Newcastle-under-Lyme Publication Draft Local Plan 2020 - 2040 Regulation 19

Habitats Regulations Assessment

July 2024

LEPUS CONSULTING
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Newcastle-under-Lyme Publication Draft Local Plan 2020 – 2040 Regulation 19

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Acronyms & abbreviations

AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
ALS	Abstraction License Strategy
APIS	Air Pollution Information System
BOD	Biochemical Oxygen Demand
CAMS	Catchment Abstraction Management Strategy
CIEEM	Chartered Institute of Ecology and Environmental Management
CSM	Common Standards Monitoring
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DTA	David Tyldesley and Associates
EA	Environment Agency
EP	Environmental Permit
HDV	Heavy Duty Vehicle
HRA	Habitats Regulations Assessment
IRZ	Impact Risk Zone
IUCN	International Union for Conservation of Nature
JNCC	Joint Nature Conservation Committee
LNR	Local Nature Reserve
LPA	Local Planning Authority
LSE	Likely Significant Effect
NE	Natural England
NNR	National Nature Reserve
No_x	Nitrogen Oxides
NRTP	National Road Traffic Projections
NSMM	North Staffordshire Multi-Modal
NUL	Newcastle-under-Lyme Borough Council
pSAC	Possible / Proposed Special Area of Conservation
pSPA	Potential Special Protected Area
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SIP	Site Improvement Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
STA	Strategic Transport Assessment
STW	Severn Trent Water

SWMC	Surface Water Management Catchment
SWMI	Significant Water Management Issue
SWMP	Surface Water Management Plan
WCS	Water Cycle Study
WFD	Water Framework Directive
WRMP	Water Resource Management Plan
WRZ	Water Resource Zone
WwTWs	Wastewater Treatment Works
ZOI	Zone of Influence

1 Introduction

1.1 Background

1.1.1 Newcastle-under-Lyme Borough Council (hereafter referred to as 'NUL') is preparing a new Local Plan to set out a vision and provide a framework for meeting identified needs and priorities. This will provide a framework for Newcastle-under-Lyme's growth until 2040. The Local Plan will set out where and how new development can take place. The Local Plan covers the period from 2020 to 2040 and extends across the whole of NUL's administrative area (referred to hereafter as the 'Plan area' and illustrated in **Figure 1.1**).

1.1.2 Once adopted, the Local Plan will replace the current adopted Newcastle-under-Lyme and Stoke-on-Trent Joint Core Spatial Strategy[1] and the saved policies from the Newcastle-under-Lyme Local Plan 2011[2].

1.1.3 To date, NUL has undertaken two consultation exercises as part of the plan making process: Issues and Strategic Options (November 2021 – February 2022)[3] and First Draft Local Plan (June 2023 – August 2023)[4]. The responses to these consultations have informed the development of the Publication Draft Newcastle-under-Lyme Local Plan at Regulation 19.

[1] Newcastle-under-Lyme and Stoke-on-Trent. (October 2009) Core Spatial Strategy 2006 – 2026. Available at: https://www.newcastle-staffs.gov.uk/downloads/file/348/core-spatial-strategy-adopted-version [Accessed 11/06/24].

[2] Newcastle-under-Lyme. (September 2007) Saved Policies of the Newcastle under Lyme Local Plan (Adopted 2003). Available at: https://www.newcastle-staffs.gov.uk/downloads/download/100/current-development-plan [Accessed 11/06/24].

[3] Newcastle-under-Lyme. Newcastle-under-Lyme Local Plan 2020 – 2040. Issues and Options. Available at: https://www.newcastle-staffs.gov.uk/downloads/file/1510/issues-and-options [Accessed 11/06/24].

[4] Newcastle-under-Lyme. (June 2023) Newcastle-under-Lyme Local Plan 2020 – 2040. First Draft Local Plan (Regulation 18 Stage). Available at: https://consult.newcastle-staffs.gov.uk/kse/event/37506 [Accessed 11/06/24].

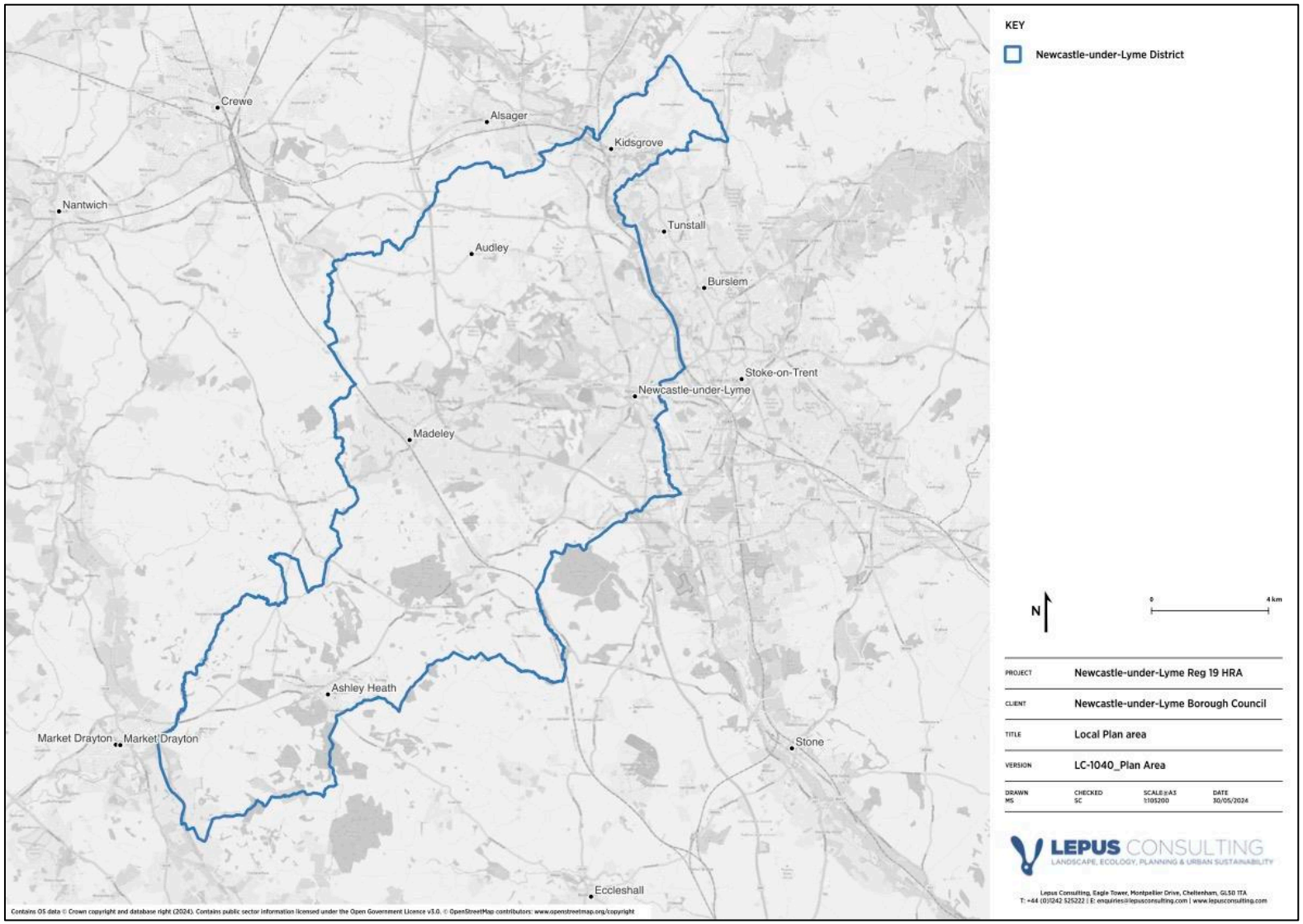

Figure 1.1: *Newcastle-under-Lyme Local Plan area*

1.2 Habitat Regulations Assessment

1.2.1 The application of a Habitat Regulations Assessment (HRA) to land-use plans is a requirement of the Conservation of Habitats and Species Regulations 2017 (as amended)[5]. HRA applies to plans and projects, including all Local Development Documents in England and Wales.

1.2.2 Where a plan is likely to have a significant effect on a European site (either alone or in-combination) and is not directly connected with or necessary to the management of the European site, Regulation 105 of the Habitats Regulations notes that the plan making authority for that plan must, before the plan is given effect, make an Appropriate Assessment (AA) of the implications for the site in view of that site's conservation objectives. These tests are referred to collectively as a Habitats Regulations Assessment (HRA).

1.2.3 To ensure that outputs from the HRA are incorporated into the Local Plan, it is important that the HRA process begins at the early stages of the plan making process. This allows for adverse impacts to be avoided in the first instance through the strategic planning of options or, where this is not possible, effective mitigation. Mitigation measures can then be designed to avoid, cancel, or reduce significant effects following the mitigation hierarchy. Such measures may take the form of guiding principles and policy requirements, drawing on existing best practice. Should mitigation not be possible, there may be a need to consider alternatives which may require some more complex changes to a plan.

1.2.4 The Habitats Regulations[6] provide a definition of a European site at Regulation 8. These sites include Special Areas of Conservation (SAC), Sites of Community Importance, Special Protection Areas (SPA) and sites proposed to the European Commission in accordance with Article 4(1) of the Habitats Directive. In addition, policy in England and Wales notes that the following sites should also be given the same level of protection as a European site[7]:

- A potential SPA (pSPA)
- A possible / proposed SAC (pSAC)
- Listed and proposed Ramsar Sites (wetland of international importance)
- In England, sites identified or required as compensation measures for adverse effects on statutory European sites, pSPA, pSAC, and listed or proposed Ramsar sites.

[5] The Conservation of Habitats and Species Regulations 2017 SI No. 2017/1012, TSO (The Stationery Office), London. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573 [Accessed: 11/06/24].

[6] Conservation of Habitats and Species Regulations 2017 SI No. 2017/1012, TSO (The Stationery Office), London, as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

[7] Department for Levelling up, Housing and Communities & Local Government (2023). National Planning Policy Framework. Para 187.

1.3 Purpose of this report

1.3.1 Lepus Consulting has prepared this report to inform the HRA of the Publication Draft Newcastle-under-Lyme Local Plan at Regulation 19 (referred to hereafter as the 'Local Plan') on behalf of NUL.

1.3.2 This HRA has been prepared in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended)[8], known as the Habitats Regulations. When preparing development plan documents, councils are required by law to carry out an HRA. The requirement for authorities to comply with the Habitats Regulations when preparing a Local Plan is also noted in the Government's online planning practice guidance[9].

1.3.3 NUL, as the Competent Authority, is responsible for preparing the Integrity Test. This can be undertaken in light of the conclusions which are set out in this report, having regard to representations made by Natural England (NE) under the provisions of Regulation 105(2) of the Habitat Regulations.

1.4 Previous HRA work

1.4.1 At the Regulation 18 stage, an HRA was undertaken to support the First Draft Plan[10]. This identified likely significant air quality, water and recreational effects at a number of European sites. Natural England provided a response to the Regulation 18 HRA in August 2023, agreeing with its conclusions that LSEs could not be screened out and that an AA would be required.

[8] The Conservation of Habitats and Species Regulations 2017 SI No. 2017/1012, TSO (The Stationery Office), London. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents [Accessed: 10.06.24] as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573 [Accessed: 10/06/24].

[9] Department for Levelling up, Housing and Communities and Ministry of Housing Communities & Local Government (2019) Planning Practice Guidance Note, Appropriate Assessment, Guidance on the use of Habitats Regulations Assessment. Available at: https://www.gov.uk/guidance/appropriate-assessment [Accessed: 10/06/24].

[10] Lepus Consulting (2023) Newcastle-under-Lyme First Draft Local Plan 2020-2040. Habitats Regulations Assessment – Screening.

2 Methodology

2.1 Overview

2.1.1 HRA is a rigorous precautionary process centred around the conservation objectives of a European site's qualifying interests. It is intended to ensure that European sites are protected from impacts that could adversely affect their integrity. A step-by-step guide to the methodology followed for the HRA, as outlined in the DTA Handbook, is illustrated in **Figure 2.1**. This HRA report provides outputs from Stage 1 and Stage 2 of the HRA process.

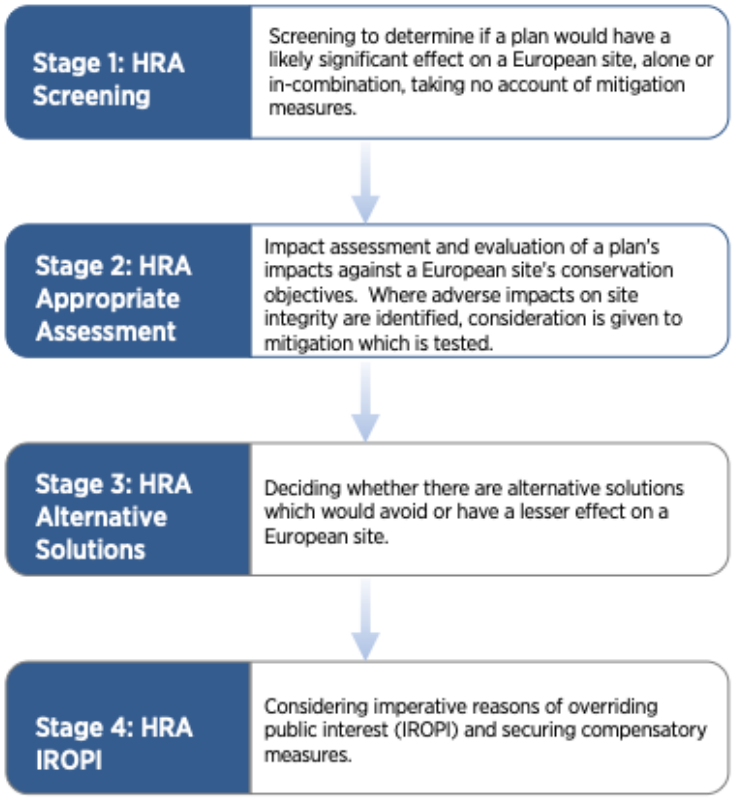

Figure 2.1: *Stages in the Habitats Regulations Assessment process*[11]

2.2 Stage 1: Screening for Likely Significant Effects

2.2.1 The first stage in the HRA process comprises the screening stage (see **Figure 2.1**). The purpose of the screening process is to firstly determine whether a plan is either (1) exempt (because it is directly connected with or necessary to the management of a European site), (2) whether it can be excluded (because it is not a plan), or (3) eliminated (because there would be no conceivable effects) from the HRA process. If none of these conditions apply, it is next necessary to identify whether there are any aspects of the plan which may lead to a Likely Significant Effect (LSE) at a European site, either alone or in-combination with other plans or projects.

[11] Tyldesley, D., and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (January) (2021) edition UK: DTA Publications Limited. Available at: http://www.dtapublications.co.uk/ [Accessed 11/06/24].

2.2.2 Screening was undertaken of the First Draft Plan[12], which concluded that it had the potential to have LSEs on a number of European sites, both alone, and for a number of policies / allocations, in-combination. It therefore concluded that the Draft Local Plan would be screened into the HRA process, and an AA would be required (Stage 2 **- Figure 2.1**).

2.2.3 Where elements of the Local Plan have been updated in response to the Regulation 18 consultation, these components have been re-screened to determine whether the Publication Draft Local Plan is likely to have an LSE alone or in-combination. The codes set out in **Table 2.1** are used to inform the formal screening decision (Column 2). The results of this re-screening exercise are presented in **Chapter 4** of this report.

Table 2.1: Re-screening evaluation and reasoning categories from Part F of the DTA Handbook[13]

Re-screening evaluation and reasoning categories from Chapter F of The Habitats Regulations Assessment Handbook (DTA Publications, 2013):	Screen in / Screen out
A. General statements of policy / general aspirations.	Screen Out
B. Policies listing general criteria for testing the acceptability / sustainability of proposals.	Screen Out
C. Proposal referred to but not proposed by the Plan.	Screen Out
D. General Plan-wide environmental protection / designated site safeguarding / threshold policies.	Screen Out
E. Policies or proposals that steer change in such a way as to protect European sites from adverse effects.	Screen Out
F. Policies or proposals that cannot lead to development or other change.	Screen Out
G. Policies or proposals that could not have any conceivable or adverse effect on a site.	Screen Out
H. Policies or proposals the (actual or theoretical) effects of which cannot undermine the conservation objectives (either alone or in-combination with other aspects of this or other plans or projects).	Screen Out
I. Policies or proposals with a Likely Significant Effect on a site alone.	Screen In
J. Policies or proposals unlikely to have a significant effect alone.	Screen Out
K. Policies or proposals unlikely to have a significant effect either alone or in-combination.	Screen Out
L. Policies or proposals which might be likely to have a significant effect in-combination.	Screen In
M. Bespoke area, site or case-specific policies or proposals intended to avoid or reduce harmful effects on a European site.	Screen In

[12] Lepus Consulting (2023) Newcastle-under-Lyme First Draft Local Plan 2020-2040. Habitats Regulations Assessment – Screening.

[13] Tyldesley, D., and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (December) (2019) edition UK: DTA Publications Limited. Available at: http://www.dtapublications.co.uk/ [Accessed 11/06/24].

2.3 In-combination effects

2.3.1 Should screening conclude there are no LSEs from the Local Plan alone, it is then necessary to consider whether the effects of the Local Plan in-combination with other plans and projects would combine to result in an LSE on any European site. It may be that the Local Plan alone will not have an LSE but could have a residual effect which may contribute to in-combination LSEs on a European site.

2.3.2 The following Local Planning Authority (LPA) local development plans have been considered in the HRA process (see **Appendix A** for a full summary of in-combination effects):

- Cheshire East Council
- Shropshire Council
- Stafford Borough Council
- Staffordshire County Council
- Staffordshire Moorlands District Council
- Stoke-on-Trent City Council
- Telford and Wrekin Council

2.3.3 The HRA in-combination assessment has also drawn on HRA work undertaken to support the preparation of these LPA local plans. Alongside these local development plans, consideration has also been given to topic specific plans and projects including the Staffordshire County Council Waste and Minerals Local Plans[14,15], Staffordshire County Council Local Transport Plan[16] and relevant river basin and water resource management plans. The in-combination assessment is compliant with the Wealden Judgement[17].

2.3.4 The European Court Judgement on the interpretation of the Habitats Directive in the case of People Over Wind and Sweetman vs Coillte Teoranta (Case C-323/17[18]) determined that mitigation measures are only permitted to be considered as part of an AA. The HRA re-screening process has therefore taken no account of incorporated mitigation or avoidance measures that are intended to avoid or reduce harmful effects on a European site when assessing the LSE of the Local Plan on European sites. These are measures, which if removed (i.e. should they no longer be required for the benefit of a European site), would still allow the lawful and practical implementation of a plan.

[14] Staffordshire County Council and City of Stoke-on-Trent (2013) Staffordshire and Stoke-on-Trent Joint Waste Local Plan 2010-2026. Available at: https://www.staffordshire.gov.uk/environment/planning/policy/wastelocalplan/Documents/Staffordshire-and-Stoke-on-Trent-Joint-Waste-Local-Plan-2010-to-2026-adopted-March-2013.pdf [Accessed 11/06/24].

[15] Staffordshire County Council (2017) The Minerals Local Plan for Staffordshire 2015 to 2030. Available at: https://www.staffordshire.gov.uk/environment/planning/policy/mineralslocalplan/Documents/The-Minerals-Local-Plan-for-Staffordshire-2015-2030.PDF [Accessed 11/06/24].

[16] Staffordshire County Council (2011) Staffordshire Local Transport Plan 2011. Available at: https://www.staffordshire.gov.uk/Transport/Transport-Planning/Local-transport-plan/Documents/staffordshirelocaltransportplan2011strategyplan.pdf [Accessed 11/06/24].

[17] Wealden District Council & Lewes District Council before Mr Justice Jay. Available at: https://www.bailii.org/ew/cases/EWHC/Admin/2017/351.html [Accessed 11/06/24].

[18] InfoCuria (2018) Case C-323/17. Available at: http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN [Accessed 11/06/24]

2.4 Stage 2: Appropriate Assessment and Integrity Test

2.4.1 Stage 2 of the HRA process comprises the AA and Integrity Test. The purpose of the AA is to undertake an assessment of the implications of a plan for a European site in light of its conservation objectives[19].

2.4.2 As part of this process, plan makers should take account of the potential consequences of no action, the uncertainties inherent in scientific evaluation and they should consult interested parties on the possible ways of managing the risk, for instance, through the adoption of mitigation measures. Mitigation measures should aim to avoid, minimise or reduce significant effects on European sites. Mitigation measures may take the form of policies within the Local Plan, or mitigation proposed through other plans or regulatory mechanisms. All mitigation measures must be deliverable and able to mitigate adverse effects for which they are targeted.

2.4.3 The AA aims to present information in respect of all aspects of the Local Plan and ways in which it could, either alone or in-combination with other plans and projects, impact a European site. The plan making body (as the Competent Authority) must then ascertain, based on the findings of the AA, whether the Publication Draft Local Plan will adversely affect the integrity of a European site either alone or in-combination with other plans and projects. This is referred to as the Integrity Test.

2.5 Dealing with uncertainty

2.5.1 Uncertainty is an inherent characteristic of an HRA, and decisions can be made using currently available and relevant information. This concept is reinforced in the 7th of September 2004 'Waddenzee' ruling[20]:

2.5.2 "However, the necessary certainty cannot be construed as meaning absolute certainty since that is almost impossible to attain. Instead, it is clear from the second sentence of Article 6(3) of the Habitats Directive that the competent authorities must take a decision having assessed all the relevant information which is set out in particular in the AA. The conclusion of this assessment is, of necessity, subjective in nature. Therefore, the competent authorities can, from their point of view, be certain that there will be no adverse effects even though, from an objective point of view, there is no absolute certainty."

2.6 The Precautionary Principle

2.6.1 The HRA process is characterised by the Precautionary Principle. This is described by the European Commission: "If a preliminary scientific evaluation shows that there are reasonable grounds for concern that a particular activity might lead to damaging effects on the environment, or on human, animal or plant health, which would be inconsistent with protection normally afforded to these within the European Community, the Precautionary Principle is triggered". The Precautionary Principle is embedded in the Integrity Test.

[19] Ministry of Housing, Communities and Local Government (July 2019) Planning Practice Guidance Note, Appropriate Assessment, Guidance on the use of Habitats Regulations Assessment.

[20] EC Case C-127/02 Reference for a Preliminary Ruling 'Waddenzee' 7th September 2004 Advocate General's Opinion (para 107).

3 Scoping of Threats and Pressures at European Sites

3.1 Introduction

3.1.1 An important initial stage of the screening process is gathering information on European sites which may be affected by the Local Plan. This is informally known as scoping and provides an understanding of potential impact pathways from the Local Plan and connections to European sites and their vulnerabilities. This information is then used to inform the screening assessment (**Chapter 4**). A scoping exercise was undertaken at Regulation 18 as part of the First Draft Local Plan HRA. This chapter therefore presents an update to baseline information for each European site and their associated threats and pressures in the context of potential impacts from the Publication Draft Local Plan at Regulation 19.

3.2 Identification of a HRA study area

3.2.1 Each European site has its own intrinsic qualities, besides the habitats or species for which it has been designated, that enables the site to support its ecosystems. An important aspect of this is that the ecological integrity of each site can be vulnerable to change from natural and human induced activities in the surrounding environment (known as pressures and threats). For example, sites can be affected by land use plans in a number of different ways, including the direct land take of new development, the type of use the land will be put to (for example, an extractive or noise-emitting use), the pollution / threat a development generates (air pollution, water pollution or increased recreational pressure), and the resources used (for example water abstraction).

3.2.2 An intrinsic quality of any European site is its functionality at the landscape ecology scale. This refers to how the site interacts with its immediate surroundings as well as the wider area. This is particularly the case where there is potential for developments resulting from a plan to generate water or air-borne pollutants, use water resources or otherwise affect water levels. Adverse effects may also occur via impacts to mobile species occurring outside a designated site boundary, but which are qualifying features of the site. For example, there may be effects on protected birds, bats and fish which use land outside a designated site for foraging, feeding, roosting, breeding or other activities.

3.2.3 There is no guidance that defines the study area for inclusion in an HRA. Planning Practice Guidance for AA[21] indicates that:

[21] Department for Levelling up, Housing and Communities and Ministry of Housing Communities & Local Government. 2019. Planning Practice Guidance Note, Appropriate Assessment, Guidance on the use of Habitats Regulations Assessment. Available at: https://www.gov.uk/guidance/appropriate-assessment [Accessed 11/06/24].

3.2.4 "The scope and content of an appropriate assessment will depend on the nature, location, duration and scale of the proposed plan or project and the interest features of the relevant site. 'Appropriate' is not a technical term. It indicates that an assessment needs to be proportionate and sufficient to support the task of the competent authority in determining whether the plan or project will adversely affect the integrity of the site". This scoping exercise will help to determine the HRA study area and therefore which European sites will be considered in the HRA process.

3.3 Scoping impact pathways

3.3.1 Threats and pressures to which European sites are vulnerable have been identified through reference to data held by the JNCC and Natural England and through reference to Ramsar Information Sheets and Site Improvement Plans (SIPs). This information provides current and predicted issues at each European site and is summarised in **Appendix B.**

3.3.2 Supplementary advice notices prepared by Natural England often provide more recent information on threats and pressures upon European sites than SIPs and have therefore also been reviewed. A number of threats and pressures are unlikely to be exacerbated by the Local Plan and have therefore not been considered.

3.3.3 Sites of Special Scientific Interest (SSSIs) are protected areas in the United Kingdom designated for conservation. SSSIs are the building blocks of site-based nature conservation in the UK. A SSSI will be designated based on the characteristics of its fauna, flora, geology and/or geomorphology. Whilst typically analogous in ecological function, the reasons for its designation can be entirely different to those for which the same area is designated as a SAC, SPA or Ramsar.

3.3.4 Natural England periodically assesses the conservation conditions of each SSSI unit, assigning it a status. The conservation status of each SSSI highlights any European site that is currently particularly vulnerable to threats/pressures. Conservation status is defined as follows:

- Favourable;
- Unfavourable – recovering;
- Unfavourable – no change; or
- Unfavourable – declining.

3.3.5 SSSI units in either an 'Unfavourable – no change' or 'Unfavourable – declining' condition indicate that the European site may be particularly vulnerable to certain threats or pressures. It is important to remember that the SSSI may be in an unfavourable state due to the condition of features unrelated to its designation. However, it is considered that the conservation status of SSSI units that overlap with European sites offer a useful indicator of habitat / species health at a particular location.

3.3.6 Natural England defines zones around each SSSI which may be at risk from specific types of development, these are known as Impact Risk Zones (IRZ). These IRZs are *"a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts. The IRZs also cover the interest features and sensitivities of European sites, which are underpinned by the SSSI designation and "Compensation Sites", which have been secured as compensation for impacts on Natura 2000/Ramsar sites"*[22]. The location of IRZs has been taken into consideration in this assessment as they provide a useful guide as to the location of functionally linked land (defined in **paragraph 3.3.7**) and likely vulnerabilities to development proposed within the Local Plan.

