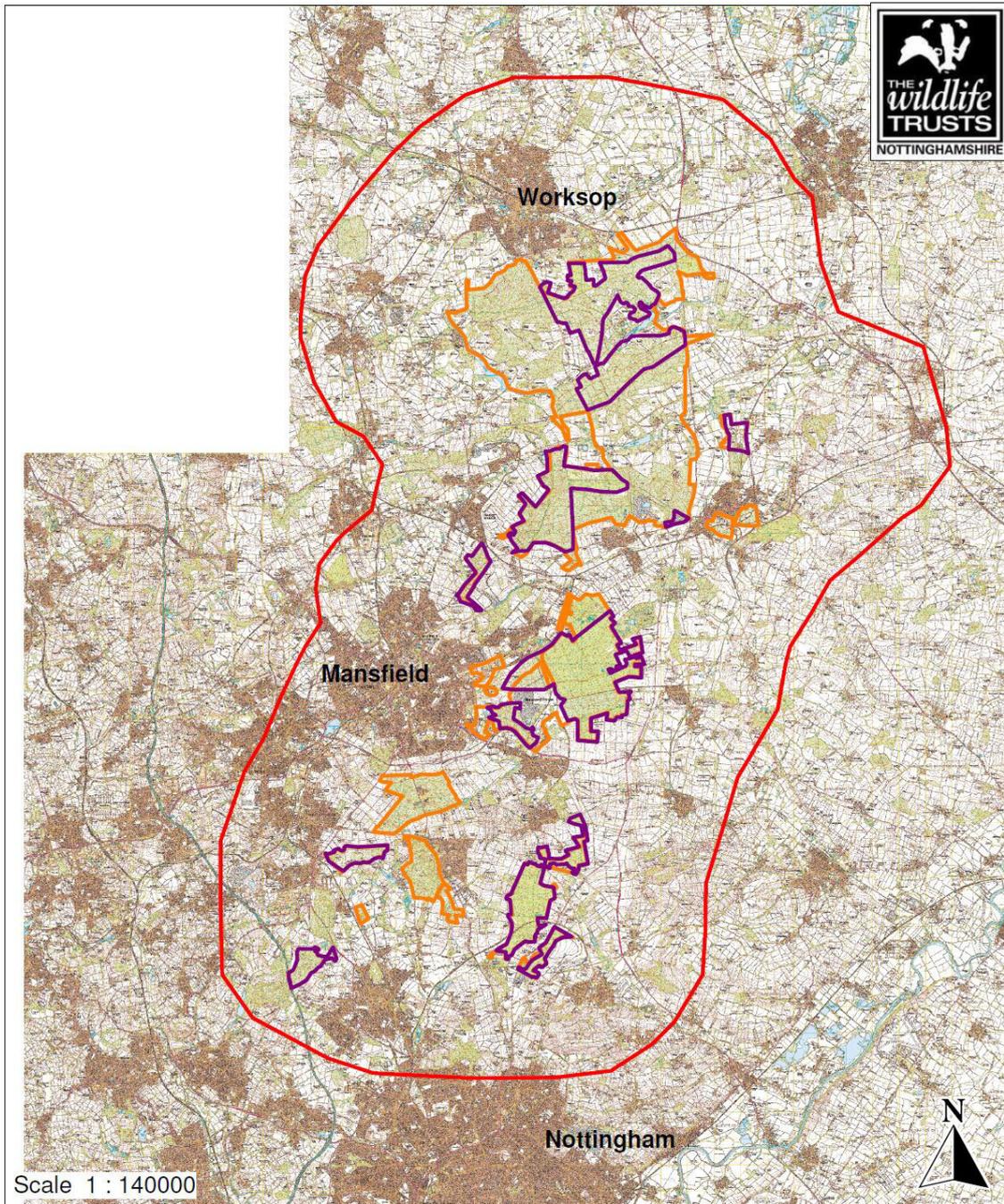


Appendix D

Sherwood Forest ppSPA



Map highlighting the areas of greatest ornithological interest for breeding nightjar and woodlark, submitted as evidence to the Rufford ERF Public Inquiry 2010



Scale 1 : 140000

- Key**
- RSPB IBA Boundary with 5Km buffer
 - NE Indicative Core Area
 - RSPB IBA Boundary

Plan 1

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Appendix E

Summary of Traffic Data Review

Specific traffic assessments were not undertaken for the Local Plan, although traffic and air quality studies have been completed for the HRA of the emerging North East Derbyshire Local Plan:

- Redmore Environmental (2018). *Ecological Air Quality Assessment: North East Derbyshire*. Report for Lepus Consulting. ref 1459-1r1. Redmore Environmental, Manchester⁵⁴.
- Lepus Consulting (2018). *Habitat Regulations Assessment of the North East Derbyshire District Council Local Plan: Appropriate Assessment*. HRA Screening Document. Report for North East Derbyshire District Council, ref. LC-355 NEDCC AA_2_030418JE.docx. Lepus Consulting, Bath⁵⁵.

In summary, the North East Derbyshire Local Plan HRA assessed the cumulative impact of local plan traffic growth on the surrounding highway network using industry standard TEMPro 7.2 model. This model essentially applies growth factors for other (non-target) LPA areas, which may vary slightly compared to the housing (etc.) numbers actually predicted or proposed by the relevant LPA; the assumptions within the NEDDC traffic studies (Lepus 2018) have therefore been reviewed.