3.3.7 Based on the previous HRA work undertaken at Regulation 18, the following potential impact pathways are considered to be within the scope of influence of the Local Plan. Land use planning also has the potential to result in impacts upon qualifying features when located outside a designation boundary, known as functionally linked land (FLL)[23]. This HRA therefore also considers effects upon FLL or mobile species within the following topic assessments.

- **Air pollution:** Land use planning has the potential to increase atmospheric emissions of pollutants to the air. These can result in adverse effects at European sites such as eutrophication (nitrogen), acidification (nitrogen and sulphur) and direct toxicity (ozone, ammonia and nitrogen oxides)[24].
- **Water quantity:** Urban development can change run off rates from urbanised areas to European sites or watercourses which run through them. An increase in housing provision can also influence supply and demand for water within the region which may impact water levels.
- **Water quality:** Surface water run-off from urban areas has the potential to reduce the quality of water entering a catchment. Water quality may also be reduced through point source effluent discharges from new development at Wastewater Treatment Works (WwTWs) and other controlled discharge sources. Changes in water quality also have the potential to affect functionally linked land (land or watercourses outside a designated site boundary).
- **Recreational pressure:** New housing development has the potential to increase recreational pressure upon European sites which are accessible to the public.

[22] Natural England (2019) Natural England's Impact Risk Zones for Sites of Special Scientific Interest User Guidance. Available at: https://magic.defra.gov.uk/Metadata_for_magic/SSSI%20IRZ%20User%20Guidance%20MAGIC.pdf [Accessed: 14/06/24].

[23] "The term 'functional linkage' refers to the role or 'function' that land or sea beyond the boundary of a European site might fulfil in terms of ecologically supporting the populations for which the site was designated or classified. Such land is therefore 'linked' to the European site in question because it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status". Source: Natural England (2016) Commissioned Report. NECR207. Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects - a review of authoritative decisions.

[24] APIS (2016) Ecosystem Services and air pollution impacts.

- **Urbanisation effects:** Urban development has the potential to result in disturbing activities (such as noise, lighting, cat predation and visual disturbance). Disturbance effects may impact upon European sites themselves and also their qualifying features when outside a designated site boundary. It may also result in the fragmentation of connecting habitats and corridors which could hinder the movement of mobile qualifying species when located outside a designated site boundary.

3.4 Air quality

3.4.1 Natural England has developed a standard methodology for the assessment of traffic related air quality impacts under the Habitats Regulations which is relevant to the HRA of land use plans[25]. This guidance sets a methodology and thresholds for the screening of Likely Significant (air quality) Effects at the HRA screening stage (Stage 1 of the HRA process).

3.4.2 Natural England's guidance (in the form of a series of questions / thresholds below) has been applied to determine potential air quality impact pathways to European sites:

- Does the Local Plan give rise to emissions which are likely to reach a European site?
- Are the qualifying features of sites within 200m of a road sensitive to air pollution?
- Could the sensitive qualifying features of the site be exposed to emissions?
- Application of screening thresholds (alone and then, if necessary, in-combination).

Does the Local Plan give rise to emissions which are likely to reach a European site?

3.4.3 The Local Plan will trigger housing and employment development and as such increase traffic related emissions. Air quality impacts have been shown to typically affect European sites within 10km of a plan boundary[26]. Campman and Kite (2021) note that '*this zone is based on professional judgment recognising that the effects of growth from development beyond 10km will have been accounted for in the Nitrogen Futures modelling work business as usual scenario*'[27].

3.4.4 This 10km distance threshold can be a useful guide to identify the broad areas that may be impacted by air quality. However, it is acknowledged that consideration should also be given to larger residential or commercial allocations and their wider potential for air quality impacts in the context of the local and regional road network.

[25] Natural England (2018) Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (NEA001). Available at: http://publications.naturalengland.org.uk/publication/4720542048845824 [Accessed: 11/06/24].

[26] Chapman, C and Kite, B. (2021) Main Report. Guidance on Decision-making Thresholds for Air Pollution. JNCC Report No. 696. Available at: https://hub.jncc.gov.uk/assets/6cce4f2e-e481-4ec2-b369-2b4026c88447 [Accessed 11/06/24].

[27] JNCC. Nitrogen Future. Available at: https://jncc.gov.uk/our-work/nitrogen-futures/ [Accessed 11/06/24].

3.4.5 Data obtained from the Office for National Statistics highlights the most common destinations for journeys to work undertaken by car or van arising from and finishing in the plan area[28]. The key traffic destinations / origins include neighbouring authority areas such as Stoke-on-Trent, Cheshire East, Staffordshire Moorlands and Stafford. The following European sites are located within 10km of the Local Plan boundary and within these key commuting areas:

- Midland Meres and Mosses Phase 1 Ramsar
- Midland Meres and Mosses Phase 2 Ramsar
- West Midland Mosses SAC

Are the qualifying features of sites within 200m of a road sensitive to air pollution?

3.4.6 It is widely accepted that air quality impacts are greatest within 200m of a road source, decreasing with distance[29,30,31]. Baseline mapping data has been used to determine the proximity of European sites, and their qualifying features, to roads (within 200m) which may result in an exceedance of Natural England's screening thresholds (A and B roads and motorways) within a 10km buffer from the Local Plan administrative area and within the key commuting area[32].

3.4.7 The UK Air Pollution Information System (APIS) provides information on all European sites and the sensitivity of their qualifying features (habitats and / or species) to air pollution. This data has been interrogated, alongside a desk-based review of site-based data, to determine whether there may be impact pathways from the Local Plan to any European site through a change in atmospheric emissions (**Table 3.1**). Based on a review of aerial mapping data and priority habitat information it is concluded that qualifying features of West Midland Mosses SAC, Midland Meres and Mosses Phase 1 Ramsar and Midland Meres and Mosses Phase 2 Ramsar may be located within 200m of an A or B road or motorway. This information suggests that these locations are sensitive to changes in air quality, in particular from atmospheric nitrogen deposition (all qualifying features).

[28] Office for National Statistics (2011) Location of usual residence and place of work by method of travel to work (2011 census data). Travel by car or van only. Available at: https://www.nomisweb.co.uk/census/2011/WU03UK/chart/1132462281 [Accessed: 25/04/24].

[29] The Highways Agency, Transport Scotland, Welsh Assembly Government, The Department for Regional Development Northern Ireland (2007) Design Manual for Roads and Bridges, Volume 11, Section 3, Part 1: Air Quality.

[30] Natural England (2016) The ecological effects of air pollution from road transport: an updated review. Natural England Commissioned Report NECR 199.

[31] Bignal, K., Ashmore, M. & Power, S. (2004) The ecological effects of diffuse air pollution from road transport. English Nature Research Report No. 580, Peterborough.

[32] As per Nitrogen Futures Modelling Work – see Paragraph 5.4.8.

Table 3.1: Atmospheric pollution impact pathways to European sites within the influence of the Local Plan boundary

European sites within the influence of the Local Plan area	Is the European site sensitive to air quality impacts (as indicated in SIP / NE Supplementary Conservation Advice – Appendix B)?	Is there a strategic road link (A and B road or motorway) located within 200m of the site?
Midland Meres and Mosses Phase 1 Ramsar (Bagmere SSSI)	Not indicated on Ramsar Information Sheet. APIS notes that a number of features are sensitive to nitrogen and acid deposition[33].	No
Midland Meres and Mosses Phase 1 Ramsar (Betley Mere SSSI)	Not indicated on Ramsar Information Sheet. APIS notes that a number of features are sensitive to nitrogen and acid deposition.	No
Midland Meres and Mosses Phase 1 Ramsar (Wybunbury Moss SSSI)	Not indicated on Ramsar Information Sheet. APIS notes that a number of features are sensitive to nitrogen and acid deposition.	Yes (B5071)
Midland Meres and Mosses Phase 2 Ramsar (Oakhanger Moss SSSI)	Not indicated on Ramsar Information Sheet. APIS notes that a number of features are sensitive to nitrogen and acid deposition.	Yes (M6)
Midland Meres and Mosses Phase 2 Ramsar (Black Firs Cranberry Bog SSSI)	Not indicated on Ramsar Information Sheet. APIS notes that a number of features are sensitive to nitrogen and acid deposition.	Yes (B5500)
Midland Meres and Mosses Phase 2 Ramsar (Cop Mere SSSI)	Not indicated on Ramsar Information Sheet. APIS notes that a number of features are sensitive to nitrogen and acid deposition.	No
West Midland Mosses SAC (Wybunbury Moss SSSI) – also designated as a Ramsar (above)	Yes	Yes (B5071)

Could the sensitive qualifying features of the site be exposed to emissions?

3.4.8 As noted above, the Local Plan will trigger housing and employment development and as such has the potential to increase traffic related emissions within 10km of the Plan area and key commuting areas and therefore along road links within 200m of European sites listed in **Table 3.1**.

[33] Air Pollution Information System (2016) https://www.apis.ac.uk/ [Accessed: 22/06/24].

Application of screening thresholds (alone and then, if necessary, in-combination)

3.4.9 Natural England's advice on the assessment of air quality impacts under the Habitats Regulations states that consideration should be given to the risk of road traffic emissions associated with a Local Plan[34]. This advice states that an assessment of the risks from road traffic emissions can be expressed in terms of the average annual daily traffic flow (AADT as a proxy for emissions). The use of the AADT screening threshold is advocated by Highways England in their Design Manual for Roads and Bridges (DMRB). This screening threshold is intended to be used as a guide to determine whether a more detailed assessment of the impact of emissions from road traffic is required. This non-statutory or guideline threshold is based on a predicted change of daily traffic flows of 1,000 AADT or more (or heavy-duty vehicle (HDV) flows on motorways change by 200 AADT or more).

3.4.10 The AADT thresholds do not themselves imply any intrinsic environmental effects and are used solely as a trigger for further investigation. Widely accepted environmental benchmarks for imperceptible impacts are set at 1% of the critical load or level, which is considered to be roughly equivalent to DMRB thresholds for changes in traffic flow of 1,000 AADT (or HDVs on motorways a change of 200 or AADT or more). This has been confirmed by modelling using the DMRB Screening Tool that used average traffic flow and speed figures from the Department for Transport (DfT) data to calculate whether the NO_x outputs could result in a change of >1% of critical load / level on different road types. A change of >1,000 AADT on a road was found to equate to a change in traffic flow which might increase emissions by 1% of the critical load or level and might consequentially result in an environmental effect nearby (e.g. within 10 metres of roadside).

3.4.11 The AADT thresholds and 1% of critical load/level are considered by Natural England to be suitably precautionary as any emissions below this level are widely considered to be imperceptible and, in the case of AADT, undetectable through the DMRB model. There can, therefore, be a high degree of confidence in its application to screen for risks of an effect.

3.4.12 A Strategic Transport Assessment (STA) is being undertaken in support of the Local Plan. The STA provides an assessment of the transport impacts of sites allocated in the Local Plan. The STA draws on traffic modelling outputs from the North Staffordshire Multi-Modal (NSMM) transport model. This model has been validated against recent Department for Transport (DfT) and National Highways (NH) count data. A number of model runs have been undertaken as part of the STA to inform the Local Plan including one for each of the strategic allocations (including Junction 16 of the M6, Talke and Keele) plus other development allocated within the Local Plan. A final run is schedule for the final suite of Regulation 19 allocations, which was not available at the time of writing.

[34] Natural England (2018) Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (NEA001). Available at: http://publications.naturalengland.org.uk/publication/4720542048845824 [Accessed: 22/06/24].

3.4.13 Traffic modelling data has been extracted from the NSMM to inform the screening of air quality impacts. AADTs were calculated using modelled AM and PM peak hour flows. As traffic growth post-Covid-19 has largely stagnated, the model is considered to be over-predicting traffic growth and therefore provides a precautionary and worst-case scenario. Further details on the traffic modelling and associated methodologies can be found in the STA[35].

3.4.14 Traffic data, as AADT movements, was provided for all road links within 200m of European sites set out in **Table 3.1**, and HDV movements were provide for the M6. Data was provided for the following three scenarios (Figure 6.1):

- Base year – 2015;
- Do Nothing – 2040 (Traffic growth excluding Local Plan but including growth in other authority areas); and
- Do Something – 2024 (Including Local Plan in addition to growth in other authority areas).

3.4.15 The 2040 Do Nothing AADT for the M6 road links were calculated from National Highways 2023 WebTRIS data which has been factored to 2040 using 2022 DfT National Road Traffic Projections (NRTP). As the relevant M6 road link sits within the periphery of the NSMM model, it was considered that this approach would give a more accurate AADT estimate rather than using the raw model value.

3.4.16 At the time of writing, the traffic modelling run for the final suite of Regulation 19 allocations had not been undertaken. Therefore, traffic data for the 2040 Do Something scenario has been taken from the 2040 Junction 16 strategic site run scenario. This scenario includes all core Local Plan allocations as well as the strategic site at the M6 Junction 16. It was considered that this data is likely to be comparable to the final combined model run outputs which will include all allocations in the Regulation 19 Local Plan and required traffic related mitigations.

3.4.17 The results for the Do-Minimum and Do-Something scenarios were compared against one-another to show the impacts of the Local Plan in-isolation (alone). The in-combination assessment was completed by comparing the results of the Do-Nothing and the Do-Something scenarios.

3.4.18 A summary of traffic data provided by Sweco for road links within the model which are located within 200m of a European site are presented in **Table 3.2**. This data was screened against Natural England's 1,000 AADT threshold for LSEs. Where AADTs for the Local Plan alone exceeded the 1,000 AADT threshold, these road links were screened in for further assessment through the AA process. Where the 1,000 AADT threshold for the Local Plan alone was not exceeded, the same threshold was applied to traffic flows for the Local Plan in-combination. Where in-combination traffic flows exceeded the 1,000 AADT threshold, these road links were screened in for further consideration in the AA process. Where the 1,000 AADT in-combination thresholds were not exceeded, these road links were screened out of the HRA process and not considered further.

[35] Sweco. (2024) Newcastle under Lyme Local Plan Strategic Transport Assessment Steering Group Inception Technical Note.

Table 3.2: Air quality screening for all road links within 200m of a European sites

European site (and corresponding SSSI component)	Road Link	Baseline flows (AADT, 2015)	Do Nothing flows (AADT, 2040)	Do Something flows (AADT, 2040)	Impact of the Local Plan alone	Impact of the Local Plan in-combination
West Midlands SAC Midland Meres & Mosses Phase 1 Ramsar Wybunbury Moss SSSI	B5071[36]	8,714	6,555	5,390	-1,165	-3,324
Midland Meres & Mosses Phase 2 Ramsar Black Firs & Cranberry Bog SSSI	B5500	8,714	6,555	5,390	-1165	-3,324
Midland Meres & Mosses Phase 2 Ramsar Black Firs & Cranberry Bog SSSI	A531	2,208	3,055	3,826	771	1,618
Midland Meres & Mosses Phase 2 Ramsar Oakhanger Moss SSSI	M6 All vehicles	130,501	152,122	153,405	1,283	22,904
Midland Meres & Mosses Phase 2 Ramsar Oakhanger Moss SSSI	M6 HGV	23,504	26,503	28,439	1,936	4,935

[36] The B5071 is not located within the coverage of the NSMM. As a result, traffic flows from the B5500 have been taken as this road is of a similar characteristic and location to the B5071.

3.4.19 Traffic modelling for the Black Firs and Cranberry Bog SSSI component of the Midland Meres and Mosses Phase 2 Ramsar indicates that there is no alone exceedance of Natural England's 1,000 AADT threshold on either road link within 200m; B5500 and A531. Given there is no alone exceedance of thresholds, it is necessary to next consider effects in-combination. In in-combination traffic data for the A531 shows an exceedance of the 1,000 AADT threshold, but there is no exceedance on the B5500. Air quality in-combination impacts along the A531 at this component of the Midland Meres and Mosses Phase 2 Ramsar must therefore be screened in and considered further in the HRA process. The B5500 road link can be screened out of the HRA process.

3.4.20 The B5071 is not located within the coverage of the NSMMs. As a result, traffic flows from the B5500 have been used as a proxy. The B5500 is considered to be of a similar characteristic and location to the B5071[37]. Traffic modelling indicates that there is no alone exceedance of Natural England's 1,000 AADT threshold on this road link either alone or in-combination. Air quality impacts at this component of the Midland Meres and Mosses Phase 1 Ramsar and West Midlands SAC can therefore be screened out of the HRA process.

3.4.21 Traffic modelling for the Oakhanger Moss SSSI component of the Midland Meres and Mosses Phase 2 Ramsar indicates that there is an alone exceedance of Natural England's 1,000 AADT threshold. In addition, the screening threshold of 200 AADT HDV has been applied for the M6. This data shows that there is an alone exceedance of 200 HDV at this location. Air quality LSEs at this component of the Midland Meres and Mosses Phase 2 Ramsar from flows on the M6 must therefore be screened in and considered further in the HRA process.

3.4.22 In summary the following European sites have been screened in for further consideration of air quality impacts in the AA (see **Chapter 5**):

- Midland Meres and Mosses Phase 2 Ramsar - Black Firs & Cranberry Bog SSSI - A531
- Midland Meres and Mosses Phase 2 Ramsar - Oakhanger Moss SSSI - M6

3.5 Water quality and water quantity

3.5.1 Urban development coming forward through the Local Plan has the ability to have indirect effects on water sensitive European sites through a number of impacts discussed below. These impacts have the potential to change the water quantity and quality entering a European site:

- Change in surface permeability and run off rates;
- Increased water demand to supply new homes and businesses;
- Reduced quality of surface run off water; and
- Increased effluent discharge for treatment from WwTWs.

3.5.2 A review of Natural England's SIPs and Ramsar information sheets (**Appendix B**) indicates that there are two hydrologically sensitive European sites within the Plan area:

- Midland Meres and Mosses Phase 1 Ramsar (Betley Mere SSSI)

[37] Pers comm Sweco (June 2024).

- Midland Meres and Mosses Phase 2 Ramsar (Black Firs and Cranberry Bog SSSI)

3.5.3 European sites located outside the Plan area can also be affected by changes in water supply and quality where they are hydrologically linked to development in the Local Plan. In addition, land use planning has the potential to result in impacts upon qualifying features of European sites (for instance species of fish or birds) when they are located outside a designation boundary, known as functionally linked land (FLL) (a definition is provided in **paragraph 3.3.7**).

3.5.4 The tests set out under Article 105 of the Habitats Regulations need to be applied in respect of plans which may significantly affect FLL with an important role in contributing to the favourable conservation status of the relevant species for which a European site is designated.

3.5.5 Decisions relating to water abstraction for supply and disposal of water are controlled through a number of licensing mechanisms and a high-level water planning framework which is subject to HRA. This ensures the protection of the water environment and compliance with the Water Framework Directive (WFD).

3.5.6 The Plan area lies within the Humber River Basin District, Severn River Basin District and the North West River Basin District. Each river basin district is managed through division into Surface Water Management Catchments (SWMCs). The Plan area lies within the Trent Valley Staffordshire, Severn Middle Shropshire, and the Weaver Gowy SWMCs as illustrated in **Figure 3.1**.

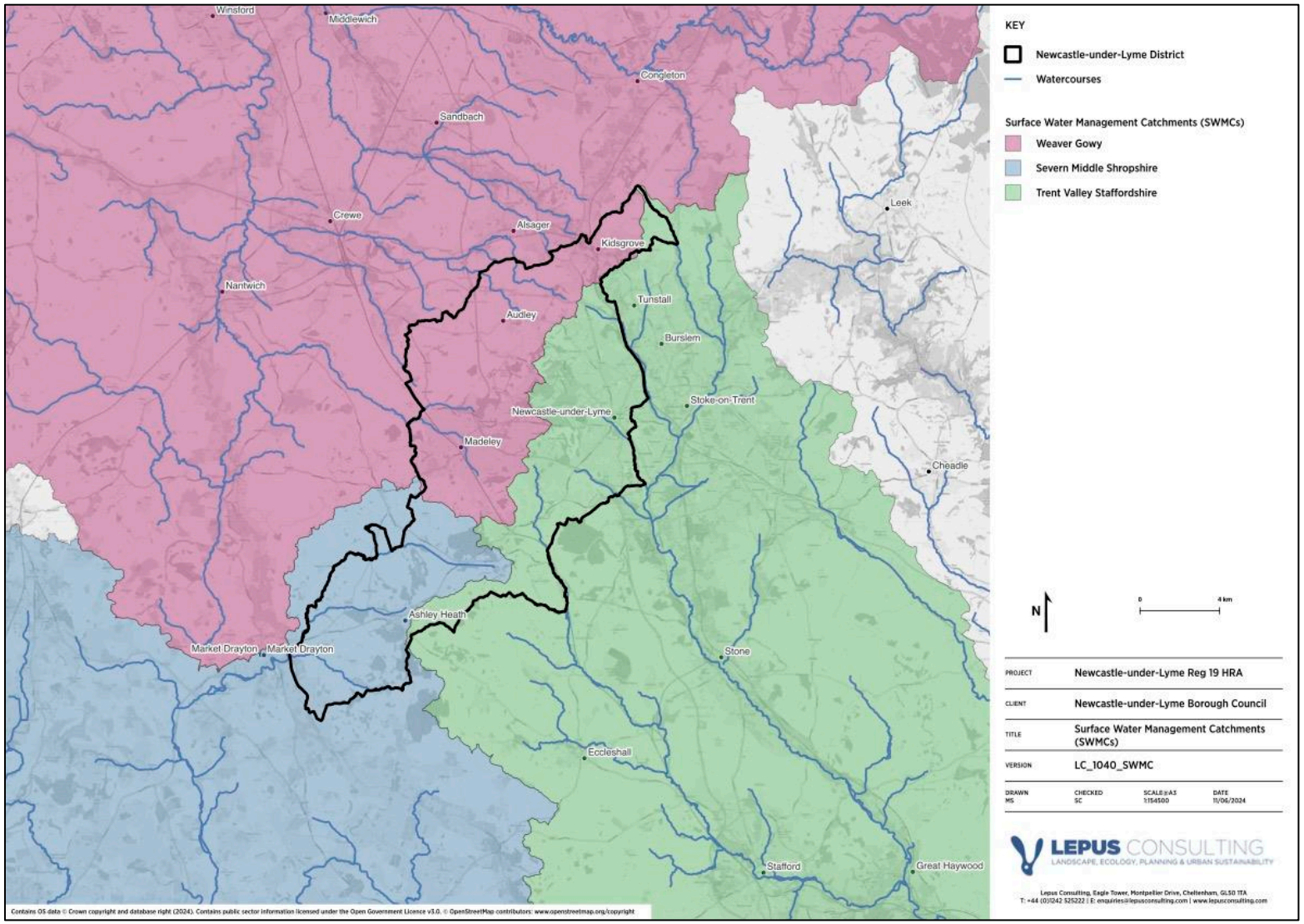

Figure 3.1: *Surface Water Management Catchments located within the Plan area*

3.5.7 The eastern section of the Plan area lies within the Trent Valley Staffordshire SWMC of the Humber River Basin District (**Figure 3.1**). This area of the Local Plan is drained by a number of tributaries of the River Trent, including the River Meece, Park Brook, Lyme Brook, Fowlea Brook and the Ford Green Brook. The River Trent is a tributary of the Humber, flowing into the Humber Estuary, which is designated as a SAC, SPA and Ramsar for a number of qualifying features (see **Appendix B**).

3.5.8 The south-western section of the Plan area lies within the Severn Middle Shropshire SWMC of the Severn River Basin District (**Figure 3.1**). The River Tern flows along the southwestern boundary of Newcastle-under-Lyme and is fed by a number of tributaries which drain the Plan area including the Coal Brook and Loggerheads Brook. The River Tern then flows in a south westerly direction, fed by a number of other tributaries including the Roden, Meese and Strine, before joining the River Severn to the north west of Worcester. The River Severn ultimately flows into the Severn Estuary, which is designated as a SAC, SPA and Ramsar (see **Appendix B**).

3.5.9 The western area of the Plan area lies within the Weaver Gowy SWMC of the North West River Basin District (**Figure 3.1**). The two main rivers within this catchment are the Weaver and the Gowy and their major tributaries include the River Dane and the River Wheelock. The Plan area is drained by the River Lea, Checkley Brook, Wistaston Brook and Valley Brook which are tributaries of the River Dane. Ultimately the catchment drains into the Mersey Estuary, which is designated as a SPA and Ramsar (see **Appendix B**).

3.5.10 The Severn RBMP[38], Humber RBMP[39] and North West RBMP[40] provide a framework for protecting and enhancing the benefits provided by the water environment. To achieve this, and because water and land resources are closely linked, they also inform decisions on land-use planning. RBMPs provide strategic level policy guidance in relation to baseline classification of water bodies, statutory objectives for protected areas and water bodies, and a summary of measures to achieve statutory protection.

[38] Environment Agency (2022) Severn River Basin Management Plan summary and cross border catchments. Available at: https://www.gov.uk/government/publications/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales [Accessed 29/05/24].

[39] Environment Agency (2022) Humber River basin district management plan: updated 2022. Available at: https://www.gov.uk/guidance/humber-river-basin-district-river-management-plan-updated-2022 [Accessed 29/05/24].

[40] Environment Agency (2022) North West river basin district river basin management plan: updated 2022. Available at: https://www.gov.uk/guidance/north-west-river-basin-district-river-basin-management-plan-updated-2022 [Accessed 29/05/24].

3.5.11 Severn Trent Water and United Utilities are the statutory water suppliers and Sewerage Undertakers for Newcastle-under-Lyme. The role of the sewerage undertaker includes the collection and treatment of wastewater from domestic and commercial premises, and in some areas, it also includes the drainage of surface water from building curtilages to combined or surface water sewers[41]. It is a statutory requirement that every five years water companies produce and publish a Water Resources Management Plan (WRMP) (a summary is provided in **Appendix A**). The WRMP demonstrates long term plans to accommodate the impacts of population growth, drought, environmental obligations, and climate change uncertainty in order to balance supply and demand. WRMP's are linked to Drought Plans (a summary is provided in **Appendix A**) which detail the steps that would be taken to ensure supplies can be maintained whilst minimising the impacts to rivers and the environment during drought events. From 2024, a supply-demand deficit is predicted in the area, however the WRMPs define actions to address this.

3.5.12 The draft Severn Trent WRMP[42] estimates future water demands and sets out plans to achieve its vision (see **Appendix A**). The WRMP was subject to an HRA which identified potential LSEs at a number of European sites[43]. It defined the requirement for AA of detailed preferred plan options once information on these is available at subsequent stages of water resource planning. At the strategic level of the WRMP, the HRA set out suitable mitigation measures to address adverse impacts, such as restrictions on abstraction licences and a review of 'hands off flows' and concluded no adverse impacts on site integrity.

3.5.13 The draft United Utilities WRMP[44] sets out the strategy to achieving a long-term, best value, sustainable water supply plan and proposes a flexible solution over the period 2025 to 2050 (see **Appendix A**). The WRMP was subject to an HRA which concluded that the WRMP is likely to have a significant effect on a number of European sites[45]. The HRA drew on plan level mitigation options and concluded that, with these in place, the WRMP would have no adverse impact alone or in-combination on any European sites.

[41] JBA Consulting (2020) Newcastle-under-Lyme Borough Council and Stoke-on-Trent City Council Water Cycle Study: Phase 1.

[42] Severn Trent Water. Draft Waste Resources Management Plan 2024. Available at: https://www.severntrent.com/about-us/our-plans/water-resources-management-plan/dwrmp24-draft-documents/ [Accessed 11/06/24].

[43] Ricardo (2019) Draft Water Resources Management Plan 2024 Habitats Regulations Assessment. Available at: https://www.severntrent.com/content/dam/dwrmp-st-v2/STdWRMP24-HRA-Issue-2-redacted.pdf [Accessed 11/06/24].

[44] United Utilities (2023) Revised Draft Water Resources Management Plan 2024: Main Report. Available at: https://www.unitedutilities.com/globalassets/z_corporate-site/about-us-pdfs/wrmp24-drafts/revised-draft-wrmp24-main-report.pdf [Accessed 03/06/24].

[45] WSP (2024) United Utilities Water: Habitats Regulations Assessment of the Water Resource Management Plan 2024. Available at: https://www.unitedutilities.com/globalassets/documents/corporate-documents/uu-revised-draft-wrmp24-hra-2024_redacted.pdf [Accessed 03/06/24].

3.5.14 The Environment Agency (EA) prepares Abstraction Licensing Strategies (ALS) through its Catchment Abstraction Management Strategy (CAMS) process. These ALSs are prepared for each sub-catchment within a river basin. The CAMS process aims to assess the amount of water available for further abstraction licensing, taking into account environmental needs and implementation of the RBMPs and water abstraction plans[46]. The CAMS process is published in a series of ALSs for each river basin. The Plan area lies within the Shropshire Middle Severn, Staffordshire Trent Valley and Weaver and Dane ALS areas. ALS are important in relation to the RBMP as they assist in determining current and future pressures on water resources and how the supply and demand will be managed by the relevant water companies through WRMPs.

3.5.15 For the purposes of water resource planning, the area is divided into Water Resource Zones (WRZs). WRZs are defined by the EA as the "largest possible zone in which customers share the same risk of a resource shortfall"[47]. These WRZs have been amalgamated into larger sub-regional supply areas. The Plan area is served by the North Staffordshire WRZ as supplied by Severn Trent Water (STW)[48]. Staffordshire is classified as an area under moderate water stress with a focus on measures to conserve water through enhancing efficiency and the provision of green and blue infrastructure to reduce water demands.

3.5.16 Surface Water Management Plans (SWMPs) outline the preferred surface water management strategy alongside establishing a long-term action plan for surface water[49]. A SWMP is currently in place for Kidsgrove at the north of the Plan area.

3.5.17 A Water Cycle Study (WCS)[50] was prepared in support of the Local Plan. The purpose of the WCS is to assess the potential issues relating to future development within Newcastle-under-Lyme and the impacts on water supply, wastewater collection and wastewater treatment. The WCS is required to assess the constraints and requirements on the water infrastructure that will arise from potential growth. The WCS identified one groundwater dependent European site (Pasturefields Salt Marsh SAC) as having 'flow' as a significant water management issue (SWMI) within the North Staffordshire WRZ.

[46] DEFRA (2021) Policy Paper: Water Abstraction Plan.

[47] Severn Trent. A1 Water Resource Zones. Available at: https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.severntrent.com/content/dam/stw/ST_Corporate/About_us/Docs/Appendix-A-How-much-water-do-we-have-available.pdf&ved=2ahUKEwiY8ei5gu2GAxXkZ0EAHUC5D_kQFnoECB0QAQ&usg=AOvVaw3uO8-LrFuwvJ2kHu2ixaCT [Available at: 21/06/24]

[48] JBA Consulting (2020) Newcastle-under-Lyme Borough Council and Stoke-on-Trent City Council Water Cycle Study: Phase 1.

[49] JBA Consulting (2020) Newcastle-under-Lyme Borough Council and Stoke-on-Trent City Council Water Cycle Study: Phase 1.

[50] JBA Consulting (2024) Newcastle-under-Lyme Borough Council Water Cycle Study. Available at: https://www.newcastle-staffs.gov.uk/planning-policy/local-plan-evidence-base [Accessed 04/07/24].

3.5.18 As noted in **paragraph 3.5.6**, the Plan area predominantly falls within hydrological catchments associated with the Severn Estuary and the Humber Estuary. The qualifying features of the Severn Estuary SAC include, among other features, a number of species of migratory fish including Twaite shad (*Alosa fallax*), River lamprey (*Lampetra fluviatilis*) and Sea lamprey (*Petromyzon marinus*). Criterion 4 of the Severn Estuary Ramsar designation notes that the site is important for the run of migratory fish between sea and river via estuary, including the SAC species (listed earlier) and additional species of salmon (*Salmo salar*), Sea trout (*S. trutta*) and Allis shad (*Alosa alosa*).

3.5.19 Consultation with the EA indicates that recent surveys have identified fish spawning sites along the whole length of the River Severn (where access is possible) and within the River Teme, with fish recorded from Maisemore Weir in Gloucester all the way up to Lincombe Wier near Stourport and in the River Teme from its mouth with the Severn to upstream of Knightwick and as far as Tenbury[51].

3.5.20 The 'Unlocking the Severn' project[52], which is run in partnership between the Canal and Rivers Trust, the Severn Rivers Trust, the EA and Natural England, aims to create fish passes at six barriers on the Severn and its River Teme tributary to allow Twaite Shad to migrate upstream. With the opening of the Diglis fish pass in March 2021 fish are now able to move upstream through Worcester to Stourport on Severn. A consultation response from Natural England indicates that currently, the tidal weir at Tewkesbury is believed to present an obstacle to most of the migratory fish species apart from the European eel, which has been recorded in the Warwickshire Avon. Natural England note that in the last few decades eel numbers have declined internationally by as much as 95% and have been listed by the International Union for Conservation of Nature (IUCN) on their Red List as critically endangered species[53]. Barriers to their journey upstream, habitat degradation and pollution are some of the contributing factors for the decline. Whilst there are still barriers to upstream movement, any development within the upper catchment (and Plan area) must ensure potential future use of these sites are not compromised.

3.5.21 Migratory fish species associated with the Humber Estuary SAC and the Humber Estuary Ramsar are Sea Lamprey and River Lamprey. River Lamprey have been recorded as far upstream as the River Dove (on the Staffordshire/Derbyshire border).

[51] Unlocking the Severn (2022) Endangered twaite shad fish return to habitat unlocked after 180 years. Available at: https://www.unlockingthesevern.co.uk/endangered-fish-return-to-habitat-unlocked-after-180-years/ [Accessed 10/06/24].

[52] Unlocking the Severn (2022) Unlocking the Severn's 7 successes of 2022. Available at: https://www.unlockingthesevern.co.uk/unlocking-the-severn-7-successes-of-2022/ [Accessed 10/06/24].

[53] IUCN Red List of Threatened Species (2018) European eel. Available at: https://www.iucnredlist.org/species/60344/152845178 [Accessed 11/06/24].

3.5.22 Any potential deterioration in water quality or habitat outside the Severn Estuary and Humber Estuary SAC and Ramsar designations as a result of the Local Plan may have implications for the migration of fish to upstream spawning habitat if it results in a barrier to movement. The impact of the Local Plan upon functionally linked watercourses and habitat through a deterioration in water quality, flows and loss and / or deterioration of riparian and in-stream habitat may therefore have adverse effects on the achievement of the conservation objectives which aim to maintain and restore the condition of these features for relevant qualifying species. Natural England consider that Good Ecological Status under the WFD is an appropriate standard for functionally linked watercourse[54].

3.5.23 Taking into consideration potential changes in water supply (through abstraction for water supply) and water quality (through surface water run-off and discharges from WwTWs), alongside impacts upon functionally linked watercourses, European sites were screened for potential hydrological pathways of impact. This review looked at European sites within the Plan area, those within 10km[55] of the Plan area and others further afield which are hydrologically linked to the Plan area. **Table 3.3** indicates which European sites will be scoped into the screening assessment for further consideration in the HRA process in terms of hydrology pathways of impact.

[54] Defra (2014) Water Framework Directive implementation in England and Wales: new and updated standards to protect the water environment (publishing.service.gov.uk). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/307788/river-basin-planning-standards.pdf [Accessed 10/06/24].

[55] 10km represents the area of influence considered in the Phase 1 WCS. [JBA Consulting (2020) Newcastle-under-Lyme Borough Council and Stoke-on-Trent City Council Water Cycle Study: Phase 1. Section 11.2].

Table 3.3: Review of hydrological impact pathways to European sites within the influence of the Local Plan

European sites with hydrological links to the Plan area	Sensitive to hydrological impacts (water quality and water quantity)?	Potential water quality LSEs	Potential water quantity LSEs	Will the European site be scoped in for further assessment in the HRA process?
Cannock Chase SAC	Yes	Cannock Chase SAC is the largest surviving area of European dry heath land in the Midlands[56]. The site is over 21km from the Plan area. It is located downstream and is hydrologically connected to the Plan area. NE's Supplementary Advice[57] notes that the SAC depends upon water supply, and poor water quality and quantity can adversely affect the structure and function of the habitat type. Therefore, water quality pathways of impact will be considered further in the HRA process.	Cannock Chase SAC is not located within the North Staffordshire WRZ. Therefore, it is unlikely that water abstraction associated with Local Plan growth will have impacts on water quantity.	Yes
Humber Estuary SAC, SPA and Ramsar	Yes	The Plan area is located within the Humber River Basin District. Watercourses draining the Plan area will ultimately drain to the Humber Estuary and it is therefore hydrologically connected to these downstream designations. In addition, these downstream designations support species of migratory fish which have the potential to move into the upper catchment for spawning and are sensitive to changes in water quality. Therefore, water quality pathways of impact will be considered further in the HRA process.	The Humber Estuary SAC, SPA and Ramsar is not located within the North Staffordshire WRZ. Therefore, it is unlikely that water abstraction associated with Local Plan growth will have impacts on water quantity.	Yes

[56] Cannock Chase National Landscape (2023) Welcome to Cannock Chase National Landscape. Available at: https://www.cannock-chase.co.uk [Accessed 28/05/24].

[57] Natural England (2020) European Site Conservation Objectives: Supplementary advice. Cannock Chase SAC. Available at: https://designatedsites.naturalengland.org.uk/TerrestrialAdvicePDFs/UK0030107.pdf [Accessed 20/06/24].

European sites with hydrological links to the Plan area	Sensitive to hydrological impacts (water quality and water quantity)?	Potential water quality LSEs	Potential water quantity LSEs	Will the European site be scoped in for further assessment in the HRA process?
Mersey Estuary SPA and Ramsar	No impacts identified on SIP or Ramsar Information Sheet	The Plan area is located within the North West River Basin District. Watercourses draining the Plan area will ultimately drain to the Mersey Estuary and it is therefore hydrologically connected to these downstream designations. Therefore, water quality pathways of impact will be considered further in the HRA process.	The Mersey Estuary SPA and Ramsar is not located within the North Staffordshire WRZ. Therefore, it is unlikely that water abstraction associated with Local Plan growth will have impacts on water quantity.	Yes
Midland Meres and Mosses Phase 1 Ramsar (Betley Mere SSSI)	Yes	The Betley SSSI component of the Midland Meres and Mosses Phase 1 Ramsar site is located within the Plan area and is shallow and eutrophic (nutrient rich) with a sparse submerged aquatic vegetation[58]. Wistaston Brook runs along its western boundary. Betley Sewage Treatment Works is located immediately adjacent. It has the potential to be affected by new development in the Plan area. Therefore, water quality pathways of impact will be considered further in the HRA process.	Betley Mere SSSI is located within the North Staffordshire WRZ. Therefore, there is potential for water quantity impacts as a result of the Local Plan and associated water abstraction for new development.	Yes

[58] Natural England. Betley SSSI Citation. Available at: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1002384&SiteName=Betley&countyCode=&responsiblePerson=&SeaArea=&IFCAArea= [Accessed 10/06/24].

European sites with hydrological links to the Plan area	Sensitive to hydrological impacts (water quality and water quantity)?	Potential water quality LSEs	Potential water quantity LSEs	Will the European site be scoped in for further assessment in the HRA process?
Midland Meres and Mosses Phase 1 Ramsar (Wybunbury Moss SSSI)	Yes	The Wybunbury Moss SSSI component of the Midland Meres and Mosses Phase 1 Ramsar site is located over 4km to the west of the Plan area and is a nationally important site as one of the finest examples in the country of a *schwingmoor*[59]. It is located approx. 400m from the closest watercourse. Therefore, water quality pathways of impact will be considered further in the HRA process.	Wybunbury Moss SSSI is not located within the North Staffordshire WRZ. Therefore, it is unlikely that water abstraction associated with Local Plan growth will have impacts on water quantity.	Yes
Midland Meres and Mosses Phase 2 Ramsar (Black Firs and Cranberry Bog SSSI)	Yes	The Black Firs and Cranberry Bog SSSI component of the Midland Meres and Mosses Phase 2 Ramsar site is located within the Plan area. Cranberry Bog is an outstanding example of a *schwingmoor* basin mire. Black Mere, the open water part of the site, is the surviving part of a former kettle hole lake and forms the largest dystrophic[60] open water mere in the county[61]. Whilst the closest watercourse is over 1km to the south west of the site, it has the potential to be affected by new development in the Plan area depending on location of development. Therefore, water quality pathways of impact will be considered further in the HRA process.	Black Firs and Cranberry Bog SSSI is located within the North Staffordshire WRZ. This component of the Ramsar is particularly sensitive to changes in water levels. Therefore, there is potential for water quantity impacts as a result of the Local Plan and associated water abstraction for new development.	Yes

[59] Natural England. Wybunbury Moss SSSI Citation. Available at: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1001468&SiteName=Wybunbury%20Moss&countyCode=&responsiblePerson=&SeaArea=&IFCAArea= [Accessed 11/06/24].

[60] Water bodies coloured brown by dissolved humic acids derived from acidic peat. Often very unproductive in biological terms though the nutrient content may be relatively high.

[61] Natural England. Black Firs and Cranberry Bog SSSI Citation. Available at: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1003841&SiteName=Black%20Firs%20&countyCode=&responsiblePerson=&SeaArea=&IFCAArea= [Accessed 11/06/24].

European sites with hydrological links to the Plan area	Sensitive to hydrological impacts (water quality and water quantity)?	Potential water quality LSEs	Potential water quantity LSEs	Will the European site be scoped in for further assessment in the HRA process?
Midland Meres and Mosses Phase 2 Ramsar (Cop Mere SSSI)	Yes	The Cop Mere SSSI component of the Midland Meres and Mosses Phase 2 Ramsar site is located approx. 5.7km to the south of the Plan area at the source of the River Sow. It is a shallow lake lying in a hollow in Keuper Marl. It differs from many of the meres in having a distinct inflow and outflow from the River Sow, which enters the mere at the western end and leaves at the eastern end[62]. The source of the River Sow is outside and downstream of the Plan area and is therefore not hydrologically connected to the Plan area. It is unlikely that there will be any water quality pathways of impact.	Cop Mere SSSI is located within the North Staffordshire WRZ. Therefore, there is potential for water quantity impacts as a result of the Local Plan and associated water abstraction for new development.	Yes
Midland Meres and Mosses Phase 2 Ramsar (Oakhanger Moss SSSI)	Yes	The Oakhanger Moss SSSI component of the Midland Meres and Mosses Phase 2 Ramsar site is located approx. 1.9km to the north of the Plan area. It is one of the shallowest of a cluster of depressions in glacial sands lying to the west of Alsager. It is of great importance for the range of mire vegetation communities it supports[63]. The closest watercourse flows approx. 700m to the south of the site and has its source within the Plan area. Therefore, water quality pathways of impact will be considered further in the HRA process.	Oakhanger Moss SSSI is not located within the North Staffordshire WRZ. Therefore, it is unlikely that water abstraction associated with Local Plan growth will have impacts on water quantity.	Yes

[62] Natural England. Cop Mere SSSI Citation. Available at: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1000057&SiteName=cop&countyCode=&responsiblePerson=&SeaArea=&IFCAArea= [Accessed 11/06/24].

[63] Natural England. Oakhanger Moss SSSI Citation. Available at: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1006639&SiteName=oakhanger&countyCode=&responsiblePerson=&SeaArea=&IFCAArea= [Accessed 11/06/24].

European sites with hydrological links to the Plan area	Sensitive to hydrological impacts (water quality and water quantity)?	Potential water quality LSEs	Potential water quantity LSEs	Will the European site be scoped in for further assessment in the HRA process?
Pasturefields Salt Marsh SAC	Yes	The Plan area discharges to watercourses which are tributaries of the River Trent. The River Trent runs adjacent to Pasturefields Salt Marsh SAC. The SAC is hydrologically sensitive and therefore potentially vulnerable to any changes to water quality. Therefore, water quality pathways of impact will be considered further in the HRA process.	Pasturefields Salt Marsh SAC is not located within the North Staffordshire WRZ. Therefore, it is unlikely that water abstraction associated with Local Plan growth will have impacts on water quantity.	Yes
Severn Estuary SAC, SPA and Ramsar	Yes	The Plan area is located within the Severn River Basin District. Watercourses draining the Plan area will ultimately drain to the Severn Estuary and it is therefore hydrologically connected to these downstream designations. In addition, these downstream designations support species of migratory fish which have the potential to move into the upper catchment for spawning and are sensitive to changes in water quality. Therefore, water quality pathways of impact will be considered further in the HRA process.	The Severn Estuary SAC, SPA and Ramsar is not located within the North Staffordshire WRZ. Therefore, it is unlikely that water abstraction associated with Local Plan growth will have impacts on water quantity.	Yes

European sites with hydrological links to the Plan area	Sensitive to hydrological impacts (water quality and water quantity)?	Potential water quality LSEs	Potential water quantity LSEs	Will the European site be scoped in for further assessment in the HRA process?
West Midland Mosses SAC (Wybunbury Moss SSSI) – also designated as a Ramsar (above)	Yes	The West Midland Mosses SAC is sensitive to changes in nutrients and in particular a change in nitrogen and phosphorus. Any change in nutrients has the potential to have impact on nutrient targets for the SAC. The area of influence is the whole catchment of Wybunbury Moss. The Plan area is not located within this area[64]. West Midland Mosses SAC is located over 4km to the west of the Plan area (see above information for corresponding Ramsar site). It is located approx. 400m from the closest watercourse. Therefore, water quality pathways of impact will be considered further in the HRA process.	West Midland Mosses SAC is not located within the North Staffordshire WRZ. Therefore, it is unlikely that water abstraction associated with Local Plan growth will have impacts on water quantity.	Yes
Peak District Dales SAC (Dove Valley and Biggin Dale SSSI)	Yes	The Dove Valley and Biggin Dale SSSI component of the Peak District Dales SAC is located approx. 25km to the east of the Plan area. The River Dove flows through the SSSI however the source of the River Dove is not hydrologically connected to the Plan area. The majority of the dales are dry with a few surface streams[65]. It is unlikely that there will be any water quality pathways of impact.	Dove Valley and Biggin Dale SSSI is located within the North Staffordshire WRZ. Therefore, there is potential for water quantity impacts as a result of the Local Plan and associated water abstraction for new development.	Yes

[64] Natural England (2022) TIN206. West Midland Mosses Special Area of Conservation Evidence Pack.

[65] Natural England. Designated Sites View: Citation. Dove Valley and Biggin Dale. Available at: https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1002787.pdf [Accessed 21/06/24].

European sites with hydrological links to the Plan area	Sensitive to hydrological impacts (water quality and water quantity)?	Potential water quality LSEs	Potential water quantity LSEs	Will the European site be scoped in for further assessment in the HRA process?
Peak District Dales SAC (Hamps and Manifold Valleys SSSI)	Yes	The Hamps and Manifold Valleys SSSI component of the Peak District Dales SAC is located approx. 20km to the east of the Plan area. The River Manifold flows through the SSSI however the source of the River Manifold is not hydrologically connected to the Plan area. The site is of great importance for its geomorphology, nationally rare plants and important invertebrate communities[66]. It is unlikely that there will be any water quality pathways of impact.	Hamps and Manifold Valleys SSSI is located within the North Staffordshire WRZ. Therefore, there is potential for water quantity impacts as a result of the Local Plan and associated water abstraction for new development.	Yes
Peak District Moors (South Pennine Moors Phase 1) SPA (Leek Moors SSSI)	Yes	The Leek Moors SSSI component of the Peak Dales District SAC is located approx. 14km to the north east of the Plan area. The River Manifold, River Churnet, River Goyt and the River Dane flow through the SSSI however they are upstream of and not hydrologically connected to the Plan area. The site is of great importance for its upland breeding birds[67]. It is unlikely that there will be any water quality pathways of impact.	Leek Moors SSSI is located within the North Staffordshire WRZ. Therefore, there is potential for water quantity impacts as a result of the Local Plan and associated water abstraction for new development.	Yes

[66] Natural England. Designated Sites View: Citation. Hamps and Manifold Valleys SSSI. Available at: https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1002911.pdf [Accessed 24/06/24].

[67] Natural England. Designated Site Viewer: SSSI Citation. Leek Moors SSSI. Available at: https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1003770.pdf [Accessed 24.06.24].

European sites with hydrological links to the Plan area	Sensitive to hydrological impacts (water quality and water quantity)?	Potential water quality LSEs	Potential water quantity LSEs	Will the European site be scoped in for further assessment in the HRA process?
South Pennine Moors SAC (Leek Moors SSSI) (also designated an SPA – see above)	Yes	The Leek Moors SSSI component of the Peak Dales District SAC is located approx. 14km to the north east of the Plan area. The River Manifold, River Churnet, River Goyt and the River Dane flow through the SSSI however they are upstream of and not hydrologically connected to the Plan area. It is unlikely that there will be any water quality pathways of impact.	Leek Moors SSSI is located within the North Staffordshire WRZ. Therefore, there is potential for water quantity impacts as a result of the Local Plan and associated water abstraction for new development.	Yes

3.6 Recreational pressure

3.6.1 Increased recreational pressure at European sites can result in damage to habitats through erosion and compaction, troubling of grazing stock, causing changes in behaviour to animals such as birds at nesting and feeding sites, spreading invasive species, dog fouling and tree climbing etc.

3.6.2 A common approach taken across the UK to address recreational impacts at European sites is to establish a Zone of Influence (ZoI) based on detailed visitor survey data. The ZoI is the area within which there are likely to be significant effects arising from recreational activities undertaken by additional residents due to growth. This is often calculated by taking the distance at which 75% of interviewees surveyed have travelled to reach a particular site (based on a review of visitor survey data).

3.6.3 The broad principle of buffer zones is one component of the HRA screening process for recreational pressures. This process also takes into consideration other factors such as recreational management at sites, proximity to settlements and existing recreational resources. Where available, buffer distances have been applied to determine potential pathways of recreational and urbanisation effects from the Local Plan.

3.6.4 The recreational draw of a European site depends on a number of factors. These include the extent and range of facilities provided (in particular parking), accessibility both within the European site and links to the wider area, incorporation of a European site as part of a wider designation, such as a National Park, and the site's promotion. A review of recreational impact assessments undertaken for other European sites across the UK indicates visitors typically live within 4.2 km (overall median value) of nature conservation sites and that the majority (75%) live within 12.6 km[68]. However, this review recognises that some visitors are prepared to travel longer distances to visit particular sites, for instance coastal and wetland sites.

3.6.5 As such, a precautionary distance of 15km has been applied to the scoping of European sites at which there may be potential recreational impact pathways. The output of this scoping exercise is summarised in **Table 3.4**.

Table 3.4: Review of recreational disturbance impact pathways to European sites within 15km of Newcastle-under-Lyme Plan area

European site within 15km of the Plan area	Sensitive to recreational impacts?	Public access pathways	Will the European site be scoped in for further assessment in the HRA process?
Brown Moss SAC	Yes	Brown Moss SAC is located over 13km to the west of the Plan area. It is also a Local Nature Reserve (LNR) and contains a number of self-guided walking trails. There is parking around the site, but no other facilities are provided. Given the distance of this site from the Plan area and lack of facilities, recreational LSEs are considered unlikely.	No
Midland Meres and Mosses Phase 1 Ramsar (Bagmere SSSI)	Not indicated on Ramsar Information Sheet	Bagmere SSSI is located approx. 8.7km to the north of the Plan area. It is managed by the Cheshire Wildlife Trust. There is no public access. Given the distance of this site from the Plan area and the lack of public access, recreational LSEs are considered unlikely.	No
Midland Meres and Mosses Phase 1 Ramsar (Betley Mere SSSI)	Not indicated on Ramsar Information Sheet	Betley Mere SSSI is located within the Plan area. There is one linear PRoW (Public Right of Way) which runs through the site. The surrounding land is estate parkland. No facilities are provided at the site. Given the location of this component of the Ramsar within the Plan area, it will be considered further in terms of recreational impacts.	Yes

[68] Weitowitz, D, C. Panter, C. Hoskin, R. and Liley, D. (October 2019) The effect of urban development on visitor numbers to nearby protected nature conservation sites. Journal of Urban Ecology, Volume 5, Issue 1.