The NEDDC assessment found that two roads (A6 South and A621 Nr Baslow) within the North East Derbyshire Local Plan HRA study area are forecast to have traffic growth exceeding 1,000 vehicles per day by 2034. Inherent within the TEMPro 7.2 growth factors is an allowance for an extra 4,014 households (for the purpose of this exercise a worst case of one household per dwelling has been assumed) and an extra 3,001 jobs within Chesterfield Borough between 2018 and 2034. The rate of growth implied in the draft Chesterfield Borough Local Plan equates to an extra 4,672 dwellings and the equivalent of 4,480 extra jobs over the same period. This represents an increase of 658 dwellings and 1,479 jobs over and above the TEMPro 7.2 assumptions in the NEDDC assessment.

TEMPro 7.2 currently assumes for Chesterfield Borough a daily traffic growth factor, between 2018 and 2034, of 1.12155. If TEMPro 7.2 is manually adjusted with the extra 4,672 dwellings and 4,480 jobs (included within the proposed local plan) then the growth factor would become 1.14290; a percentage difference of 1.9%.

This 1.9% increase should not be directly applied to all roads regionally as traffic would be distributed across the highway network according to demand; in this case the majority would remain in Chesterfield Borough or travel to destinations such as Sheffield, Mansfield and Worksop. Consequently, the proportion of this increase using the roads within the North East Derbyshire Local Plan HRA study area would be much lower than 1.9%. Nevertheless, for a precautionary assessment the whole of this increase has been applied to the roads studied by the North East Derbyshire Local Plan HRA by adjusting the TEMPro 7.2 growth rates accordingly.

Table E1 below shows the data from the North East Derbyshire Local Plan HRA alongside the adjusted growth factors (with the proposed Chesterfield Local Plan estimates) and the resultant change in AADT between 2018 and 2034. The final column shows the difference between the North East Derbyshire Local Plan HRA 'Change in AADT' and the 'With Chesterfield LP, Change in AADT'.

⁵⁴ Available at: <http://www.ne-derbyshire.gov.uk/index.php/resident/local-plan>

⁵⁵ Available at: <http://www.ne-derbyshire.gov.uk/index.php/your-council/document-library/local-plan-exam-library/03-supporting-docs-evidence-base/environment/2253-eb-env4c-habitats-regulation-assessment-appropriate-assessment/file>

Table E1 NEDDC AADT data with adjusted growth factors to account for Chesterfield

| Location | Data from North East Derbyshire Local Plan HRA | | | | | With Chesterfield LP | | | |
|-----------------------------|--|-----------|-----------|----------------|------------|----------------------|----------------|-----------------|--|
| | AADT 2018 | AADT 2034 | TEMPro7.2 | Change in AADT | New Factor | AADT 2034 | Change in AADT | Difference AADT | |
| A6 North | 4,795 | 5,689 | 1.1864 | 894 | 1.2090 | 5,797 | 1,002 | 108 | |
| A5012 Nr Middleton | 3,581 | 4,132 | 1.1539 | 551 | 1.1758 | 4,211 | 630 | 79 | |
| A6 South | 11,471 | 13,475 | 1.1747 | 2,004 | 1.1971 | 13,732 | 2,261 | 257 | |
| A57 Ladybower | 3,780 | 4,479 | 1.1849 | 699 | 1.2075 | 4,564 | 784 | 85 | |
| A6013 Ladybower | 4,399 | 5,213 | 1.1850 | 814 | 1.2076 | 5,312 | 913 | 99 | |
| A621 Nr Baslow | 4,970 | 5,954 | 1.1980 | 984 | 1.2208 | 6,067 | 1,097 | 113 | |
| A619 Nr Baslow | 8,487 | 10,069 | 1.1864 | 1,582 | 1.2090 | 10,261 | 1,774 | 192 | |
| A6187 Nr Grindleford | 5,124 | 5,971 | 1.1653 | 847 | 1.1875 | 6,085 | 961 | 114 | |
| A652 Nr Grindleford | 3,249 | 3,786 | 1.1653 | 537 | 1.1875 | 3,858 | 609 | 72 | |

As it can be seen in Table E1, the 'difference in AADT' are less than 260 vehicles per day. Although it is not simple to apply 'rule of thumb' estimates to relationships between traffic volumes and N-deposition (as this is influenced by a number of factors), it is worth noting that the DMRB guidance regarding air quality thresholds is based on the assumption that 1,000 extra vehicles is equivalent to ~0.01 kg N/ha/yr (this is obviously a coarse figure and there are other factors that come into play such as the emissions factors used for opening year/ wind direction etc./ number of HGVs / speed etc.). However, it could be interpreted that the additional 260 AADT on the A6 South, as a result of the proposed Chesterfield Borough Local Plan, would be equivalent to 0.003 kgN/ha/yr. As the results within the North East Derbyshire Local Plan HRA are quoted to two decimal places, the significance of this change in traffic is considered negligible and therefore, it is considered that the analysis provided within the North East Derbyshire Local Plan HRA remains valid for the proposed Chesterfield Borough Council Local Plan forecasts.

wood.