European site within 15km of the Plan area	Sensitive to recreational impacts?	Public access pathways	Will the European site be scoped in for further assessment in the HRA process?
Midland Meres and Mosses Phase 1 Ramsar (Wybunbury Moss SSSI)	Not indicated on Ramsar Information Sheet	Wybunbury Moss SSSI is located over 4km to the west of the Plan area and is also a National Nature Reserve (NNR). There is no access to the central section of the site. A circular walk around the Moss is possible via public footpaths. Easy access gates exist on Natural England owned sections of footpath, but no other facilities are provided on site. A permissive path leads off the public footpath network and provides visitors with an opportunity to visit part of the peat bog. A regular programme of guided walks is advertised locally each year[69]. Parking is not provided but available in the village. Given the distance of this site from the Plan area and restricted access to the moss itself, it will not be considered further in terms of recreational impacts.	No
Midland Meres and Mosses Phase 2 Ramsar (Aqualate Mere SSSI)	Not indicated on Ramsar Information Sheet	Aqualate Mere SSSI is located approx. 11.3km to the south of the Plan area and is an NNR. The reserve is traversed by a series of footpaths and bridleways. The Mere and its wildlife can be observed from the public observation hide at the east end of the Mere. Apart from the PRoWs and the hide, access to the reserve is limited to permit holders only [70]. Parking is available at the site, but no other facilities are provided. Given the distance of this site from the Plan area and lack of facilities, recreational LSEs are considered unlikely.	No
Midland Meres and Mosses Phase 2 Ramsar (Cop Mere SSSI)	Not indicated on Ramsar Information Sheet	Cop Mere is located approx. 5.7km to the south east of the Plan area. Parking is limited. There is no public access within the designation itself, but a PRoW runs along the northern perimeter. Given the distance of this site from the Plan area and the lack of access, recreational LSEs are considered unlikely.	No
Midland Meres and Mosses Phase 2 Ramsar (Black Firs and Cranberry Bog SSSI)	Not indicated on Ramsar Information Sheet	Black Firs and Cranberry Bog SSSI is a Staffordshire Wildlife Trust reserve located within the Plan area. There is no access to Cranberry Bog section of the SSSI. The Black Firs area of the SSSI contains an unmarked footpath. Given the location of this component of the Ramsar within the Plan area it will be considered further in terms of recreational impacts.	Yes

[69] Natural England (2015) Wybunbury Moss National Nature Reserve. Available at: https://publications.naturalengland.org.uk/publication/6172892742025216 [Accessed 11/06/24].

[70] Natural England (2013) Aqualate Mere National Nature Reserve. Available at: https://publications.naturalengland.org.uk/publication/5083675?category=59026 [Accessed 11/06/24].

European site within 15km of the Plan area	Sensitive to recreational impacts?	Public access pathways	Will the European site be scoped in for further assessment in the HRA process?
Midland Meres and Mosses Phase 2 Ramsar (Oakhanger Moss SSSI)	Not indicated on Ramsar Information Sheet	Oakhanger Moss SSSI is located approx. 1.9km to the north of the Plan area. There is no parking on site. There are no PRoWs within the designation itself. However, there are PRoWs to the north and south running in a west to east direction. Given the distance from the Plan area, the limited access and facilities, recreational LSEs are considered unlikely.	No
Midland Meres and Mosses Phase 2 Ramsar (Oss Mere SSSI)	Not indicated on Ramsar Information Sheet	Oss Mere SSSI is located approx. 15km from the Plan area. There is no public access within the designation itself but there are two PRoW to the north west and south east of the Ramsar. Given the distance of this site from the Plan area and lack of access, recreational LSEs are considered unlikely.	No
Peak District Moors (South Pennine Moors Phase 1) SPA	Yes	A small proportion of the Peak District Moors (South Pennine Moors Phase 1) SPA is located within 15km of the Plan area. These designations are almost entirely located within the Peak District National Park administrative area. The Peak District National Park has 13.25 million visitors every year with an estimated 20 million people living within one hour's journey of the Peak District[71]. A visitor survey was undertaken in 2014 across the whole national park (not just the areas designated as the SAC and SPA). The results indicated that no visitors surveyed came from Newcastle-under-Lyme, with the majority coming from within the National Park Authority area itself and neighbouring authorities[72]. Given its distance from the Plan area and available visitor survey data, recreational LSEs are considered unlikely.	No

[71] Peak District National Park Authority. 2014. Peak District National Park Visitor Survey 2014. Available at: http://www.peakdistrict.gov.uk/learning-about/news/mediacentrefacts [Accessed 11.06.24].

[72] Peak District National Park Authority. 2014. Peak District National Park Visitor & Non-visitor Survey 2014. Available at: https://www.peakdistrict.gov.uk/__data/assets/pdf_file/0030/63876/Vistor-and-Non-Visitor-Survey.pdf [Accessed 11.06.24].

European site within 15km of the Plan area	Sensitive to recreational impacts?	Public access pathways	Will the European site be scoped in for further assessment in the HRA process?
South Pennine Moors SAC	Yes	A small proportion of the South Pennine Moors SAC is located within 15km of the Plan area. These designations are almost entirely located within the Peak District National Park administrative area. The Peak District National Park has 13.25 million visitors every year with an estimated 20 million people living within one hour's journey of the Peak District[73]. A visitor survey was undertaken in 2014 across the whole national park (not just the areas designated as the SAC and SPA). The results indicated that no visitors surveyed came from Newcastle-under-Lyme, with the majority coming from within the National Park Authority area itself and neighbouring authorities[74]. Given its distance from the Plan area and available visitor survey data, recreational LSEs are considered unlikely.	No
West Midland Mosses SAC (Wybunbury Moss SSSI) Ramsar Phase 1	No	West Midland Mosses SAC is located over 4km to the west of the Plan area and is designated as an NNR. There are no public rights of way within the nature reserve, but a permitted wildlife walk runs over boardwalks within the reserve. Other access is only permitted with permission from Natural England. Parking is limited to the village – no other facilities are provided. Given the distanced from the Plan area, the restricted levels of access and current management, recreational LSEs are considered unlikely.	No

3.6.6 There are two European sites which will be scoped in for further consideration in the HRA screening process in terms of the recreational pathways of impact. These are the Betley Mere SSSI component of Midland Meres and Mosses Phase 1 Ramsar and the Black Firs and Cranberry Bog SSSI component of Midland Meres and Mosses Phase 2 Ramsar.

[73] Peak District National Park Authority (2014) Peak District National Park Visitor Survey 2014. Available at: http://www.peakdistrict.gov.uk/learning-about/news/mediacentrefacts [Accessed 11/06/24].

[74] Peak District National Park Authority (2014) Peak District National Park Visitor & Non-visitor Survey 2014. Available at: https://www.peakdistrict.gov.uk/__data/assets/pdf_file/0030/63876/Vistor-and-Non-Visitor-Survey.pdf [Accessed 11/06/24].

3.7 Urbanisation effects

3.7.1 Disturbance results from urbanisation, typically when development is located close to a European site boundary. These may include impacts such as noise disturbance, lighting effects, cat predation, fly-tipping, wildfire, littering, vandalism and fragmentation of habitats. Strategic mitigation schemes elsewhere in the UK have set a presumption against development (i.e. no net increase in residential dwellings) on the basis of site-specific evidence to safeguard against these impacts of between 400m[75] and 500m[76]. These distances recognise the distance cat predation is likely to take place and also the increased frequency of visits made by people living in close proximity to a designated site.

3.7.2 Strategic mitigation schemes elsewhere in the UK have set a presumption against development (i.e. no net increase in residential dwellings) on the basis of site-specific evidence to safeguard against these impacts of between 400m[77] and 500m[78]. One example of this is the Thames Basin Heaths Special Protection Area Delivery Framework[79] which makes recommendations for accommodating development while also protecting the SPA's qualifying features. The Delivery Framework concludes that the adverse effects of any net increase in residential development located within 400m of the SPA boundary could not be mitigated since this was the range within which cats could be expected to roam as a matter of routine and there was no realistic way of restricting their movements. As such, no new housing is to be located within this zone.

3.7.3 Two European sites have been identified within the Plan area. These are, Midland Meres and Mosses Phase 1 Ramsar (Betley Mere SSSI component) and Midland Meres and Mosses Phase 2 Ramsar (Black Firs and Cranberry Bog SSSI component). No threats or pressures have been identified at either of these sites. However, given the location of these sites within the Plan area, these sites will be scoped in and the distance of allocations from these sites determined at the screening stage.

3.8 European sites and threats and pressures

3.8.1 **Figure 3.2** and **Figure 3.3** illustrate the location of European sites which will be scoped into the HRA process for further consideration in the screening assessment (**Section 4**). The impact pathways which have the potential to affect these European sites are summarised in **Table 3.5**. These will form the basis of the HRA screening assessment.

[75] Thames Basin Heaths Strategic Joint Partnership. Thames Basin Heaths SPA Delivery Framework.

[76] Panter, C., Liley, D., Lake, S., Saunders, P., and Caals, Z. (2022) Visitor survey, recreational impact assessment and mitigation requirements for the Chilterns Beechwoods SAC and the Dacorum Local Plan, Report by Footprint Ecology for Dacorum Borough Council.

[77] Thames Basin Heaths Strategic Joint Partnership (2009) Thames Basin Heaths SPA Delivery Framework. Available at: https://www.guildford.gov.uk/media/21979/Thames-Basin-Heaths-SPA-delivery-framework/pdf/thames-basin-heaths-spa-delivery-framework.pdf?m=636114482807070000 [Accessed 11/06/24].

[78] Panter, C., Liley, D., Lake, S., Saunders, P., and Caals, Z. (2022) Visitor survey, recreational impact assessment and mitigation requirements for the Chilterns Beechwoods SAC and the Dacorum Local Plan, Report by Footprint Ecology for Dacorum Borough Council

[79] Thames Basin Heaths Joint Strategic Partnership Board (2009) Thames Basin Heaths SPA Delivery Framework.

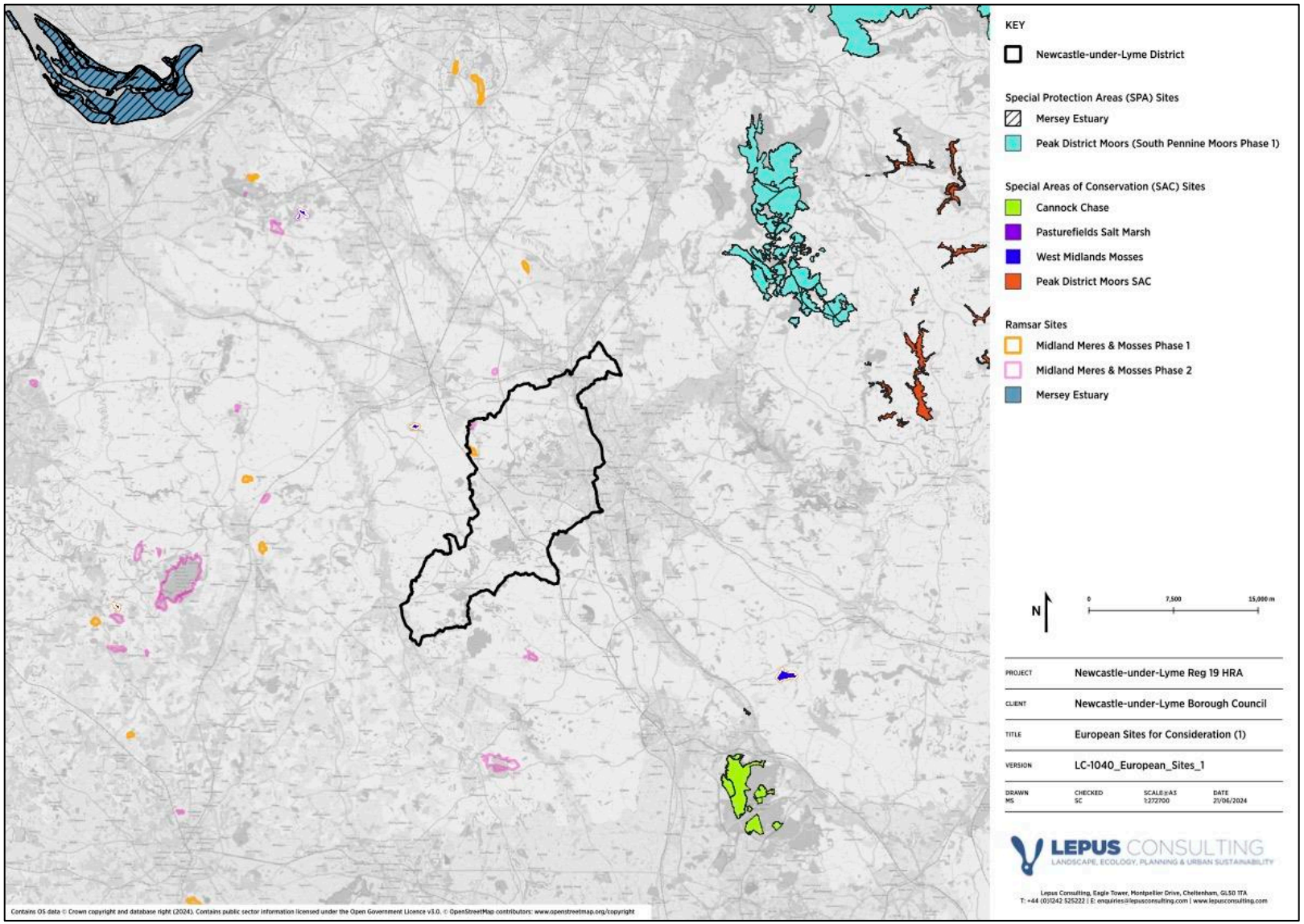

Figure 3.2: *European sites screened into the HRA process (1)*

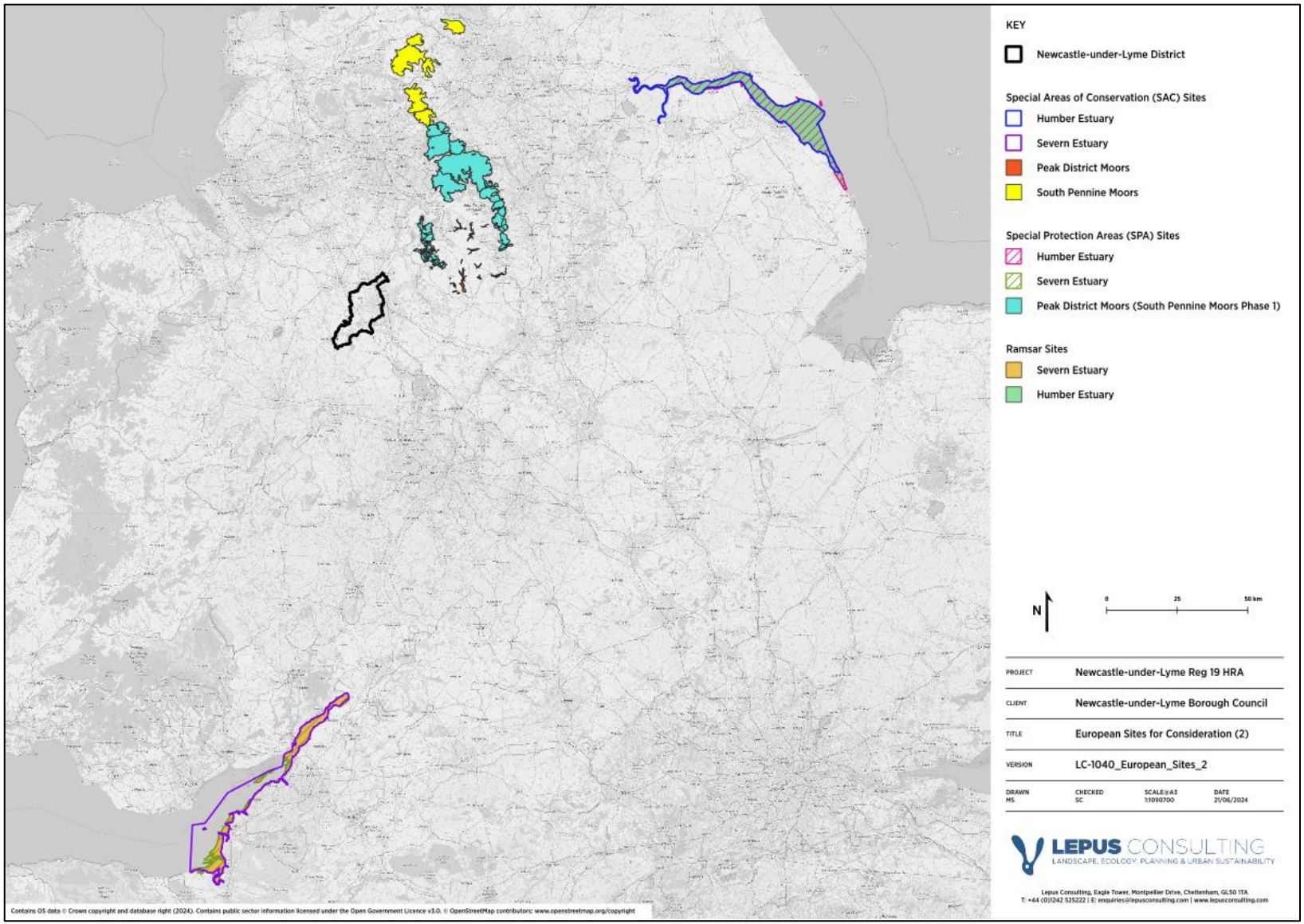

Figure 3.3: *European sites screened into the HRA process (2)*

Table 3.5: Summary of impact pathways to European sites which may be associated with the Plan

Potential impact pathways?	Air quality	Water quality and quantity changes	Recreational pressure	Urbanisation effects
Midland Meres & Mosses Phase 1 Ramsar	No	Yes	Yes	Yes
Midland Meres & Mosses Phase 2 Ramsar	Yes	Yes	Yes	Yes
West Midland Mosses SAC	No	Yes	No	No
Pasturefields Salt Marsh SAC	No	Yes	No	No
Cannock Chase SAC	No	Yes	No	No
Severn Estuary SAC, SPA and Ramsar	No	Yes	No	No
Humber Estuary SAC, SPA and Ramsar	No	Yes	No	No
Mersey Estuary SPA and Ramsar	No	Yes	No	No
Peak District Dales SAC	No	Yes	No	No
Peak District Moors (South Pennine Moors Phase 1) SPA	No	Yes	No	No
South Pennine Moors SAC	No	Yes	No	No

4 Screening of Publication Draft Plan

4.1 Policy and allocations screening

4.1.1 Each policy and allocation which forms the Publication Draft Local Plan has been appraised against the HRA screening criteria (see **Table 2.1**), taking into consideration case law and best practice. **Appendices C** and **D** provide the output of this screening exercise. This detailed assessment has informed the test of likely significance i.e. will the Local Plan have an LSE, alone or in-combination, at a European site.

4.1.2 It is concluded that LSEs, either from the Local Plan alone or in-combination with other plans or projects, could be screened out for most policies. This is because the policies fall into the following categories:

- Category A: General statements of policy / general aspirations;
- Category D: Environmental protection / site safeguarding; and
- Category F: Policies or proposals that cannot lead to development or other change.

4.1.3 A number of policies were however considered likely to have an LSE on the basis of this assessment as they fall into the following categories:

- Category I: Policies or proposals with a likely significant effect on a site alone;
- Category L: Policies or proposals which might be likely to have a significant effect in combination; and
- Category M: Bespoke area, site or case-specific policies or proposals intended to avoid or reduce harmful effects on a European site.

4.1.4 The following policies (**Table 4.1**) will therefore be explored in the AA (Stage 2 of the HRA process) in more detail.

Table 4.1: Policies of the Local Plan screened into the HRA process (summarised from **Appendix C**)

Policy number	Policy name
PSD 1	Overall Development Strategy
PSD 3	Distribution of Development
HOU 4	Gypsy, Travellers and Travelling Showpeople
EMP 1	Employment
RET 4	Newcastle-under-Lyme Town Centre
SE 8	Biodiversity and Geodiversity

4.1.5 All allocations were considered to have a potential alone (Category I) or in-combination (Category L) LSE upon European sites and areas of functionally linked land, due potential air quality, water quality and quantity and recreational pressures (**Appendix D**). All allocations were therefore screened into the HRA process.

4.1.6 The screening assessment indicated that there are no allocations within 400m of a European site and therefore urbanisation effects have been screened out.

4.1.7 LSEs were identified at the following European sites:

- Cannock Chase SAC - water quality
- Humber Estuary SAC, SPA and Ramsar - water quality
- Mersey Estuary SPA and Ramsar - water quality
- Midland Meres and Mosses Phase 1 Ramsar - water quality and quantity and recreational pressure
- Midland Meres and Mosses Phase 2 Ramsar - air quality, water quality and quantity and recreational pressure
- Pasturefields Salt Marsh SAC - water quality
- Peak District Dales SAC – water quantity
- Peak District Moors (South Pennine Moors Phase 1) SPA – water quantity
- Severn Estuary SAC, SPA and Ramsar - water quality
- South Pennine Moors SAC – water quantity
- West Midland Mosses SAC - water quality

4.2 Screening conclusion

4.2.1 As required under Regulation 105 of the Habitats Regulations, an assessment has been undertaken of LSEs of the Local Plan upon European sites. The screening checks (**Appendix C** and **D**) indicate that the Local Plan has the potential to have LSEs on a number of European sites, both alone, and for a number of policies and allocations, in-combination. The Local Plan is not directly connected with or necessary to the management of any European site. The screening assessment takes no account of mitigation measures that the Local Plan may incorporate to mitigate adverse impacts upon European sites. It is therefore concluded that the Local Plan will be screened into the HRA process. The next stage of the HRA process will be Stage 2 - AA.

5 Air Quality Appropriate Assessment

5.1 Introduction

5.1.1 The following section of the AA focuses on assessing more precisely the ecological impacts of air pollution on the qualifying features of the Midland Meres and Mosses Phase 2 Ramsar. As set out in **Chapter 3**, the application of Natural England's screening threshold of 1,000 AADT indicates that two components of the Ramsar are likely to be affected by changes in air quality associated with development set out in the Local Plan. These components include:

- Oakhanger Moss SSSI component – alone LSE
- Black Firs and Cranberry Bog SSSI component – in-combination LSE

5.1.2 Policies with potential to have air quality impacts and which were screened into the HRA process include:

- Policy PSD 1: Overall Development Strategy
- Policy PSD 3: Distribution of Development
- Policy HOU 4: Gypsy, Travellers and Travelling Showpeople
- Policy EMP 1: Employment
- Policy RET 4: Newcastle-under-Lyme Town Centre

5.1.3 All site allocations set out in the Local Plan have the potential to act cumulatively to increase traffic flows on the local and wider road network. An increase in traffic related emissions has the potential to change air quality at the above sites both alone and in-combination when considered with growth in neighbouring LPAs.

5.1.4 This assessment follows Natural England's current guidance and therefore assesses the likely effects to inform a conclusion as to whether an adverse effect on site integrity can be ruled out. The assessment also draws on the Chartered Institute of Ecology and Environmental Management (CIEEM's) guidance and includes consideration of factors such as:

- Action needed to protect the condition of the Ramsar sites;
- The expected future trend in pollutants of concern (and the scientific reasonableness of any trend);
- The magnitude of any future 'in combination' dose and how it may change the trend; and
- The physical extent of the affected area as a proportion of that interest feature within the Ramsar sites[80].

[80] CIEEM (January 2021) Paragraph 20. Advisory Note: Ecological Assessment of Air Quality Impacts.

5.2 Baseline Information

5.2.1 The main mechanisms through which air pollution can have an adverse effect are through eutrophication (nitrogen), acidification (nitrogen and sulphur) and direct toxicity (ozone, ammonia and nitrogen oxides)[81]. Deposition of air pollutants can alter the soil and plant composition and species which depend upon these.

5.2.2 Excess atmospheric nitrogen deposition within an ecosystem or habitat can disrupt the delicate balance of ecological processes interacting with one another. As the availability of nitrogen increases in the local environment, some plants that are characteristic of that ecosystem may become competitively excluded in favour of more nitrophilic plants. It also impacts the ammonium and nitrate balance of the ecosystem, which disrupts the growth, structure and resilience of some plant species.

5.2.3 Excess nitrogen deposition often leads to the acidification of soils and a reduction in the soils' buffering capacity (the ability of soil to resist pH changes). It can also render the ecosystem more susceptible to adverse effects of secondary stresses, such as frost or drought, and disturbance events, such as foraging by herbivores.

5.2.4 The Midland Meres & Mosses Ramsar Phase 2 comprise of a series of lowland open water and peatland sites formed in depressions, mostly formed by receding ice sheets[82] (see **Appendix B**). These Ramsar sites form a nationally important series of habitats and are either fed by groundwater or rainwater, depending on their stage of physical transition between bog and fen. A bog is an enclosed depression fed by rainwater, which is slightly acidic and low in nutrients[83]. In comparison, fens are fed by a steady source of groundwater, which is mineral-rich and alkaline. A mire is the transition habitat type between an acidic bog and an alkaline fen and are often unstable underfoot and therefore are described as 'quaking'. More recently, a small number of the Ramsar sites have been formed, at least in part, by subsidence resulting from the removal in solution of underlying salt deposits. These waterbodies are known as 'meres' or 'pools'. The development of these habitats involves peat accumulation in which the nutrient status of the peat surface changes, typically becoming nutrient poor (oligotrophic) and acidic, enabling bog mosses (*Sphagnum spp.*) to colonise. These resulting peat bogs are the 'mosses'. The colonisation of the water surface by floating vegetation, in a few cases, has resulted in the formation of a quaking bog known as a '*schwingmoor*'.

[81] APIS (2016) Ecosystem Services and air pollution impacts.

[82] Ramsar Sites Information Service (1999) Midland Meres & Mosses. Available at: https://rsis.ramsar.org/ris/653 [Accessed 12/06/24]

[83] Department of Natural Resources. Bogs and Fens. Available at: https://www2.dnr.state.mi.us/publications/pdfs/huntingwildlifehabitat/Landowners_Guide/Resource_Dir/Acrobat/BogsFens.PDF [Accessed 12/06/24]

5.2.5 The Midland Meres and Mosses Phase 2 Ramsar site extends over 1,588ha, consisting of 18 sites which comprise nutrient-rich open water bodies (meres) with fringing habitats of reed swamp, fen, carr and damp pasture, and peatlands[84][85]. These sites are distributed throughout the north-west Midlands and north-east Wales. The Ramsar is notified under two criteria as set out below:

- Ramsar criterion 1: The site comprises a diverse range of habitats from open water to raised bog.
- Ramsar criterion 2. Supports a number of rare species of plants associated with wetlands, including the nationally scarce Cowbane (*Cicuta virosa*) and Elongated Sedge (*Carex elongate*). Also present are the nationally scarce bryophytes *Dicranum affine* and *Sphagnum pulchrum*. Also supports an assemblage of invertebrates including several rare species.

5.2.6 Oakhanger Moss SSSI has developed on a particularly shallow glacial depression and supports four mire vegetation communities which demonstrate the succession stages from open water to raised bog. The SSSI citation indicates that the site has a wooded appearance due to the presence of a well-developed shrub cover, with an area dominated by the bog moss *Sphagnum recurvum* in the centre of the site[86]. Natural England's advice regarding the management of the SSSI notes that *"unless the basin mire is important for its eutrophic fen, it is essential to exclude undue concentrations of nitrogen and phosphorus, any increase in which would result in the development of eutrophic fen in favour of the poor or rich fen vegetation, which would be lost"*[87]. The SSSI covers 13.56ha and comprises a number of features including basin fen (lowland), blanket bog and valley bog (upland), lowland mire grassland and rush pasture and wet woodland. It is the range of mire communities that are the primary interest feature in terms of the Ramsar designation.

5.2.7 Oakhanger Moss SSSI is comprised of one SSSI unit which is considered to be in an 'unfavourable – declining' condition due to the drying of the site and its conversion back to wet woodland. The SSSI data indicates that this SSSI is vulnerable to drainage and scrub encroachment pressures.

[84] It is noted that not all features are present on all 18 sites.

[85] Ramsar Sites Information Service. Available at: https://rsis.ramsar.org/ris/891 [Accessed: 19/06/24].

[86] Natural England (1994) SSSI Citation. Oakhanger Moss SSSI. Available at: https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1006639.pdf [Accessed: 12/06/24].

[87] Natural England (2004) Views About Management. Oakhanger Moss SSSI. Available at: https://designatedsites.naturalengland.org.uk/PDFsForWeb/VAM/1006639.pdf [Accessed: 12/06/24].

5.2.8 Black Firs and Cranberry Bog SSSI comprises two key areas. Black Firs is a modified valley Alderwood on a peat-filled depression and Cranberry Bog is a *schwingmoor* basin mire. Black Mere is the open water section of the SSSI within the Cranberry Bog area and forms the largest dystrophic[88] open water body in the county. The SSSI Citation for this site indicates that the mere and the mire "*represent lowland habitats which are nationally threatened and declining due largely to drainage and ground-water enrichment*"[89]. Similar to Oakhanger Moss SSSI, any increase in nitrogen deposition has the potential to exacerbate pollution levels and thereby undermine the reasons for notification of this site as a Ramsar.

5.2.9 Black Firs and Cranberry Bog SSSI is 11ha and comprised of four SSSI units which are considered to be in an 'unfavourable – no change' condition. A review of Natural England's SSSI condition data indicates that water quality is poor as a result of drainage which has caused eutrophication. The source of this is likely to be agricultural and domestic sources in the surrounding surface water catchment. SSSI data for this site indicates that it is vulnerable to pressures associated with water pollution and water levels. The key designated features of this SSSI include the lowland basin fen (open area of Cranberry Bog including *Schwingmoor*), dystrophic lake (Black Mere) and wet woodland (present at both the Cranberry Bog and Black Firs areas of the SSSI)[90].

5.2.10 It is noted in **paragraph 5.2.4** that these Ramsar sites are either fed by groundwater or rainwater, depending on their stage of physical transition between bog and fen.

5.2.11 Mires and bogs are nutrient-poor habitats, described as 'ombrotrophic' (rain fed) which are influenced and therefore particularly sensitive to changes in atmospheric inputs of nutrients[91]. Typical bog species include the important peat-forming species, such as Bog-mosses (*Sphagnum* spp.) and Cottongrasses (*Eriophorum* spp.), or Purple Moor-Grass (*Molinia caerulea*) in certain circumstances, together with Heather (*Calluna vulgaris*) and other ericaceous species. The SSSI Citations indicate that these species are found at both SSSI components of the Ramsar. Increased nitrogen deposition can lead to the growth of more nitrogen loving species and a subsequent change in species composition. Acid deposition has the potential to affect the functioning of a peat ecosystem and therefore also result in a change in species composition[92].

[88] A lake having acidic water that is low in oxygen and high in levels of dissolved humus and organic acids.

[89] Natural England (1986) SSSI Citation. Black Firs and Cranberry Bog Moss SSSI. Available at: https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1003841.pdf [Accessed: 12/06/24].

[90] Staffordshire Wildlife Trust. Black Firs and Cranberry Bog Reserve Management Plan 2019 – 2029.

[91] APIS. Information on Bog Habitat. Available at: https://www.apis.ac.uk/overview/ecosystems/overview_bogs.htm#:~:text=These%20ecosystems%20%2D%20often%20described%20as,as%20bog%2Dmosses%20Sphagnum%20spp. [Accessed: 20/06/24].

[92] APIS. Information on Bog Habitat. Available at: https://www.apis.ac.uk/overview/ecosystems/overview_bogs.htm#:~:text=These%20ecosystems%20%2D%20often%20described%20as,as%20bog%2Dmosses%20Sphagnum%20spp. [Accessed: 20/06/24].

5.2.12 Fens and marshes are characterised by a variety of vegetation types that represent their underlying geology and soil type. These systems are seasonally or periodically waterlogged by mineral-rich (minerotrophic) groundwater. These systems are therefore likely to be more vulnerable to a variety of sources of pollution, in particular water pollution (see **Chapter 6**).

5.2.13 In an attempt to manage the negative consequences of atmospheric nitrogen deposition and acidification, 'critical loads' and 'critical levels' have been established for ecosystems across Europe. Each European site is host to a variety of habitats and species, the features of which are often designated by a critical load for nitrogen deposition. The critical loads of pollutants are defined as a "…quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge"[93]. Critical levels are defined as "concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge"[94].

5.2.14 Tables 5.1 and 5.2 show that current average nitrogen deposition levels exceed the critical load range for the woodland and mire features of Oakhanger Moss SSSIs. The current average nitrogen deposition level for the swamp feature does not exceed critical loads. Acidity critical loads are exceeded for all features of Oakhanger Moss SSSI. Any increase in nitrogen deposition or acidity could exacerbate pollution levels and thereby undermine the reasons for notification of this site as a Ramsar.

Table 5.1: Nitrogen Critical Loads at Oakhanger Moss SSSI

Features	Is the feature sensitive to N?	Relevant Nitrogen Critical Load Class	Empirical Critical Load (kg N/ha/yr)	Ammonia Critical Level (ug m^{-3})	NOx Critical Level (ug m^{-3})	Current Nitrogen Deposition (Kg N/ha/yr)[95, 96]
Alnus glutinosa - Carex paniculata Woodland	Not stated	Broadleaved deciduous woodland	10-15	1 or 3	30	Max: 12.008 Min: 11.858 Average: 11.933
Betula pubescens - Molinia caerulea Woodland	Not stated	Broadleaved deciduous woodland	10-15	1 or 3	30	Max: 12.008 Min: 11.858 Average: 11.933
Carex Acutiformis Swamp	No Designated feature/feature habitat not sensitive to eutrophication	Designated feature/feature habitat not sensitive to eutrophication	n/a	1 or 3	30	Max: 12.008 Min: 11.858 Average: 11.933

[93] Coordination Centre for Effects (CCE). Critical load and level definitions. Available at: https://www.umweltbundesamt.de/en/Coordination_Centre_for_Effects [Accessed: 12/06/24].

[94] Coordination Centre for Effects (CCE). Critical load and level definitions. Available at: https://www.umweltbundesamt.de/en/Coordination_Centre_for_Effects [Accessed: 12/06/24].

[95] A grid average was taken which represents an average of arable, grassland, urban, forest and moorland habitat.

[96] Green shading indicates that the average current level of nitrogen deposition does not exceed the critical level range. Amber indicates that the average current level of nitrogen deposition is within the critical level range. Red shading indicates that the average current level of nitrogen deposition exceeds the critical level range.

Features	Is the feature sensitive to N?	Relevant Nitrogen Critical Load Class	Empirical Critical Load (kg N/ha/yr)	Ammonia Critical Level (ug m^{-3})	NOx Critical Level (ug m^{-3})	Current Nitrogen Deposition (Kg N/ha/yr)[95, 96]
Carex Paniculata Swamp	For high latitude systems: use lower end of the range.	Rich fens	15-25	1 or 3	30	Max: 12.008 Min: 11.858 Average: 11.933
Erica Tetralix - Sphagnum Papillosum Raised and Blanket Mire	Site specific advice should be sought. Use the high end of the range with high precipitation and the low end of the range with low precipitation; Use the low end of the range for systems with a low water table, and the high end of the range for systems with a high water table. Note that water table can be modified by management.	Raised bog and blanket bog	5-10	1 or 3	30	Max: 12.008 Min: 11.858 Average: 11.933
Molinia Caerulea - Potentilla Erecta Mire	Not stated	Moist or wet mesotrophic to eutrophic hay meadow	15-25	1 or 3	30	Max: 12.008 Min: 11.858 Average: 11.933
Salix Cinerea - Galium Palustre Woodland	Not stated	Broadleaved deciduous woodland	10-15	1 or 3	30	Max: 12.008 Min: 11.858 Average: 11.933
Sphagnum Cuspidatum/recurvum (Fallax) Bog Pool Community	Site specific advice should be sought. Use the high end of the range with high precipitation and the low end of the range with low precipitation; Use the low end of the range for systems with a low water	Raised and blanket bog	5-10	1	30	Max: 12.008 Min: 11.858 Average: 11.933

Features	Is the feature sensitive to N?	Relevant Nitrogen Critical Load Class	Empirical Critical Load (kg N/ha/yr)	Ammonia Critical Level (ug m^{-3})	NOx Critical Level (ug m^{-3})	Current Nitrogen Deposition (Kg N/ha/yr)[95, 96]
	table, and the high end of the range for systems with a high water table. Note that water table can be modified by management.					

Table 5.2: Acidity Critical Loads at Oakhanger Moss SSSI

Features	Is the feature sensitive to acidity	Relevant Acidity Critical Load Class	Acidity Critical Load (keq)	Acid Deposition Nitrogen | Sulphur keq/ha/yr[97,98]
Alnus glutinosa - Carex paniculata Woodland	Yes	Unmanaged Broadleafed/Coniferous Woodland	MinCLminN: 0.285| MaxCLminN: 0.357 MinCLMaxS: 0.311| MaxCLMaxS: 1.589 MinCLMaxN: 0.596 MaxCLMaxN: 1.946	Maximum: 1.004 Minimum: 0.982 Average: 0.993
Betula pubescens - Molinia caerulea Woodland	Yes	Unmanaged Broadleafed/Coniferous Woodland	MinCLminN: 0.285| MaxCLminN: 0.357 MinCLMaxS: 0.311| MaxCLMaxS: 1.589 MinCLMaxN: 0.596 MaxCLMaxN: 1.946	Maximum: 1.004 Minimum: 0.982 Average: 0.993
Erica Tetralix - Sphagnum Papillosum Raised And Blanket Mire	Yes	Bogs	MinCLminN: 0.321| MaxCLminN: 0.321	Maximum: 1.004 Minimum: 0.982 Average: 0.993

[97] A grid average was taken which represents an average of arable, grassland, urban, forest and moorland habitat.

[98] Green shading indicates that the average current level of acid deposition does not exceed the critical level range. Amber indicates that the average current level of acid deposition is within the critical level range. Red shading indicates that the average current level of nitrogen acid exceeds the critical level range.

Features	Is the feature sensitive to acidity	Relevant Acidity Critical Load Class	Acidity Critical Load (keq)	Acid Deposition Nitrogen | Sulphur keq/ha/yr[97,98]
			MinCLMaxS: 0.251| MaxCLMaxS: 0.252 MinCLMaxN: 0.572 MaxCLMaxN: 0.573	
Salix Cinerea - Galium Palustre Woodland	Yes	Unmanaged Broadleafed/Coniferous Woodland	MinCLminN: 0.285| MaxCLminN: 0.357 MinCLMaxS: 0.311| MaxCLMaxS: 1.589 MinCLMaxN: 0.596 MaxCLMaxN: 1.946	Maximum: 1.004 Minimum: 0.982 Average: 0.993
Sphagnum Cuspidatum/recurvum (Fallax) Bog Pool Community	Yes	Bogs	MinCLminN: 0.321| MaxCLminN: 0.321 MinCLMaxS: 0.251| MaxCLMaxS: 0.252 MinCLMaxN: 0.572 MaxCLMaxN: 0.573	Maximum: 1.004 Minimum: 0.982 Average: 0.993

5.2.15 Tables 5.3 and 5.4 show that current average nitrogen deposition levels exceed the critical load range for the *Alnus glutinosa - Carex paniculata* woodland feature at Black Firs and Cranberry Moss SSSI. The current average nitrogen deposition levels for the swamp feature are within the upper and lower critical load range for the *Alnus glutinosa - Urtica dioica* woodland and the bog pool community features. Acidity critical loads are exceeded for all features of Black Firs and Cranberry Moss SSSI.

Table 5.3: Nitrogen Critical Loads at Black Firs and Cranberry Moss SSSI

Features	Are bryophytes or liches integral for this habitat type?	Is the feature sensitive to N?	Relevant Nitrogen Critical Load Class	Empirical Critical Load (kgN/ha/yr)	Ammonia Critical Level (ug m^{-3})	NOx Critical Level (ug m^{-3})	Current Nitrogen Deposition (KgN/ha/yr)[99] [100]
Alnus glutinosa - Carex paniculata Woodland	Yes and No	Yes Site specific advice should be sought. Use the high end of the range with high precipitation and the low end of the range with low precipitation; Use the low end of the range for systems with a low water table, and the high end of the range for systems with a high water table. Note that water table can be modified by management.	Raised and blanket bogs	5-10	1	30	Max: 12.571 Min: 12.31 Average: 12.411
Alnus glutinosa - Urtica dioica Woodland	Yes	Yes	Permanent dystrophic lakes, ponds and pools	10-15	1 or 3	30	Max: 12.571 Min: 12.31 Average: 12.411
Sphagnum Cuspidatum / recurvum (Fallax) Bog Pool Community	Yes	No	Valley mires, poor fens and transition mires	10-15	1 or 3	30	Max: 12.571 Min: 12.31 Average: 12.411
Standing Water	No	Yes	None provide	None provide	1 or 3	30	n/a
Standing Water	n/a	Site specific	None provide	None provide	None provide	None provide	n/a

[99] A grid average was taken which represents an average of arable, grassland, urban, forest and moorland habitat.

[100] Total N deposition to Forest or Moorland depending on habitat type (kg/ha/yr).

Table 5.4: Acidity Critical Loads at Black Firs and Cranberry Moss SSSI

Features	Is the feature sensitive to acidity	Relevant Acidity Critical Load Class	Acidity Critical Load (keq)	Acid Deposition Nitrogen | Sulphur keq/ha/yr[101][102]
Alnus glutinosa - Carex paniculata Woodland	Yes	Unmanaged Broadleafed/Coniferous Woodland	MinCLminN: 0.142| MaxCLminN: 0.142 MinCLMaxS: 1.653 | MaxCLMaxS: 1.713 MinCLMaxN: 0.561 MaxCLMaxN: 1.795	Maximum: 0.992 Minimum: 0.978 Average: 0.985
Alnus glutinosa - Urtica dioica Woodland	Yes	Unmanaged Broadleafed/Coniferous Woodland	MinCLminN: 0.142| MaxCLminN: 0.142 MinCLMaxS: 1.653 | MaxCLMaxS: 1.713 MinCLMaxN: 0.561 MaxCLMaxN: 1.795	Maximum: 0.992 Minimum: 0.978 Average: 0.985
Sphagnum Cuspidatum/recurvum (Fallax) Bog Pool Community	Yes	Bogs	MinCLminN: 0.321| MaxCLminN: 0.142 MinCLMaxS: 1.653 | MaxCLMaxS: 0.242 MinCLMaxN: 0.563 MaxCLMaxN: 0.574	Maximum: 0.992 Minimum: 0.978 Average: 0.985
Standing Water	Site specific	No critical load has not assigned for this feature, please seek site specific advice	None	n/a
Standing Water	No	Freshwater	None	n/a

[101] Total acid deposition to Forest (kqN/ha/yr)

[102] A grid average was taken which represents an average of arable, grassland, urban, forest and moorland habitat.

5.3 Mitigation

5.3.1 Policies set out in the Local Plan (as listed below) incorporate measures for sustainable transport, encourage a modal shift, and promote active transport options. These measures will have a positive impact upon air quality by discouraging the use of the private car and encouraging use of electric vehicles, public transport, cycling and walking.

- Strategic Objectives. These objectives support active and sustainable travel across NUL.
- Policy CRE1: Climate Change. This policy aims to promote sites with the best opportunities for sustainable travel.
- Policy EMP1: Employment. This policy aims to select sites which can maximise high quality sustainable transport connections
- Policy RET4: Newcastle-under-Lyme Town Centre. This policy supports improvements to walking and cycling infrastructure and sustainable public transport options.
- Policy RET5: Kidsgrove Town Centre. This policy supports enhancement and refurbishment of the train station alongside access to the canal and green routes.
- Policy IN1: Infrastructure. This policy sets out NUL's commitment to work with infrastructure providers to deliver appropriate transport links alongside other services.
- Policy IN2: Transport and Accessibility. This policy requires new development to make appropriate provision for access by sustainable modes of transport, promoting access and public transport. It also sets out NUL's commitment to providing infrastructure for low and ultra-low emission vehicles. New development will also be required to prepare Transport Assessments and Travel Plans under this policy.
- Policy IN4: Cycleways, Bridleways and Public Rights of Way. This policy promotes opportunities for walking, cycling, riding and multi-user routes within new development.
- Policy SE1: Pollution and Air Pollution. This policy notes that development proposals which are likely to result in detrimental impacts on air quality, will not be permitted unless it can be demonstrated that mitigation measures effectively address these impacts. It also promotes sustainable and active travel options, low-emission technologies and enhancement of green infrastructure to absorb air pollution.
- Policy SA1: General Requirements. This policy sets out general requirements for site allocations made in the Local Plan. These requirements include the requirement for sustainable modes of access including reducing the need to travel by private car within new development which will be supported by Travel Plans. Requirements also relate to the protection of air quality and European sites

5.3.2 Staffordshire County Council's Local Transport Plan (LTP3)[103] aims to facilitate access to and promote sustainable forms of transport and active travel, including public transport, walking and cycling. It also seeks to deliver air quality improvements through initiatives such as the promotion of low emitting vehicles and vehicle efficiency. These aims are brought together for NUL in an Integrated Transport Strategy[104]. This promotes connectivity in Newcastle-under-Lyme through public transport options and cycling and walking routes. There are also number of national initiatives to reduce vehicle related emissions, such as the Government's commitment to phase out the sale of petrol and diesel vehicles, so that by 2035, all new vehicles will be zero emission[105].

5.3.3 Acting together, the Local Plan policies, county and national led initiatives will promote sustainable transport options with reductions in reliance on the private car with associated reductions in traffic emissions.

5.3.4 In addition, Policy SE8: Biodiversity and Geodiversity requires all development to ensure the conservation, enhancement and restoration of biodiversity and geodiversity, avoiding any adverse impacts on condition, and where relevant recovery, of all types of nature conservation sites, habitats, species and components of ecological networks or geological interests including internationally designated sites (which include Ramsar sites).

5.4 Appropriate Assessment

Midland Meres and Mosses Phase 2 Ramsar – Oakhanger Moss SSSI component

5.4.1 The DfT in their Transport Analysis Guidance (TAG) consider that, "*beyond 200m from the link centre, the contribution of vehicle emissions to local pollution levels is not significant*"[106]. This statement is supported by Highways England and Natural England based on evidence presented in a number of research papers[107,108]. This relationship is shown in Figure 5.1 below.

[103] Staffordshire County Council (2011) Staffordshire Local Transport Plan 2011. Available at: https://www.staffordshire.gov.uk/Transport/Transport-Planning/Local-transport-plan/Documents/staffordshirelocaltransportplan2011strategyplan.pdf Accessed 13/06/24]

[104] Staffordshire County Council (2015) Draft Newcastle-under-Lyme Borough Integrated Transport Strategy 2015 - 2026. Available at: https://www.staffordshire.gov.uk/Transport/Transport-Planning/Documents/Documents/draftnewcastleboroughtransportstrategy.pd Accessed 13/06/24]

[105] UK Government (2023) Government sets out path to zero emission vehicles by 2030. Available at: https://www.gov.uk/government/news/government-sets-out-path-to-zero-emission-vehicles-by-2035 [Accessed 17/06/24]

[106] Department for Transport (2015) TAG UNIT A3 Environmental Impact Appraisal. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/487684/TAG_unit_a3_envir_imp_app_dec_15.pdf' [Accessed: 28/01/24].

[107] Bignal, K., Ashmore, M & Power, S. (2004) The ecological effects of diffuse air pollution from road transport. English Nature Research Report No. 580, Peterborough.

[108] Ricardo-AEA. (2016) The ecological effects of air pollution from road transport: an updated review. Natural England Commissioned Report No. 199.

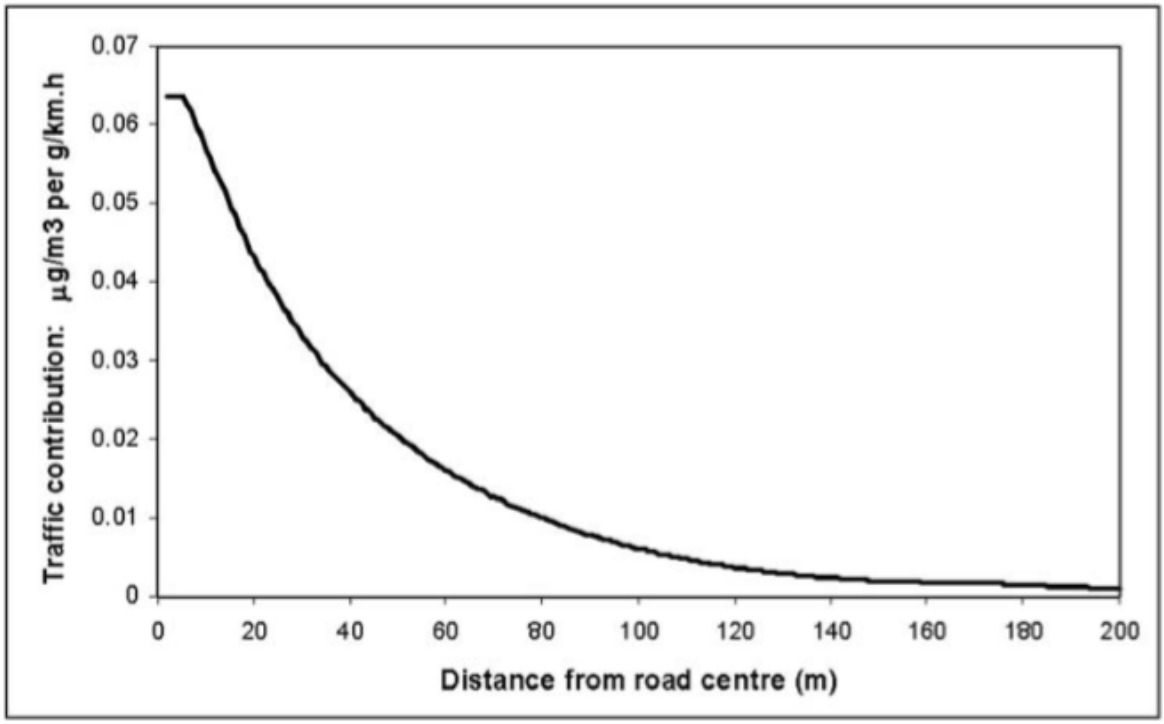

Figure 5.1: *Traffic contribution to pollution concentration at different distances from road centre*

5.4.2 The M6 is located approximately 123m to the east of the Oakhanger Moss SSSI at its closest point. A total of 1.6ha of the SSSI is located within 200m of the M6. A review of aerial photography indicates that the motorway verge, agricultural fields, a minor road and residential properties are situated between the Ramsar designation boundary and the M6 (see **Figure 5.2**). A review of mapping data indicates that the SSSI is located within the ownership of Oakhanger Farm. Topographic mapping indicates that the open water area is located to the west of the SSSI.

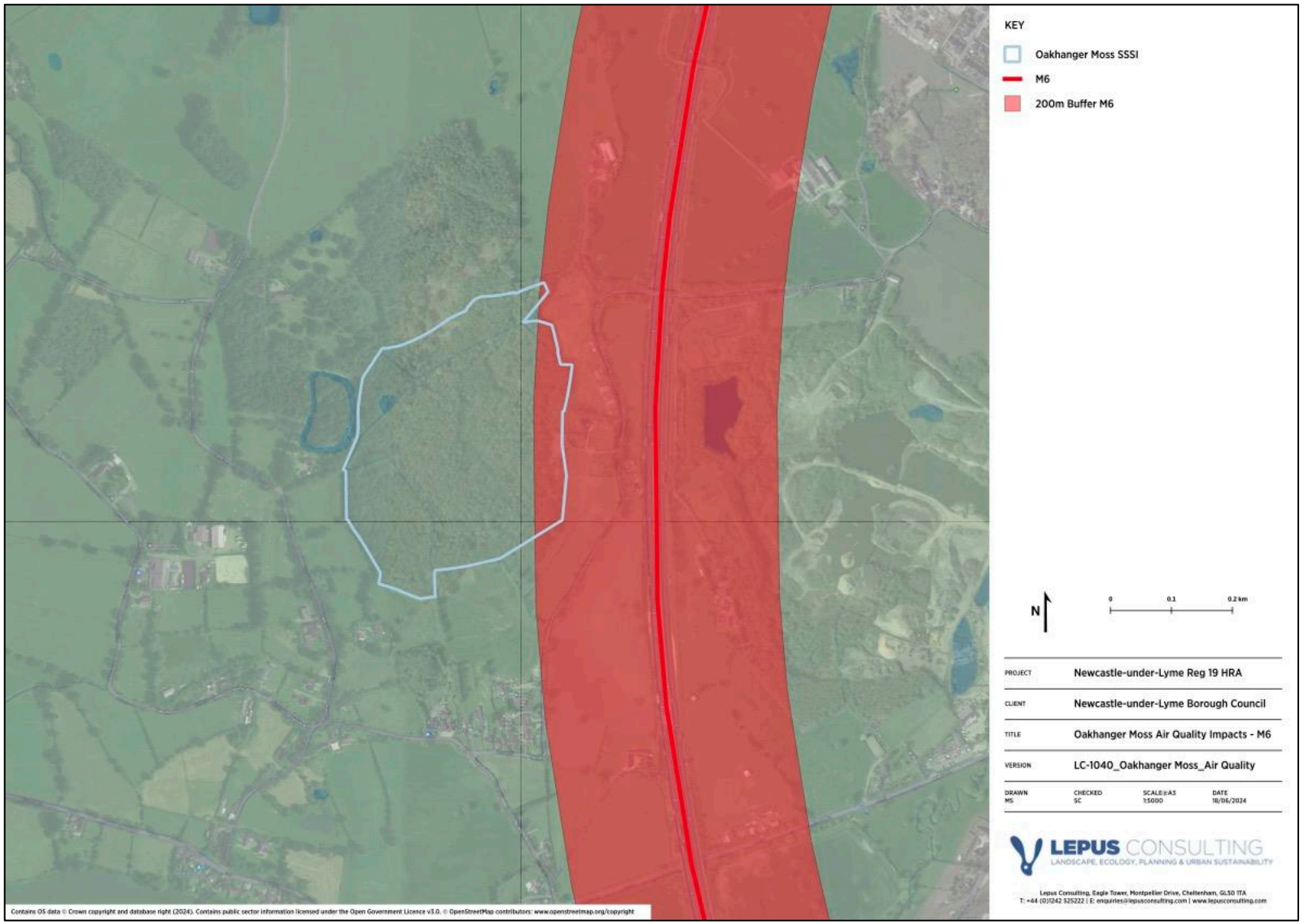

***Figure 5.2**: Location of Oakhanger Moss SSSI in relation to the M6*

5.4.3 The most recent SSSI Common Standards Monitoring (CSM) survey was undertaken in 2012[109]. This indicated that management measures intended to hold water on the SSSI site are not effective and that as a consequence, the open mire is very dry. Observations suggest that the two areas of mire on the site are separated by an area of fen which is reverting back to wet woodland. In addition, a high scrub cover was observed. It is likely that maintenance of water levels at the SSSI are key to the conservation of its condition. Water quantity impacts are assessed in further detail in **Chapter 6**.

5.4.4 A review of background air quality trends provided by APIS indicate that there was an overall decrease in nitrogen and acid deposition at Oakhanger Moss SSSI between 2003 and 2021. This may be attributed to national initiatives such as improvements in vehicle technologies (new standard Euro 6/VI vehicles).

5.4.5 APIS source attribution data for Oakhanger Moss SSSI Figure 5.3, indicates that the SSSI sits in an agricultural 'hotspot', with the majority of nitrogen deposition coming from livestock (56.1%) and fertilisers (6.01%). Road transport makes up a relatively small contribution to the critical load exceedance (6.81%). Trend data on APIS indicates that agricultural sources of nitrogen deposition have increased since 2012 but contributions from road transport have decreased over this period. It is clear from this data that steps to avoid critical load exceedance and restore the site to 'at or below' critical loads will require action to reduce emissions from existing agricultural sources as a priority. CIEEM's guidance notes that where *"road transport makes only a small contribution to the critical load exceedance, investment to encourage cleaner car technology may be sufficient to regard a new proposal which leads to a small increase in traffic on local roads as acceptable"*.

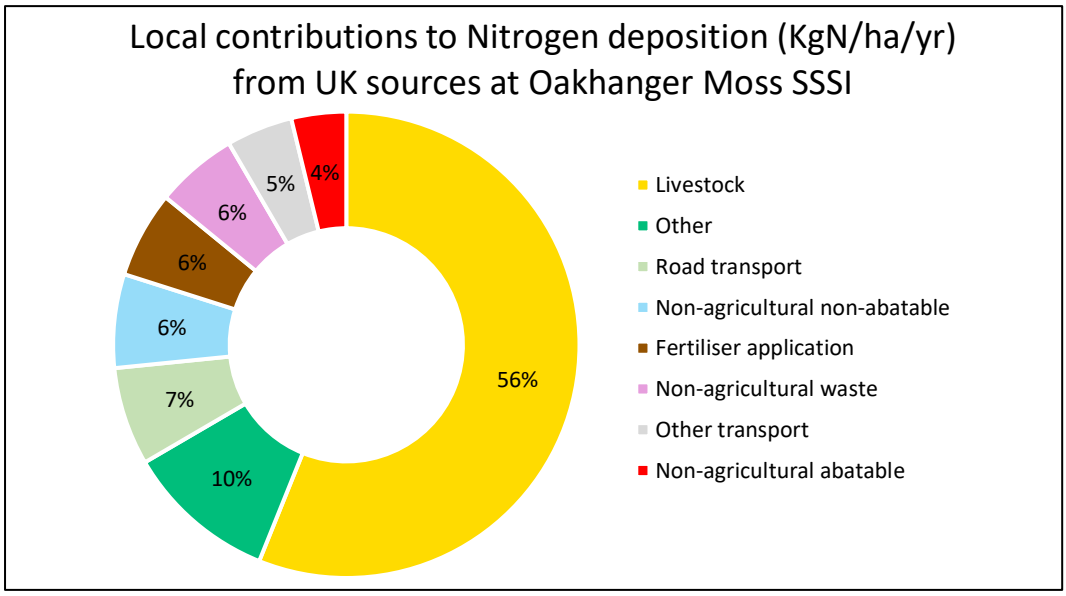

Figure 5.3: *Local contributions to Nitrogen deposition (KgN/ha/yr) from sources (UK) at Oakhanger Moss SSSI*[110]

[109] Natural England (2012) CMS for Oakhanger Moss SSSI. Available at: https://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1014853&SiteCode=S1006639&SiteName=oakhanger&countyCode=&responsiblePerson= [Accessed: 13/06/24].

[110] APIS. Available at: https://www.apis.ac.uk/app [Accessed 17/06/24]

Midland Meres and Mosses Phase 2 Ramsar – Black Firs to Cranberry Bog SSSI component

5.4.6 The A531 runs immediately adjacent to the western boundary of the Black Firs section of the Black Firs to Cranberry Bog SSSI (see **Figure 5.4**). The Cranberry Bog section of the SSSI is located approximately 186m to the north east of the A531 at its closest point. The SSSI is located within ownership and management of Staffordshire Wildlife Trust. A total of 5.86ha of the SSSI is located within 200m of the A531. Habitat within 200m of the A531 includes the Black Firs component of the SSSI (woodland and drainage ditch habitat) and the eastern edge of the Cranberry Bog area (areas of woodland habitat, but not including the open water area of Black Mere or the sphagnum lawn)[111]. Mature pines have been planted in the western edge of the woodland within Black Firs close to the A531 over the last 5 to 100 years[112]. This may provide a buffering effect between the road and sensitive site features.

[111] Staffordshire Wildlife Trust. Black Firs and Cranberry Bog Reserve Management Plan 2019 – 2029.

[112] Staffordshire Wildlife Trust. Black Firs and Cranberry Bog Reserve Management Plan 2019 – 2029.

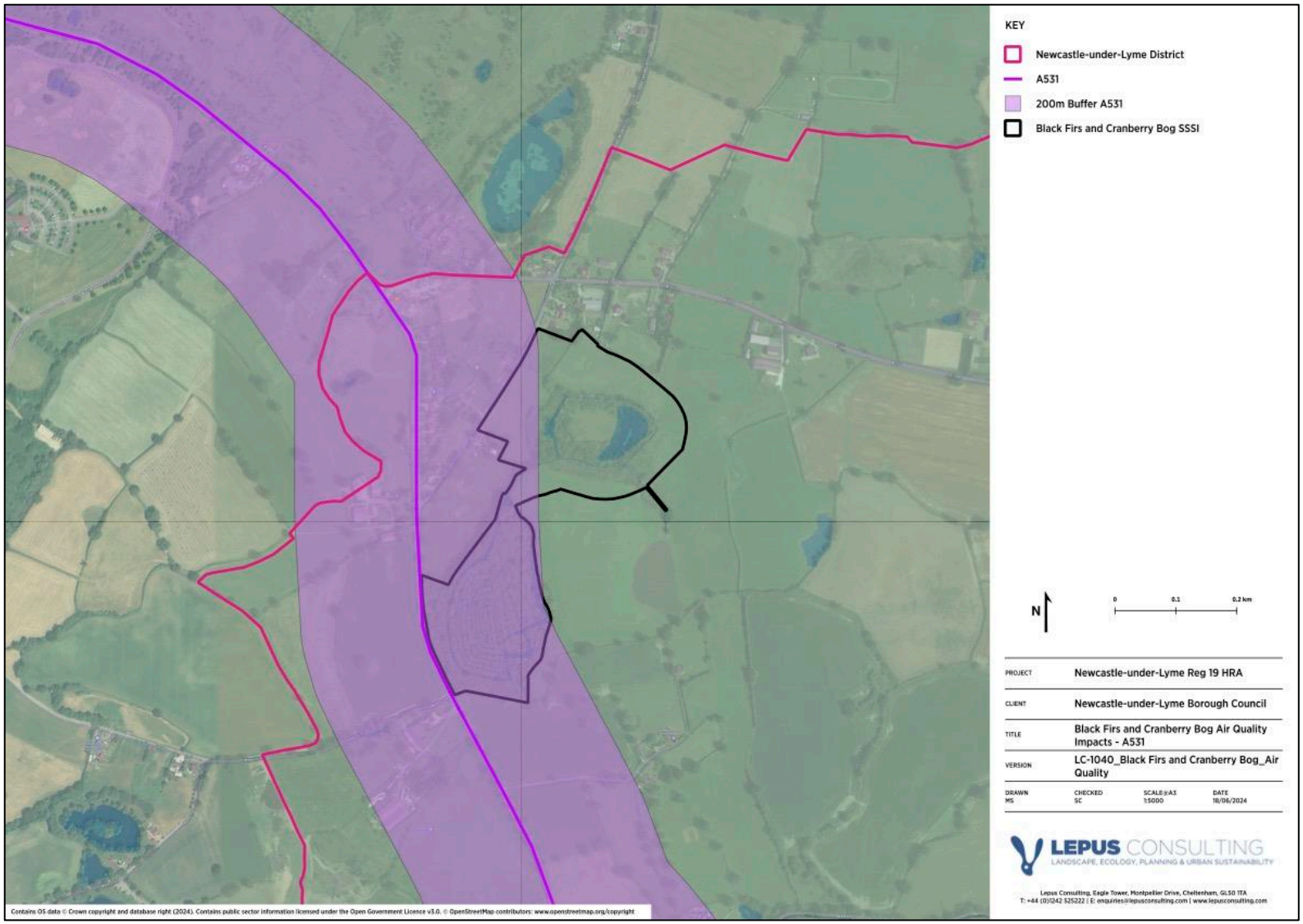

Figure 5.4: *Location of Black Firs and Cranberry Bog SSSI in relation to the A531*

5.4.7 The most recent SSSI CMS survey was undertaken in 2018[113]. This indicated that the reasons all four SSSI units are in an 'unfavourable – no change' condition is due to water pollution from the surrounding catchment. Water quality impacts are assessed in further detail in **Chapter 6**. Maintenance of good water quality at the SSSI will be key to conservation of its condition.

5.4.8 A review of background air quality trends provided by APIS indicate that there was an overall decrease in nitrogen and acid deposition at Black Firs to Cranberry Bog SSSI between 2003 and 2021. As noted in **paragraph 5.2.17**, this may be attributed to national initiatives.

5.4.9 APIS source attribution data for Black Firs and Cranberry Bog SSSI Figure 5.3 indicates that the SSSI sits in an agricultural 'hotspot', with the majority of nitrogen deposition coming from livestock (54.9%) and fertilisers (5.9%). Road transport makes up a relatively small contribution to the critical load exceedance (4.8%). Trend data on APIS indicates that agricultural sources of nitrogen deposition have increased since 2012 but contributions from road transport have decreased over this period. As with Oakhanger Moss SSSI, it is clear that steps to avoid critical load exceedance and restore the site to 'at or below' critical loads, will require action to reduce emissions from existing agricultural sources as a priority.

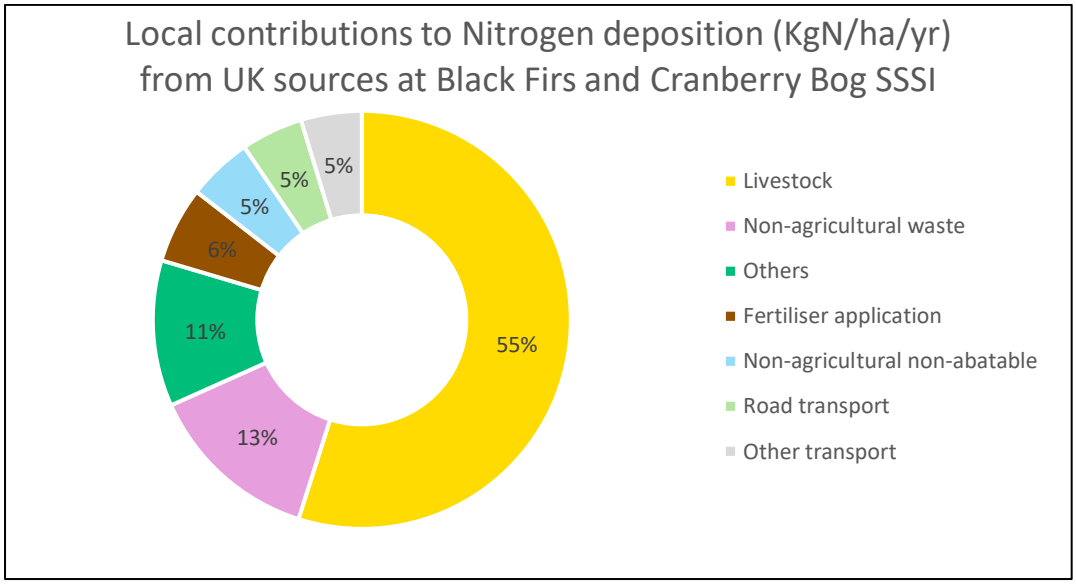

***Figure 5.5**: Local contributions to Nitrogen deposition (KgN/ha/yr) from sources (UK) at Black Firs to Cranberry Bog SSSI*

[113] Natural England (2018) CMS for Black Firs to Cranberry Bog SSSI. Available at:

https://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1022695&SiteCode=S1003841&SiteName=black%20firs&countyCode=&responsiblePerson= [Accessed: 13/06/24].

5.5 Conclusions

5.5.1 Taking into consideration the small contribution of traffic sources to baseline nitrogen levels, decreasing pollution trends, habitats within 200m of the roads, the positive contribution of policies in the Local Plan, county and national initiatives, it is considered that there will be no adverse impact on site integrity at the Midland Meres and Mosses Phase 2 Ramsar (either alone or in-combination) due to changes in air quality. It is noted that the key management issue at the components of these Ramsar sites are related to water quality and water levels. This is assessed in more detail in **Chapter 6**.

6 Water Quality and Water Quantity Appropriate Assessment

6.1 Introduction

6.1.1 The HRA screening process in **Chapter 4** concluded that a number of the Local Plan policies and all allocations have the potential to result in likely significant water impacts at the following European sites:

- Cannock Chase SAC
- Humber Estuary SAC, SPA and Ramsar
- Mersey Estuary SPA and Ramsar
- Midland Meres and Mosses Phase 1 Ramsar
- Midland Meres and Mosses Phase 2 Ramsar
- Pasturefields Salt Marsh SAC
- Peak District Dales SAC
- Peak District Moors (South Pennine Moors Phase 1) SPA
- Severn Estuary SAC, SPA and Ramsar
- South Pennine Moors SAC
- West Midland Mosses SAC

6.1.2 This chapter provides an AA which assesses more precisely the ecological impacts associated with a deterioration in water quality and changes to water quantity due to Local Plan growth at each European site in view of its qualifying features and conservation objectives.

6.1.3 The following policies were screened into the HRA process for consideration in an AA due to likely significant water effects (**Appendix C**):

- PSD 1: Overall Development Strategy
- PSD 3: Distribution of Development
- HOU 4: Gypsy, Travellers and Travelling Showpeople
- EMP 1: Employment
- RET 4: Newcastle-under-Lyme Town Centre

6.2 Water Quality Appropriate Assessment

Baseline Information

6.2.1 As noted in **Section 3.5**, development has the potential to reduce the quality of water entering a catchment through processes such as sedimentation, accidental spillage of chemicals and materials and operational surface water runoff. Water quality may also be reduced through effluent discharges at WwTW. This change in water quality can increase nutrient inputs into a catchment which can lead to algal blooms, reduce dissolved oxygen and increase turbidity. This can affect the overall condition of the receiving waterbody and may have adverse effects at hydrologically sensitive and connected European sites and their qualifying features.

6.2.2 The WFD provides an indication of the health of the water environment and whether a water body is at good status or potential. This is determined through an assessment of a range of elements relating to the biology and chemical quality of surface waters and quantitative and chemical quality of groundwater. To achieve good ecological status or potential, good chemical status or good groundwater status, every element assessed must be at good status or better. If one element is below its threshold for good status, then the whole water body's status is classed below good. Surface water bodies can be classed as high, good, moderate, poor or bad status.

6.2.3 The screening assessment (presented in **Chapter 4**) identified water quality LSEs at two European sites which are located within the Plan area. These are the Midland Meres and Mosses Phase 1 Ramsar and the Midland Meres and Mosses Phase 2 Ramsar sites. These Ramsar sites comprise a number of components which are distributed across a large area both inside the Plan area and further afield (**paragraph 5.2.5**). The components of these Ramsar sites which are located within the Plan area, and are vulnerable to water LSEs, are underpinned by the following SSSIs:

- Betley Mere SSSI (Midland Meres & Mosses Phase 1 Ramsar)
- Black Firs and Cranberry Bog SSSI (Midland Meres & Mosses Phase 2 Ramsar)

6.2.4 The Midland Meres and Mosses Phase 1 Ramsar comprises a diverse range of habitats from open water to raised bog that supports a number of rare species of wetland plants including five nationally rare species alongside three endangered insects (see **Appendix B)**. **Paragraph 5.2.4** provides a description of the Midland Meres and Mosses Phase 2 Ramsar designation. It is noted that components of the Midland Meres and Mosses Phase 1 and Phase 2 Ramsar sites are either fed by groundwater or rainwater, depending on their stage of physical transition between bog and fen.

6.2.5 The Betley Mere SSSI component of the Midland Meres and Mosses Phase 1 Ramsar comprises of a 26-acre natural lake which is designated due to its unique flora and fauna and species rich habitats[114]. Betley Mere is a site of lowland open water and one of the few natural standing waters in Staffordshire with extensive peat deposits and highly diverse associated fringing habitats including reed swamp, fenn, carr and damp pasture. It is a shallow eutrophic water body with a sparse submerged aquatic vegetation surrounded to the north and west by a nationally uncommon type of wet alder-willow woodland. Pastures to its north occupy the site of a former raised bog and plant communities reflect the differences in the nutrient status of the peat at this location[115]. The nearest site allocation (MD29) is located approximately 3.9km to the south. It is highly sensitive to water pollution due to WwTW discharges and agricultural sources of pollution[116]. A review of SSSI condition data indicates that the majority of its SSSI units are in an 'unfavourable – condition', partly due to water pollution and low water levels. The WCS[117] indicates that the Betley WwTW is located adjacent to the SSSI, discharging to an unnamed watercourse which is a tributary of the Mere Gutter. This watercourse passes through the SSSI. Information contained in the WCS indicates that the WFD Cycle 2 classifies the Mere Gutter as 'Bad'. As a result of this classification, this channel can experience no further deterioration. Any changes to water quality as a result of discharges from the WwTW could have an adverse impact upon the quality of water at Betley Mere SSSI.

[114] Natural England. Designated Sites Viewer: Betley Mere SSSI, Citation.

[115] Natural England. Designated Sites Viewer: Betley Mere SSSI, Citation.

[116] Natural England (2018) Designated Sites View: Betley Mere SSSI.

[117] JBA Consulting (2024) Newcastle-under-Lyme Borough Council Water Cycle Study. Available at: https://www.newcastle-staffs.gov.uk/planning-policy/local-plan-evidence-base [Accessed 04/07/24].

6.2.6 The Black Firs and Cranberry Bog SSSI component of the Midland Meres & Mosses Phase 2 Ramsar is at risk of water pollution from agriculture and private discharges[118]. Cranberry Bog contains the nationally rare *schwingmoor* basin mire habitat, one of only two such sites in Staffordshire, which is rich in bog and fen plants. Black Mere, the open water part of the site, is the surviving part of a former kettle hole lake and forms the largest dystrophic open water in the county[119]. The closest watercourse to the site lies approximately 1km to its southwest, and the nearest site allocation (AB2 - employment) is located approximately 2.8km to the east. A review of SSSI condition data indicates that the site is predominately in an 'unfavourable – no change' condition due to water pollution. A review of NE SSSI data indicates the poor water quality is a result of drainage, causing eutrophication. The source of this is likely to be agricultural and domestic sources in the surrounding surface water catchment. The management objectives for the site include those to control the spread of invasive species and importantly work to maintain water levels across the SSSI[120]. Techniques to restore water levels include provision of weirs, creation of culverts, replacement of new drains and clearance of vegetation to prevent obstructions[121]. Given the distance of the closest watercourse to this component of the Ramsar it is unlikely that discharges from WwTWs associated with the Plan area will affect water quality.

6.2.7 In addition to these sites being at risk from point sources of pollution associated with WwTW discharges, they are also at risk of diffuse pollution from new developments including drainage from housing estates, runoff from roads and discharges from commercial and industrial premises.

6.2.8 The screening assessment also identifies hydrological connectivity between the Plan area and a number of European sites which lie outside the Plan area. These include the following:

- Cannock Chase SAC
- Humber Estuary SAC, SPA and Ramsar
- Mersey Estuary SPA and Ramsar
- Midland Meres & Mosses Phase 1 Ramsar (components outside the Plan area)
- Midland Meres & Mosses Phase 2 Ramsar (components outside the Plan area)
- Pasturefields Salt Marsh SAC
- Severn Estuary SAC, SPA and Ramsar
- West Midland Mosses SAC

[118] Natural England (2018) Designated Sites View: Black Firs and Cranberry Bog SSSI.

[119] Natural England. Designated Sites Viewer: Black Firs and Cranberry Bog SSSI, Citation.

[120] Staffordshire Wildlife Trust. Black Firs and Cranberry Bog Reserve Management Plan 2019 – 2029.

[121] JBA Consulting (2021) Black firs and Cranberry Bog – 2021 Review.

6.2.9 Cannock Chase SAC is the largest surviving area of European dry heath land in the Midlands and is also designated for its Northern Atlantic wet heaths with *Erica tetralix*[122,123]. Furthermore, the SAC has the main British population of the hybrid bilberry (*Vaccinium intermedium*)[124]. A review of condition data indicates that the European dry heaths are in 'favourable' and 'unfavourable – recovering' conditions, whereas the Northern Atlantic wet heaths are in an 'unfavourable – no change' condition[125]. The SAC is pressured by drainage and hydrological changes which indicated a move towards a drier wetland vegetation[126]. The River Sow flows approximately 470m from the northern part of the SAC. The River Trent flows approximately 110m to the east of the SAC at its closest. The River Sow and the River Trent are downstream of the Plan area. The SSSI citation does not suggest the site is at risk from water pollution.

6.2.10 Components of the Midland Mere and Mosses Phase 1 and Phase 2 Ramsar sites which are located outside, but in close proximity to, the Plan area and which are hydrologically linked include Wybunbury Moss SSSI and Oakhanger Moss SSSI.

6.2.11 The Wybunbury Moss SSSI component of the Midland Meres & Mosses Phase 1 Ramsar, which is also designated as the West Midland Mosses SAC, is a nationally important site due to the presence of a *schwingmoor*. This supports a diverse range of nationally and locally rare plants and invertebrates and therefore maintenance of water quality is critical to its 'favourable' condition status. The lake basin containing the *schwingmoor* is likely to have been caused by secondary processes associated with the solution and subsidence of the underlying salt bearing strata. The SSSI is highly sensitive to changes in nutrient including changes in nitrogen and phosphorus area[127]. The SSSI is vulnerable to agricultural sources of water pollution[128]. A review of SSSI condition data indicates that a number of units of this SSSI are in an 'unfavourable – recovering' condition due to water pollution. The Conservation Objectives Supporting Advice for West Midlands Mosses SAC for phosphorus is to 'restore stable nutrient levels appropriate for lake type. Water is normally acidic and poor in available nutrients.' And for nitrogen is to 'restore nitrogen concentrations to less than 1.5 mg L-1'[129]. The WCS indicates that Madeley WwTW is located approximately 9km upstream of this SSSI. The WCS states that as Wybunbury Moss SSSI is located 400m from the Howbeck Brook, the risk from discharges at Madeley is likely to be negligible in terms of surface water quality impacts. It is noted that neither the Plan area nor the Howbeck Brook to the south of the SAC are located within the catchment of the Wybunbury Moss SSSI.

[122] Cannock Chase National Landscape (2023) Welcome to Cannock Chase National Landscape. Available at: https://www.cannock-chase.co.uk [Accessed 28/05/24]

[123] Natural England (2018) Cannock Chase SAC Conservation Objectives.

[124] Natural England (2014) Cannock Chase SAC Citation.

[125] Natural England (2018) Designated Sites View: Cannock Chase SAC.

[126] Natural England (2014) Site Improvement Plan: Cannock Chase.

[127] Natural England (2022) TIN206. West Midland Mosses Special Area of Conservation Evidence Pack.

[128] Natural England (2018) Designated Sites View: Wybunbury Moss SSSI.

[129] Natural England (2018) European Site Conservation Objectives: Supplementary advice on conserving and restoring site features West Midlands Mosses Special Area of Conservation (SAC) Site Code: UK0013595.

6.2.12 Oakhanger Moss SSSI is described in detail at **paragraph 5.2.6**. It supports four different mire communities. A review of the SSSI citation for the Oakhanger Moss SSSI component of the Midland Meres and Mosses Phase 2 Ramsar indicates that it is vulnerable to changes in the level of freshwater within the moss[130]. The site is an 'unfavourable – declining' condition due to drainage issues, causing low water levels and therefore a drying of the site, alongside its conversion back to a wet woodland. The closest watercourse flows approximately 700m to the south of the site, however it is not hydrologically connected through flood events.

6.2.13 Watercourses from the Plan area form tributaries of the River Trent. This river runs adjacent to Pasturefields Salt Marsh SAC, which is one of only two remaining natural inland saltmarshes in the UK and is located within the floodplain of the River Trent. The SAC is on the site of a former brine extraction in the Trent Valley and is fed by naturally saline groundwater[131]. This saline environment has resulted in the establishment of salt tolerant flora and inland salt meadows. Pasturefields Salt Marsh SAC is an 'unfavourable – no change' condition due to drainage issues which have the potential to impact water quality at the SAC's. Given the site's location within the floodplain of the River Trent, any changes in water quality from point or diffuse sources of water pollution from the Plan area would affect the conservation status of this SAC.

6.2.14 The Severn, Humber and Mersey Estuary SAC, SPA and Ramsar designations have been screened into the water quality AA, as a review of Natural England data indicates they are vulnerable to water pollution[132,133,134,135]. A change in water quality can affect the habitats and species for which they are designated.

6.2.15 As noted in **Section 3.7**, migratory species of fish for which the Severn and Humber Estuary SAC and Ramsar sites have been designated have the potential to use watercourses which are hydrologically linked to the Plan area for parts of their lifecycle, notably spawning. A change in the quality of water in these upstream spawning locations has the potential to adversely impact these qualifying features.

Mitigation

6.2.16 Policy SE5 (Water Resources and Water Quality) of the Local Plan (**Box 1**), requires new development to protect water quality through measures such as the designation of nitrate vulnerable zones and enhancement of watercourses and associated habitats.

[130] Natural England (2012) Designated Sites View: Oakhanger Moss SSSI.

[131] Staffordshire Wildlife Trust. Pasturefields Saltmarsh SAC. Information available at: https://www.staffs-wildlife.org.uk/nature-reserves/pasturefields-saltmarsh [Accessed 11/06/24].

[132] Natural England (2014) Site Improvement Plan: Severn Estuary.

[133] Natural England. Designated Sites View: Humber Estuary SSSI.

[134] English Nature (2003) The Humber Estuary European Marine Site. Available at: https://publications.naturalengland.org.uk/file/3306602 [Accessed 20/06/24].

[135] English Nature (2006) The Mersey Estuary SPA Site Characterisation of European Marine Sites. Available at: https://plymsea.ac.uk/id/eprint/1341/1/Mersey_Estuary_EMS_Final.pdf [Accessed 20/06/24].

Box 1: Extract from Policy SE5: Water Resources and Water Quality

1. Development proposals should demonstrate a commitment to sustainable water management, the mitigation of adverse impacts on water quality, and contribute positively towards the objectives of the Water Framework Directive. This includes preventing pollution risks to groundwater, surface water, and associated ecosystems, and ensuring that development does not compromise the existing ecological status of water bodies.
2. Development proposals located within designated nitrate vulnerable zones or in close proximity to sensitive water bodies should consider nitrate neutrality.
3. Development proposals must consider the capacity limitations outlined in the Water Cycle Study (WCS). Where constraints are identified, developers must work with the Environment Agency and water companies to implement appropriate mitigation measures.
4. Development should seek opportunities to enhance watercourses (rivers, streams, and canals) and their associated habitats, contributing positively to local biodiversity and green infrastructure goals.

6.2.17 Policy SE2: Land Contamination of the Local Plan requires development to ensure it has no negative impact on water quality. In addition, Policy SE4: Sustainable Drainage Systems requires development to manage and discharge surface water through Sustainable Drainage Systems (SuDS) which will contribute to the protection of water quality. To ensure that development does not have a detrimental impact on the water environment, Policies IN1: Infrastructure and IN7: Utilities set out NUL's requirements in terms of water and wastewater infrastructure to accommodate new development.

6.2.18 In addition, Policy SE8: Biodiversity and Geodiversity will apply to all development and any windfall which comes forward through the Local Plan. This policy includes requirements for development to comply with the Habitat Regulations Assessment and ensures development does not contribute to any adverse impacts on the integrity of any European site, "*habitat, species or components of ecological networks or geological interests*" either alone or in-combination.

Appropriate Assessment

6.2.19 The outputs of the WCS and water quality modelling have been drawn upon to inform this AA. The WCS was undertaken through consultation with the statutory water suppliers, the EA and neighbouring LPAs.

6.2.20 As noted in paragraph 6.2.1 increased growth can lead to a deterioration of water quality at water sensitive European sites through either polluted surface water run off or through increased discharges from WwTWs. Under the WFD, a watercourse is not allowed to deteriorate from its current WFD classification (either as an overall watercourse or for individual elements assessed).

6.2.21 Effluent discharge to the water is controlled through an environmental permitting system which is administered by the EA. The level of discharge is determined by the EA through the issue of Environmental Permits (EPs). These ensure the receiving watercourse is not prevented from meeting its environmental objectives under the WFD, with specific regard to the physico-chemical status element of the WFD classification.

6.2.22 To predict water quality at European sites, detailed water quality modelling was undertaken as part of the WCS[136] using the EA's SIMCAT model[137]. This was applied to watercourses adjacent to, or as close as possible to, European sites with hydrological connectivity.

6.2.23 Using Local Plan information, two scenarios were modelled. These included the impact of the Local Plan growth alone scenario and the impact of the Local Plan in combination with neighbouring local authority forecast growth scenario.

6.2.24 The modelling looked at three physico-chemical quality elements in the adjacent water body, including Biochemical Oxygen Demand (BOD), Ammonia, and Phosphate.

6.2.25 If the model indicated a change in water quality of 10% or more, or a decrease in the WFD class, the impact on water quality was deemed to be significant.

6.2.26 A significant deterioration in water quality was predicted at only one European site; Betley Mere SSSI, a component of the Midland Meres and Mosses Phase 1 Ramsar. The modelling forecast a 17% increase in Ammonia and a 13% increase in Phosphate levels by 2040, changing the WFD water quality status from 'Good' to 'Moderate'. The modelling predicted that all deteriorations could however be prevented through improvements in treatment processes at WwTWs to Technically Achievable Limits (TAL). No other changes in water quality of 10% or more or a decrease in WFD class were predicted by the model at any other European site.

Conclusions

6.2.27 The water quality modelling shows that a significant deterioration in water quality can be prevented all European sites (alone and in-combination) by improvements in treatment processes to TALs at WwTWs.

6.2.28 Policies SE5 (Water Resources and Water Quality), SE4 (Sustainable Drainage Systems) and SE2 (Land Contamination) will ensure water discharges from new development are managed to ensure no deterioration in water quality from surface run off.

6.2.29 In addition, Policy SE8 (Biodiversity and Geodiversity) requires all development to comply with the requirements of the Habitats Regulations to ensure no adverse impacts on site integrity.

6.2.30 Taking into consideration the outputs of the water quality modelling protection given by Local Plan policies and the location of allocations in relation to European sites, it can be concluded that there will be no adverse water quality impacts upon any European site either alone or in-combination as a result of the Local Plan.

[136] JBA Consulting (2024) Newcastle-under-Lyme Borough Council Water Cycle Study. Available at: https://www.newcastle-staffs.gov.uk/planning-policy/local-plan-evidence-base [Accessed 04/07/24].

[137] SIMCAT model has been developed by the Environment Agency. Further details on modelling are provided in the JBA Phase 2 WCS.

6.3 Water Quantity Appropriate Assessment

Baseline Information

6.3.1 Development can reduce catchment permeability and the presence of drainage networks may be expected to remove runoff from urbanised catchments. This may result in changes in run off rates from urbanised areas to European sites or watercourses which connect to them and therefore a change in water levels. Water mains leakage and sewer infiltration may also affect water levels. In addition, a change in water supply to meet water demand associated with new development (residential and employment development supported by the Local Plan) also has the potential to affect water balances at hydrologically sensitive European sites which are connected to the Plan area. Water is abstracted from the North Staffordshire WRZ by STW to meet water demand in the Local Plan area. European sites which are located within this WRZ have therefore been screened in for further consideration in this AA (see **Table 3.5**).

Mitigation

6.3.2 Together the Government, the EA and the water companies are responsible for preparing plans and strategies and implementing a regulatory framework to ensure there is enough water for the future needs of both people and the environment. This is undertaken through a catchment-based approach and provides protection for European sties and ensures compliance with the WFD[138].

6.3.3 The Severn Trent Water WRMP (summarised in **paragraph 3.5.13**) sets out a long-term strategy from 2024-2085 to mitigate the likely future supply/demand deficit of 244Ml/d by 2040-2041 if no action is taken. The WRMP proposes leakage reduction measures, metering activities, encourages water efficiency and the restoration of rivers to improve ecological resilience to low flows. Current EA abstraction licenses will be capped to prevent WFD deterioration and reduce unsustainable abstraction.

6.3.4 The United Utilities WRMP (summarised **paragraph 3.5.14**) sets out the strategy for achieving a long-term, best value and sustainable water supply plan from 2025-2050. The WRMP proposes leakage reduction, managing customer demand, water transfers and adaptive planning.

[138] European Commission. Water Framework Directive. Available at: https://environment.ec.europa.eu/topics/water/water-framework-directive_en [Accessed 11.06.24].

6.3.5 The Water Industry Act 1991, as amended by the Water Act 2003, made it a statutory requirement for water companies to produce and maintain a Drought Plan every 5 years. A Drought Plan (or Dry Weather Plan) sets out the framework for a water company to follow in times of drought and dry weather to maintain water supply and links strategically with the WRMPs. The Severn Trent Water Drought Plan[139] and the United Utilities Drought Plan[140] cover the period 2022 to 2027. A number of drought / dry weather scenarios are tested in these plans under different climatic conditions to show that supply can be maintained. These plans are aligned with the WRMPs.

6.3.6 As set out in **Section 3.5**, abstractions for water supply are managed by the EA through licences issued in line with their CAMS process.

6.3.7 Policy SE5 (Water Resources and Water Quality) of the Local Plan (**Box 1**), requires new development to commit to the sustainable use of water, through measures such as water re-use and water demand management.

6.3.8 Policy CRE 1 (Climate Change) of the Local Plan requires non-domestic development to meet an excellent standard of water efficiency and residential development to adopt water saving measures to manage water use.

6.3.9 In preparing the Local Plan, NUL has been in ongoing liaison with the water companies, to ensure that appropriate and sufficient supply can be made for infrastructure, and that the emerging growth proposals can be supported. This forms part of the Duty to Cooperate on strategic cross border issues and will inform the Infrastructure Delivery Plan which forms a critical component of the Local Plan evidence base.

Conclusions

6.3.10 Water supply issues will be addressed through the higher-level water planning framework and licencing process (RBMP, WRMP, Drought Plans and CAMS). Local Plan policies to improve water efficiency and ensure adequate water supply for growth will also ensure water supplies at European sites can be met to meet the requirements of European sites. It can therefore be concluded that there will be no adverse impacts on the integrity of any European site, either alone or in-combination, due to a change in water quantity as a result of the Local Plan.

[139] Severn Trent Water. 2022. Drought Plan 2022-2027. Available at: https://www.severntrent.com/content/dam/stw-plc/water-resource-zones/drought-plan-2022-2027.pdf [Accessed 03.06.24].

[140] United Utilities. 2022. Final Drought Plan. Available at: https://www.unitedutilities.com/globalassets/z_corporate-site/about-us-pdfs/final-drought-plan-2022/final-drought-plan-2022.pdf [Accessed 03.06.24].

7 Recreational Pressure Appropriate Assessment

7.1 Introduction

7.1.1 The following section of the AA focuses on assessing the ecological impacts of increased recreational pressure from the Local Plan upon the qualifying features of the following European sites which were screened into the HRA process (**Chapter 4**):

- Midland Meres & Mosses Phase 1 Ramsar – Betley Mere SSSI
- Midland Meres & Mosses Phase 2 Ramsar – Black Firs and Cranberry Bog SSSI

7.1.2 Policies with the potential to have likely significant recreational effects and which are therefore screened into the AA include:

- Policy PSD 1: Overall Development Strategy
- Policy PSD 3: Distribution of Development
- Policy HOU 4: Gypsy, Travellers and Travelling Showpeople
- Policy RET 4: Newcastle-under-Lyme Town Centre

7.2 Baseline Information

7.2.1 As set out in **Section 3.6**, development, and specifically housing growth, has the potential to increase recreational pressure at European sites. These pressures can cause the loss of, or damage to, the features for which a European site is designated[141]. Recreational activities including land and water-based pursuits can lead to impacts such as:

- Habitat loss;
- Habitat fragmentation;
- Habitat damage through trampling and erosion;
- Disturbance to plants and animals from increased numbers of people undertaking a range of different open air recreational activities;
- Disturbance to plants and animals from dogs; and
- Pollution and contamination caused by dog fouling (eutrophication).

[141] Natural England. Public Access and Disturbance Theme Plan A strategic approach to identifying and addressing significant effects on the features of Natura 2000 sites.

Midland Meres & Mosses Phase 1 Ramsar – Betley Mere SSSI

7.2.2 The Midland Meres and Mosses Phase 1 Ramsar comprise of a diverse range of habitats from open water to raised bog that supports a number of rare species of wetland plants (see **Appendix B)**. These are likely to be vulnerable to recreational impacts such as trampling and erosion where public access occurs.

7.2.3 A description of Betley Mere SSSI is provided in **paragraph 6.2.6**. This component of the Ramsar is located to the west of the plan area within the village of Betley in Staffordshire and lies approximately 300m from the A531 which runs from Madeley to Weston. There are no roads leading directly to the SSSI and there are no parking facilities at the SSSI. The surrounding land use is predominantly agricultural and rural in nature.

7.2.4 A review of aerial and OS mapping data indicates that there is one linear PRoW which runs along the western boundary of the SSSI in a north to south direction. Dense woodland is located between the PRoW and the mere, with no direct public access to the mere itself.

Midland Meres & Mosses Phase 2 Ramsar – Black Firs and Cranberry Bog SSSI

7.2.5 As set out in **paragraph 5.2.4**, the Midland Meres and Mosses Phase 2 Ramsar comprise a range of diverse habitats from open water to raised bog which support many rare wetland plants (see **Appendix B**).

7.2.6 Black Firs and Cranberry Bog SSSI is described at **paragraphs 5.2.8** and **6.2.7** and is located approximately 1.6km to the north of the village of Betley in the west of the Plan area. There are a number of dwellings located directly adjacent to the northern boundary of the SSSI, with further residential development located to its west beyond Post Office Lane. Arable fields delineated by hedgerows are located to the north-east and south-east of the Ramsar.

7.2.7 Black Firs and Cranberry Bog SSSI is managed by the Wildlife Trust who work with Natural England to monitor the site and develop plans for its long-term protection. There is no direct public access to the Cranberry Bog area of the SSSI due to its sensitive nature and the presence of the *Schwingmoor* basin mire which can be hazardous due to its unstable nature. However, public access is possible to the Black Firs area of the SSSI along a PRoW which runs along the SSSI's southern boundary. The Staffordshire Wildlife Trust's Management Plan for the site indicates that there is a small circular walk around the Black Firs section of the SSSI but that is not promoted as a visitor destination[142]. There are no Wildlife Trust facilities at the site, however there is a small carpark available on a nearby road.

7.3 Mitigation

7.3.1 Policy SE6: Open Space, Sports and Leisure Provision sets out requirements for new development to provide open space provision in line with national requirements. In addition, as set out in **Section 5.2.24**, Policy SE8 (Biodiversity and Geodiversity) provides high level protection for European sites against any adverse impacts caused by development.

[142] Staffordshire Wildlife Trust. Black Firs and Cranberry Bog Reserve Management Plan 2019 – 2029.

7.4 Appropriate Assessment

7.4.1 **Figure 7.1** shows the proximity of site allocations to both components of the Midland Meres and Mosses Phase 1 and Midland Meres and Mosses Phase 2 Ramsar sites.

7.4.2 The closest residential site allocation to Betley Mere SSSI and Black Firs and Cranberry Bog SSSI is Site MD29 in Madeley, which is located approximately 3.4km and 5.6km to the south of these SSSIs respectively. This allocation is separated from the SSSIs by existing transport infrastructure and urban development.

7.4.3 All other residential allocations are located of 4km to the east of these SSSIs, within the residential areas of Audley and Stoke-on-Trent. These allocations are separated from the SSSIs by the M6, existing transport infrastructure and urban development which are likely to pose barriers to movement.

7.4.4 There are a number of alternative recreational options located within close proximity to site allocations within the Plan area (see **Figure 7.1**). A review of locally alternative available green spaces, close to the SSSIs, indicates that Apedale Community Country Park is located approximately 5.4km from the village of Betley. This Country Park provides 184ha of open space including woodland, meadows and pools and offers a café, mine tours, a museum and a railway for train rides. There are five small greenspaces located in Betley as shown by OS Open Greenspace. These include two playing fields, a cemetery, religious grounds, a tennis court and a sports facility. Larger greenspaces are situated approximately 2.4km, 4.2km and 5.6km from the village of Betley as open access land under the Countryside and Rights of Way Act 2000. These greenspaces provide alternative local recreational destinations with a range of visitor facilities in the western area of the Plan area. **Figure 7.1** also highlights the variety and volume of alternative greenspaces which are situated closer to Local Plan allocations.

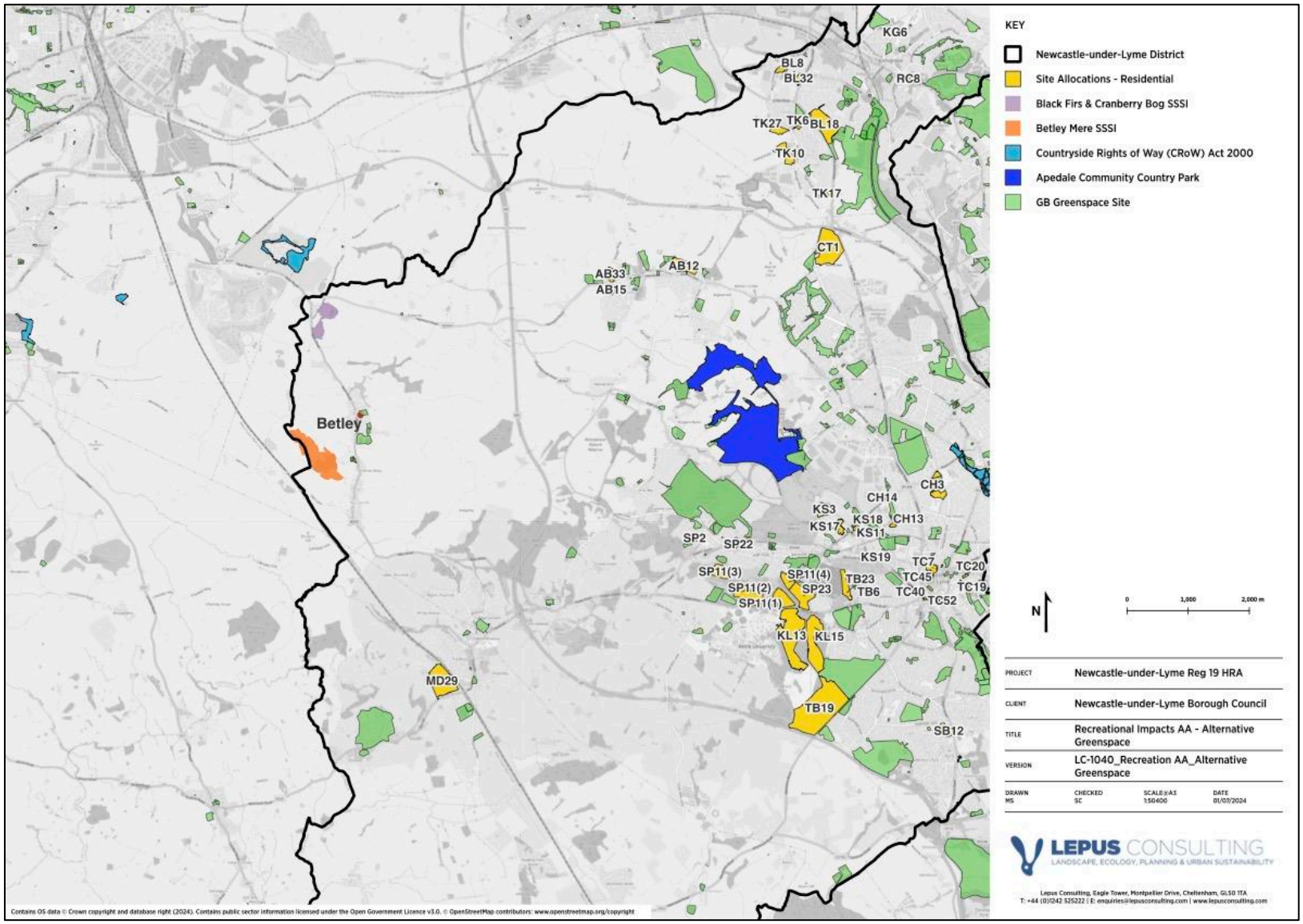

Figure 7.1: *Alternative greenspace in the vicinity of Betley Mere SSSI and Black Firs & Cranberry Bog SSSI – residential allocations*

7.5 Conclusion

7.5.1 Taking into consideration the limited public access to the Betley Mere SSSI and Black Firs and Cranberry Bog SSSI components of the Midland Meres and Mosses Phase 1 Ramsar and Midland Meres and Mosses Phase 2 Ramsar sites, Local Plan mitigation policy which requires delivery of open space to meet the needs of new growth, the availability of other publicly accessible spaces closer to Local Plan allocations and distance of allocations to theses SSSIs, it is considered that there is unlikely to be any adverse recreational impacts on the integrity of the European sites from the Local Plan alone or in-combination.

8 Conclusions

8.1 Summary

8.1.1 The Local Plan is not directly connected with or necessary to the management of any European site. A screening assessment was therefore undertaken which identified a number of LSEs associated with the Local Plan. Taking no account of mitigation measures, the Local Plan has the potential to affect the following European sites:

- Cannock Chase SAC
- Humber Estuary SAC, SPA and Ramsar
- Mersey Estuary SPA and Ramsar
- Midland Meres and Mosses Phase 1 Ramsar
- Midland Meres and Mosses Phase 2 Ramsar
- Pasturefields Salt Marsh SAC
- Peak District Dales SAC
- Peak District Moors (South Pennine Moors Phase 1) SPA
- Severn Estuary SAC, SPA and Ramsar
- South Pennine Moors SAC
- West Midland Mosses SAC

8.1.2 The HRA therefore progressed to the next stage of the HRA process: Appropriate Assessment. The following matters were explored in more detail:

- Impacts on designated features affected by a possible deterioration in air quality;
- Impacts on water quality and quantity associated with increased levels of built development;
- Impacts associated with increased recreational pressure at European sites; and
- Consideration of impacts at associated functionally linked land.

8.1.3 A range of potential threats and pressures that might be exacerbated by the Local Plan were identified through the assessment process. The Precautionary Principle has been used in circumstances of where likely effects were considered to be uncertain. The protective framework provided by the Local Plan and existing protection measures set out in high level strategic policy and existing planning policy frameworks that serve to help overcome the identified potential adverse effects have been factored into the assessment process.

8.1.4 Taking into consideration these factors, it is concluded that the Local Plan would have no adverse impact on site integrity at any European site, either alone or in-combination.

8.2 Next steps

8.2.1 The purpose of this report is to inform the HRA of the Publication Draft Version of the Local Plan using best available information.

8.2.2 Newcastle-under-Lyme Borough Council, as the Competent Authority, has responsibility to make the Integrity Test, which can be undertaken in light of the conclusions set out in this report.

8.2.3 This report will be submitted to Natural England, the statutory nature conservation body, for formal consultation. NUL must 'have regard' to Natural England's representations under the provisions of the Habitats Regulations prior to making a final decision as to whether they will 'adopt' the conclusions set out within this report as their own.

Appendix A: In-combination assessment

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
Cheshire East Council	Cheshire East Local Plan Strategy[1] – adopted 27th July 2017.	380ha of land for employment and 36,000 homes between 2010 and 2030.	No HRA available on Council website.	Yes. This plan has the potential to act in-combination with the Local Plan through increased residential and employment development which may trigger in-combination recreational, air quality, and water LSEs.
Cheshire East Council	Site Allocations and Development Policies Document (SADPD)[2] – adopted 22nd December 2022.	Allocates sites for development (non-strategic sites of less than 150 homes or 5 hectares in size). Development of 7ha of employment land and 3,500 new homes.	SADPD document supported by an HRA[3]. The HRA screened in LSEs at the River Dee and Bala Lake SAC due to changes in water levels (due to abstraction) and recreational pressures. The AA identified that the existing policies and provisions of the Local Plan, Natural Resources Wales, the Environment Agency and United Utilities in relation to water supply, will ensure that	Yes. This plan has the potential to act in-combination with the Local Plan through increased residential and employment

[1] Cheshire East Council (2017) Cheshire East Local Plan: Local Plan Strategy 2010-2030. Available at: https://www.cheshireeast.gov.uk/pdf/planning/local-plan/local-plan-strategy-web-version-1.pdf [Accessed: 24/06/24].

[2] Cheshire East Council (2022) Cheshire East Local Plan: Site Allocations and Development Policies Document. Available at: https://www.cheshireeast.gov.uk/planning/spatial-planning/cheshire_east_local_plan/site-allocations-and-policies/sadpd-examination/documents/examination-library/adopted-sadpd.pdf [Accessed: 24/06/24].

[3] JBA Consulting (2020) Cheshire East Local Plan Site Allocations and Development Policies Document. Habitats Regulations Assessment Revised Publication Draft. Available at: https://www.cheshireeast.gov.uk/planning/spatial-planning/cheshire_east_local_plan/site-allocations-and-policies/sadpd-examination/documents/examination-library/ED04-SADPD-Revised-HRA.pdf [Accessed: 03/06/24].

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
			the SADPD will have no adverse impact on site integrity at any European site.	development which may trigger in-combination recreational, air quality, and water LSEs.
Staffordshire Moorlands District Council	Staffordshire Moorlands District Council Local Plan 2014 – 2023[4] – adopted 9th September 2020.	Local plan allocates 32 hectares of employment land and 6,080 homes between 2014 and 2033.	The Local Plan was subject to HRA[5]. The following LSEs were screened into an AA: • Effects from increased water demand on the South Pennine Moors Phase SPA and SAC and Peak District Dales SAC; • Effects from increased traffic on air quality on the South Pennine Moors Phase 1 SPA and SAC and Peak District Dales SAC; • Increased recreational pressure on the South Pennine Moors Phase 1 SPA and SAC and Peak District Dales SAC; and • Urban effects on the South Pennine Moors Phase 1 SPA and SAC and Peak District Dales SAC. Policy text was updated to take on board HRA recommendations and traffic work was taken into consideration. The AA concluded no adverse impact on the integrity of any European site.	Yes. This plan has the potential to act in-combination with the Local Plan through increased residential and employment development which may trigger in-combination recreational, air quality, and hydrology LSEs.
City of Stoke on Trent	The City of Stoke on Trent are in the process of preparing a new Local Plan from 2020 to 2040. This is expected to be submitted in November 2026. The 'issues and	The City of Stoke on Trent had a housing target of 13,500 (gross) within the Core Spatial Strategy.	An HRA has not yet been prepared to support the Local Plan review and an HRA is not available online for the Core Spatial Strategy.	Yes. This plan has the potential to act in-combination with the Local Plan through increased residential and

[4] Staffordshire Moorlands District Council. (2020) Staffordshire Moorlands Local Plan. Available at: https://www.staffsmoorlands.gov.uk/media/6155/Adopted-Local-Plan/pdf/Adopted_Local_Plan.pdf?m=1601645140880 [Accessed: 03/06/24]

[5] Clearlead (2018) Habitats Regulations Assessment Staffordshire Moorlands Local Plan – Submission Version. Available at: https://www.staffsmoorlands.gov.uk/media/2878/Habitats-Regulations-Assessment---Submission-Version-Feb-2018/pdf/HRA_Submission_Version_Local_Plan_February_2018.pdf?m=1517838442430 [Accessed: 03/06/24]

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
	options' consultation was conducted in 2021[6]. The Newcastle-under-Lyme and Stoke on Trent Core Spatial Strategy 2006 – 2026[7] was adopted in October 2009.			employment development which may trigger in-combination recreational, air quality, and hydrology LSEs.
Stafford Borough Council	The Plan for Stafford Borough[8] was adopted on 19 June 2014. The Plan for Stafford Borough: Part 2 was adopted on 31 January 2017. The Local Plan is currently under review and the council has consulted on the preferred options at the end 2022.	Over the plan period (2020 – 2040) the new Local Plan aims to deliver 4,500 new homes and at least 80ha of new employment land.	The Local Plan Preferred Options was supported by an HRA[9]. This HRA identified LSEs at the following European sites: • Cannock Chase SAC (urban effects, recreation, hydrological issues and air quality); • Pasturefields Salt Marsh SAC (hydrological issues, air quality) • West Midlands Meres and Mosses SAC (hydrological issues, air quality); • Midlands Meres and Mosses Phase 1 Ramsar (hydrological issues, air quality); • Midlands Meres and Mosses Phase 2 Ramsar (hydrological issues, air quality) Conclusions have not been drawn in the AA as further pieces of evidence (notably traffic and air quality data) are being prepared to support this process.	Yes. This plan has the potential to act in-combination with the Local Plan through increased residential and employment development which may trigger in-combination recreational, air quality, and hydrology LSEs.

[6] Corrigan, P. (2024) 'Stoke-on-Trent plan for thousands of new homes delayed to 2026'. Available at: https://www.stokesentinel.co.uk/news/stoke-on-trent-news/stoke-trent-plan-thousands-new-9286184 [Accessed 03/06/24].

[7] City of Stoke on Trent and Newcastle-under-Lyme (October 2009) Newcastle-under-Lyme and Stoke-on-Trent Core Spatial Strategy 2006-2026. Available at: https://www.stoke.gov.uk/directory_record/331810/adopted_core_spatial_strategy_2009 [Accessed: 24/06/24].

[8] Stafford Borough Council. The Plan for Stafford Borough. Available at: https://www.staffordbc.gov.uk/lp [Accessed 24/06/24].

[9] Liley, D., Fleming, B. & Caals, Z. (2022) Habitats Regulations Assessment of the Stafford Borough Local Plan 2020-2040 (Preferred Option).

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
Telford and Wrekin Council	The Telford & Wrekin Local Plan 2011-2031[10] was adopted on 11 January 2018. The plan sets out the Council's vision and strategy until 2031. The plan is currently under review.	The adopted Telford & Wrekin Plan supports delivery of 15,555 new homes over the plan period in addition to approx. 76ha of employment land.	The adopted local plan was supported by an HRA[11]. This screened out LSEs at European sites on the basis of air quality mitigation strategies, policy wording (including higher level protective policy) and green infrastructure delivered as part of the plan. It is noted that this HRA was undertaken prior to the Sweetman Ruling (see Section 4.6 of the main HRA report).	Yes. This plan has the potential to act in-combination with the Local Plan through increased residential and employment development which may trigger in-combination recreational, air quality, and hydrology LSEs.
Shropshire Council	The Core Strategy DPD was adopted 24 February 2011. The Site Allocations and Management of Development Adopted Plan was adopted 17 December 2015. The draft Shropshire Local Plan (2016 –	The Draft Shropshire Local Plan indicates that from 2016 to 2038, around 30,800 new dwellings and around 300 hectares of employment land will be delivered.	The local plan review has been supported by the HRA process[13]. This screened in LSEs at a number of European sites for consideration in an AA. The Local Plan policy wording was updated to take account of the AA, consideration was given to sector specific management plans and as a result no adverse impacts on the integrity of European sites was concluded.	Yes. This plan has the potential to act in-combination with the Local Plan through increased residential and employment development which may trigger in-combination

[10] Telford & Wrekin Co-operative Council. Telford & Wrekin Local Plan 2011-2031. Available at: https://www.telford.gov.uk/info/20452/research_and_information/1229/telford_and_wrekin_local_plan_2011-2031 [Accessed: 24/06/24].

[11] Enfusion (2016) Telford & Wrekin Local Plan Submission Version Habitats Regulations Assessment Screening Report. Available at: https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.telford.gov.uk/download/downloads/id/4364/a4_twlp_hra_screening_report_-_submission_version.pdf&ved=2ahUKEwiu7tSh_b6GAxWnXUEAHURZAIYQFnoECBMQAQ&usg=AOvVaw1zdpQx7lF-r9YBJ1ywva_m [Accessed 03/06/24].

[13] Shropshire Council (2020) Regulation 19 Pre-Submission Draft Shropshire Local Plan 2016 to 2038 Habitats Regulations Assessment. Available at: https://www.shropshire.gov.uk/media/21151/sd00801-habitats-regulations-assessment-of-the-regulation-19-pre-submission-draft-of-the-shropshire-local-plan.pdf [Accessed 03/06/24].

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
	2038)[12] is an advanced version of the Local Plan. Public consultation began in April 2024.			recreational, air quality, and hydrology LSEs.
Staffordshire County Council	The current Local Transport Plan (LTP3)[14] was prepared in 2011. The Council began work on a new Local Transport plan in April 2024.	The LTP seeks to: • Support growth and regeneration • Maintain the highway network • Make transport easier to use • Improve safety and security • Reduce road transport emissions • Improve heath and quality of life • Respect the environment The LTP is also supported by a number of Integrated Transport Strategies for individual District/Borough Councils.	The LTP was supported by an HRA[15]. This screened in LSEs at the following European sites: • Peak District Moors (South Pennine Moors Phase 1 SPA) – air quality • Cannock Chase SAC – air quality and recreational activity • Peak District Dales – air quality • River Mease SAC – water quality • South Pennie Moors SAC – air quality • West Midland Mosses SAC – air quality • Midlands Meres and Mosses Ramsar – water quality The AA considered mitigating policies and concluded no adverse impacts on the integrity of European sites.	Yes. This plan will trigger change or development adjacent to the Plan area. There is potential for in-combination air quality impacts. Promotion of alternative modes of transport to the private car may result in positive LSEs in-combination with the Local Plan.

[12] Shropshire Council. Draft Shropshire Local Plan (2016-2038). Available at: https://www.shropshire.gov.uk/planning-policy/local-planning/local-plan-review/draft-shropshire-local-plan-2016-2038-examination/ [Accessed: 03/06/24].

[14] Staffordshire County Council (2011) Staffordshire Local Transport Plan 2011. Available at: https://www.staffordshire.gov.uk/Transport/Transport-Planning/Local-transport-plan/Documents/staffordshirelocaltransportplan2011strategyplan.pdf [Accessed 03/06/24].

[15] Staffordshire County Council (2011) Staffordshire Local Transport Plan. Available at: https://www.staffordshire.gov.uk/Transport/transportplanning/localtransportplan/Documents/Documents/appendixh-habitatsregulationsappropriateassessmentreport.pdf [Accessed: 03/06/24].

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
Staffordshire County Council	The Waste Local Plan[16] for Staffordshire and Stoke-on-Trent (2010 - 2026) was adopted on 22 March 2013.	The plan sets out areas for waste management facilities and capacity over the plan period.	The waste plan does not allocate sites for development of new waste facilities but demonstrates where areas to deliver sites could be delivered. These areas were subject to HRA which screened sites where further site level AA would be required.	Development of waste facilities has the potential to have in-combination urbanisation and air quality LSEs with the Local Plan.
Staffordshire County Council	The Minerals Local Plan for Staffordshire (2015 - 2030)[17] was adopted on 16 February 2017.	The plan identifies suitable land and provides the planning policies that will be used to determine planning applications to develop Staffordshire's minerals resources during the period 2015 to 2030.	HRA not available online.	Use of mineral resources has the potential to have in-combination air quality LSEs with the Local Plan.
Severn River Basin Management Plan (RBMP)	The Severn RBMP was updated in October 2022[18].	The Plan provides an overview of river basin planning in England and Wales for the Severn River Basin District. It includes objectives for each water body and a summary of	The RBMP was supported by an HRA[19]. This concluded that, at the strategic plan level, the RBMP is not likely to have any significant effects on any European sites, alone or in combination with other plans or projects. Given this conclusion, there was no requirement, at this strategic plan level, to	The RBMP actions are focused on water body and water dependent European site improvements. Whilst

[16] Staffordshire County Council and City of Stoke-on-Trent (2013) Staffordshire and Stoke-on-Trent Joint Waste Local Plan 2010-2026. Available at: https://www.staffordshire.gov.uk/environment/planning/policy/wastelocalplan/Documents/Staffordshire-and-Stoke-on-Trent-Joint-Waste-Local-Plan-2010-to-2026-adopted-March-2013.pdf [Accessed: 03/06/24].

[17] Staffordshire County Council (2017) The Minerals Local Plan for Staffordshire 2015 to 2030. Available at: https://www.staffordshire.gov.uk/environment/planning/policy/mineralslocalplan/Documents/The-Minerals-Local-Plan-for-Staffordshire-2015-2030.PDF [Accessed: 03/06/24].

[18] Environment Agency (2022) Severn River Basin Management Plan summary and cross border catchments. Available at : https://www.gov.uk/government/publications/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales [Accessed 03/06/24].

[19] Environment Agency (2022) River basin management plan for the Severn River Basin District Habitats Regulations Assessment. Available at: https://assets.publishing.service.gov.uk/media/635247738fa8f554c470abf5/Severn_river_basin_management_plan_2022_HRA.pdf [Accessed 03/06/24].

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
		the measures necessary to reach those objectives.	progress to the next stage of the HRA (an 'appropriate assessment' to examine the question of adverse effects on the integrity of European sites). The RBMP does not specify exactly where or how measures should be implemented, this will be determined at either a lower-tier plan or project level and this is taken into consideration in the HRA. The HRA also draws on detailed mitigation measures and procedures currently in place.	development activities arising from Local Development Plans (including Newcastle-under-Lyme's Local Plan) may inhibit the ability of the RBMP to achieve objectives relating to European site protected areas, the overall effect of the RBMP is to promote management towards Good Ecological Potential (GEP) and Good Ecological Status (GES).
Humber River Basin Management Plan (RBMP)	The Humber RBMP was updated in October 2022[20].	The Plan provides an overview of river basin planning in England and Wales for the Humber River Basin District. It includes objectives for each water body and a summary of the measures necessary to reach those objectives.	The RBMP was supported by an HRA[21]. This concluded that, at the strategic plan level, the RBMP is not likely to have any significant effects on any European sites, alone or in combination with other plans or projects. Given this conclusion, there is no requirement, at this strategic plan level, to progress to the next stage of the HRA (an 'appropriate assessment' to examine the question of adverse effects on the integrity of European sites). The RBMP does not specify exactly where or how measures should be implemented, this will be determined at either a lower-tier plan or project level and this is taken into	The RBMP actions are focused on water body and water dependent European site improvements. Whilst development activities arising from Local Development Plans (including Newcastle-under-Lyme's Local

[20] Environment Agency (2022) Humber River basin district management plan: updated 2022. Available at: https://www.gov.uk/guidance/humber-river-basin-district-river-management-plan-updated-2022 [Accessed: 03/06/24].

[21] Environment Agency (2022) River basin management plan for the Humber River Basin District Habitats Regulations Assessment. Available at: https://assets.publishing.service.gov.uk/media/63524462d3bf7f193d35a0f7/Humber_river_basin_management_plan_2022_HRA.pdf [Accessed: 03/06/24].

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
			consideration in the HRA. The HRA also draws on detailed mitigation measures and procedures currently in place.	Plan) may inhibit the ability of the RBMP to achieve objectives relating to European site protected areas, the overall effect of the RBMP is to promote management towards GEP and GES.
North West River Basin Management Plan (RBMP)	The Humber RBMP was updated in October 2022[22].	The Plan includes local environmental objectives for water bodies and protected areas that government, the Environment Agency, and other public bodies use can use, an assessment of the current condition of each water body and, if it is not in good condition, the reasons why and summaries of the programmes of measures.	The RBMP was supported by an HRA[23]. This concluded that, at the strategic plan level, the RBMP is not likely to have any significant effects on any European sites, alone or in combination with other plans or projects. Given this conclusion, there is no requirement, at this strategic plan level, to progress to the next stage of the HRA (an 'appropriate assessment' to examine the question of adverse effects on the integrity of European sites). The RBMP does not specify exactly where or how measures should be implemented, this will be determined at either a lower-tier plan or project level and this is taken into consideration in the HRA. The HRA also draws on detailed mitigation measures and procedures currently in place.	The RBMP actions are focused on water body and water dependent European site improvements. Whilst development activities arising from Local Development Plans (including Newcastle-under-Lyme's Local Plan) may inhibit the ability of the RBMP to achieve objectives relating to European site protected areas, the overall effect of the RBMP is to promote

[22] Environment Agency (2022). North West river basin district river basin management plan: updated 2022. Available at: https://www.gov.uk/guidance/north-west-river-basin-district-river-basin-management-plan-updated-2022 [Accessed: 03/06/24].

[23] Environment Agency (2022) River basin management plan for the North West River Basin District Habitats Regulations Assessment. Available at: https://assets.publishing.service.gov.uk/media/635245fd8fa8f554c876f7e9/North_West_river_basin_management_plan_2022_HRA.pdf [Accessed: 03/06/24].

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
				management towards GEP and GES.
Water Resource Management Plan (WRMP) United Utilities	The Revised Draft Water Resources Management Plan 2024 was prepared in 2023[24].	The draft WRMP sets out the strategy to achieving a long-term, best value and sustainable plan for water supply in the North West from 2025 to 2050. It proposes a flexible, low regrets solution that provides environmental improvements and benefits to customers in the North West and supports national water resource needs. The Plan proposes leakage reduction to manage customer demand, water transfers and adaptive planning.	The WRMP was supported by an HRA[25]. This concluded that the WRMP is likely to have a significant effect on the following screened in Local Plan European sites within the statutory 25 year planning period: • Mersey Estuary SPA/Ramsar The HRA provides an AA which concludes that WRMP options will have no adverse impact alone or in-combination. The AA draws on plan level mitigation for un certainties in the assessment process.	The HRA states that the WRMP accounts for future water demand. Therefore, potential 'in-combination' effects due to water resource demands from other plans are unlikely. It is considered the WRMP options will not have significant in-combination effects with local plans in respect of water resources. It is however possible that there will be 'in combination' project-specific construction effects.

[24] United Utilities (2023) Revised Draft Water Resources Management Plan 2024: Main Report. Available at: https://www.unitedutilities.com/globalassets/z_corporate-site/about-us-pdfs/wrmp24-drafts/revised-draft-wrmp24-main-report.pdf [Accessed: 03/06/24].

[25] WSP (2024) United Utilities Water: Habitats Regulations Assessment of the Water Resource Management Plan 2024. Available at: https://www.unitedutilities.com/globalassets/documents/corporate-documents/uu-revised-draft-wrmp24-hra-2024_redacted.pdf [Accessed: 03/06/24].

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
Water Resource Management Plan (WRMP) Severn Trent Water	The Draft Water Resources Management Plan was devised in 2024[26].	The draft Plan describes a likely future supply / demand deficit of 244Ml/d by plan year 2040-2041 if no action is taken. It sets out the long-term strategy until 2085 to prepare for the future. The Plan proposes ongoing leakage reduction measures, water efficiency and metering activities. Some current EA abstraction licenses will be capped to prevent WFD deterioration. It sets out a vision of 'no/low regret' solutions, particularly in response to the challenges of climate change on water demand and supply. The draft builds on previous goals to reduce unsustainable abstraction. Mainly focuses on water availability but considers water quality through design. Severn Trent Water will continue to restore rivers to improve habitats and ecological resilience to low flows. Between 2040-2045, a new Water Treatment Works near Stafford is proposed. This is within close	The WRMP was supported by an HRA[27]. This concluded that the WRMP is likely to have a significant effect on the following screened in Local Plan European sites within the statutory 25 year planning period either alone (I) or in-combination (L): • Severn Estuary SAC and Ramsar (I & L) • Cannock Chase SAC (I) • Pasturefields Salt Marsh SAC (I) • Midlands Meres and Mosses Phase 2 Ramsar (I) The HRA sets out high level feasible mitigation options to ensure no adverse effects including restrictions on abstraction licenses and reviews of hands off flows. Once more detail on preferred plan options is know these will be subject to project level AA.	The HRA states that the WRMP accounts for future water demand. Therefore, potential 'in-combination' effects due to water resource demands from other plans are unlikely. It is considered the WRMP options will not have significant in-combination effects with local plans in respect of water resources. It is likely that the projects which propose upgrades to WwTWs will have positive effects for hydrologically sensitive European sites.

[26] Severn Trent Water (2024) Draft Water Resources Management Plan: Main Narrative. Available at: https://www.severntrent.com/content/dam/dwrmp24-st/STdWRMP24-Main-Narrative.pdf [Accessed: 03/06/24].

[27] Severn Trent Water (2022) Habitats Regulations Assessment: Draft Water Resources Management Plan 2024. Available at: https://www.severntrent.com/content/dam/dwrmp-st-v2/STdWRMP24-HRA-Issue-2-redacted.pdf [Accessed: 03/06/24].

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
		proximity to Newcastle-under-Lyme is located and may contribute to an LSE. Between 2045-2050 and beyond, imports from United Utilities to North Staffs are proposed. This is within close proximity to Newcastle-under-Lyme and may contribute to an LSE. Between 2040-2045 work on a new Water Treatment Works at River Weaver is proposed. The river is part of the Weaver Gowy basin in which Newcastle-under-Lyme is in, and therefore may contribute to an LSE. Between 2040-2045 imports from United Utilities to North Staffs is proposed. This is within close proximity to Newcastle-under-Lyme and may contribute to an LSE.		
Severn Trent Water Drought Plan	The Severn Trent Drought Plan[28] was prepared in 2022.	The Drought Plan outlines the operational steps that will be conducted if we face a drought in the next 5 years. It describes how supplies will be enhanced, demands managed, and environmental impacts minimised. It proposes ongoing leakage reduction measures, water efficiency and monitoring and metering activities.	An HRA was not available online.	It is likely that the Drought Plan will have a positive impact for hydrologically sensitive European sites.

[28] Severn Trent Water (2022) Drought Plan 2022-2027. Available at: https://www.severntrent.com/content/dam/stw-plc/water-resource-zones/drought-plan-2022-2027.pdf [Accessed: 03/06/24].

Organisation	Plan Status	Proposed development – Key elements of the Plan that could cause in-combination effects	Summary of HRA findings	Potential in-combination Likely Significant Effect (LSE)
United Utilities Drought Plan	The Final Drought Plan was prepared in 2022[29].	The Drought Plan outlines the approach to managing water supplies including in times of drought. The Plan sets out drought-management options of four categories: operational actions, demand-side actions, supply-side actions, drought permit or order actions.	The Drought Plan was supported by an HRA[30]. The HRA concludes that none of the proposed schemes will have an LSE on any European site either alone or in-combination.	It is likely that the Drought Plan will have a positive impact for hydrologically sensitive European sites.

[29] United Utilities (2022) Final Drought Plan. Available at: https://www.unitedutilities.com/globalassets/z_corporate-site/about-us-pdfs/final-drought-plan-2022/final-drought-plan-2022.pdf [Accessed: 03/06/24].

[30] Ricardo (2021) Habitats Regulation Assessment of United Utilities' Revised Draft Drought Plan 2022. Available at: https://www.unitedutilities.com/globalassets/z_corporate-site/about-us-pdfs/water-resources/uu-revised-draft-dp-hra-_300721.pdf [Accessed 03/06/24].

Appendix B: European site conservation objectives, qualifying features, threats and pressures

Cannock Chase SAC[1]

Conservation objectives:

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;

- The extent and distribution of qualifying natural habitats
- The structure and function (including typical species) of qualifying natural habitats
- The supporting processes on which the qualifying natural habitats rely.

Qualifying Features:

H4010. Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath
H4030. European dry heaths

Threats and pressures at European site which may be affected by the Local Plan[2]:

- Hydrological changes
- Drainage
- Air pollution – impact of atmospheric nitrogen deposition

Midland Meres and Mosses (Phase 1) Ramsar[3]

Ramsar sites do not have the Conservation Objectives in the same way as SPAs and SACs. Information regarding the designation of Ramsar sites is contained in JNCC Ramsar Information Sheets. Ramsar Criteria are the criteria for identifying Wetlands of International Importance. The relevant criteria and ways in which this site meets the criteria are presented in the table below.

Ramsar Criterion	Justification for the application of each criterion
1	The site comprises a diverse range of habitats from open water to raised bog.
2	Supports a number of rare species of plants associated with wetlands, including five nationally scarce species, together with an assemblage of rare wetland invertebrates (three endangered insects and five other British Red Data Book species of invertebrates).

Threats and Pressures at European site which may be affected by the Local Plan[4]:
No issues have been identified on this site.

[1] Natural England (2018) Cannock Chase SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/6687924741472256 [Date accessed: 24/11/23].

[2] Natural England (2014) Cannock Chase SAC SIP. Available at: http://publications.naturalengland.org.uk/publication/4957799888977920 [Date accessed: 24/11/23].

[3] JNCC (2008) Midland Mires and Mosses Phase 1 Ramsar. Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11043.pdf [Date Accessed: 23/01/24].

[4] JNCC (2008) Midland Mires and Mosses Phase 1 Ramsar. Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11043.pdf [Date Accessed: 23/01/24].

Midland Meres and Mosses (Phase 2) Ramsar[5]

Ramsar sites do not have Conservation Objectives in the same way as SPAs and SACs. Information regarding the designation of Ramsar sites is contained in JNCC Ramsar Information Sheets. Ramsar Criteria are the criteria for identifying Wetlands of International Importance. The relevant criteria and ways in which this site meets the criteria are presented in the table below.

Ramsar Criterion	Justification for the application of each criterion
1	The site comprises a diverse range of habitats from open water to raised bog.
2	Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane *Cicuta virosa* and, elongated sedge *Carex elongata*. Also present are the nationally scarce bryophytes *Dicranum affine* and Sphagnum pulchrum. Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth *Glyphipteryx lathamella*, the caddisfly *Hagenella clathrata* and the sawfly *Trichiosoma vitellinae.*

Threats and pressures at European site which may be affected by the Local Plan[6]:
No issues have been identified on this site.

Pasturefields Saltmarsh SAC[7]

Conservation objectives:
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;

- The extent and distribution of qualifying natural habitats
- The structure and function (including typical species) of qualifying natural habitats
- The supporting processes on which qualifying natural habitats rely.

Qualifying features:
H1340. Inland salt meadows; Inland saltmarshes

Threats and pressures at European site which may be affected by the Local Plan[8]:
No issues have been identified on this site.

Within the Supplementary Notes[9]

- Hydrology: water table and spring flow
- Maintaining integrity of hydrological catchment

[5] JNCC (2008) Midland Mires and Mosses Phase 2 Ramsar. Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11080.pdf [Date Accessed: 23/01/24].

[6] JNCC (2008) Midland Mires and Mosses Phase 2 Ramsar. Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11080.pdf [Date Accessed: 23/01/24].

[7] Natural England (2014) Pasturefields Salt Marsh SAC Conservation Objective. Available at: https://publications.naturalengland.org.uk/publication/6292877810335744 [Date Accessed: 23/01/24].

[8] Natural England (2014) Pasturefields Salt Marsh SAC SIP. Available at: https://publications.naturalengland.org.uk/publication/5513486415167488 [Date Accessed: 23/01/24].

[9] Natural England (2018) Pasturefields Saltmarsh SAC Supplementary Advice. Available at: https://designatedsites.naturalengland.org.uk/TerrestrialAdvicePDFs/UK0012789.pdf [Accessed 20/06/24]

Pasturefields Saltmarsh SAC[7]

- Water quality and quantity
- Water quality: salinity of spring water
- Air quality

Humber Estuary SAC[10]

Conservation objectives:
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;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely
- The populations of qualifying species
- The distribution of qualifying species within the site.

Qualifying features:

H1110. Sandbanks which are slightly covered by sea water all the time; subtidal sandbanks

H1130. Estuaries

H1140. Mudflats and sandflats not covered by seawater at low tide; intertidal mudflats and sandflats

H1150. Coastal lagoons

H1310. Salicornia and other annuals colonising mud and sand; glasswort and other annuals colonising mud and sand

H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

H2110. Embryonic shifting dunes

H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); shifting dunes with marram

H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); dune grassland

H2160. Dunes with *Hippophae rhamnoides*; dunes with sea-buckthorn

S1095. *Petromyzon marinus*; sea lamprey
S1099. *Lampetra fluviatilis*; river lamprey

S1364. *Halichoerus grypus;* grey seal

Threats and pressures at European site which may be affected by the Local Plan[11]:

- Water pollution
- Public access / disturbance
- Air pollution – impact of atmospheric nitrogen deposition

[10] Natural England (2018) Humber Estuary SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/5009545743040512 [Date accessed: 23/01/24].

[11] Natural England (2015) Humber Estuary SIP. Available at: http://publications.naturalengland.org.uk/file/5730884670980096 [Date accessed: 23/01/24].

Humber Estuary SPA[12]

Conservation objectives:

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
- The distribution of the qualifying features within the site.

Qualifying features:

A021 *Botaurus stellaris*; Great bittern (Non-breeding)
A021 *Botaurus stellaris*; Great bittern (Breeding)
A048 *Tadorna tadorna*; Common shelduck (Non-breeding)
A081 *Circus aeruginosus*; Eurasian marsh harrier (Breeding)
A082 *Circus cyaneus*; Hen harrier (Non-breeding)
A132 *Recurvirostra avosetta*; Pied avocet (Non-breeding)
A132 *Recurvirostra avosetta*; Pied avocet (Breeding)
A140 *Pluvialis apricaria*; European golden plover (Non-breeding)
A143 *Calidris canutus*; Red knot (Non-breeding)
A149 *Calidris alpina alpina*; Dunlin (Non-breeding)
A151 *Philomachus pugnax*; Ruff (Non-breeding)
A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding)
A157 *Limosa lapponica*; Bar-tailed godwit (Non-breeding)
A162 *Tringa totanus*; Common redshank (Non-breeding)
A195 *Sterna albifrons*; Little tern (Breeding)
Waterbird assemblage

Humber Estuary Ramsar[13]

Ramsar sites do not have Conservation Objectives in the same way as SPAs and SACs. Information regarding the designation of Ramsar sites is contained in JNCC Ramsar Information Sheets. Ramsar Criteria are the criteria for identifying Wetlands of International Importance. The relevant criteria and ways in which this site meets the criteria are presented in the table below.

Ramsar Criterion	Justification for the application of each criterion
1	The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. It is a large macro-tidal coastal plain estuary with high suspended sediment loads, which feed a dynamic and rapidly changing system of accreting and eroding intertidal and subtidal mudflats, sandflats, saltmarsh and reedbeds. Examples of both

[12] Natural England (2019) Humber Estuary SPA Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/5382184353398784 [Date accessed: 23/01/24].

[13] JNCC (2007) Ramsar Information Sheet: Humber Estuary. Available at: https://rsis.ramsar.org/RISapp/files/RISrep/GB663RIS.pdf [Date accessed: 23/01/24].

Ramsar Criterion	Justification for the application of each criterion
	strandline, foredune, mobile, semi-fixed dunes, fixed dunes and dune grassland occur on both banks of the estuary and along the coast. The estuary supports a full range of saline conditions from the open coast to the limit of saline intrusion on the tidal rivers of the Ouse and Trent. Wave exposed sandy shores are found in the outer/open coast areas of the estuary. These change to the more moderately exposed sandy shores and then to sheltered muddy shores within the main body of the estuary and up into the tidal rivers. The lower saltmarsh of the Humber is dominated by common cordgrass Spartina anglica and annual glasswort Salicornia communities. Low to mid marsh communities are mostly represented by sea aster *Aster tripolium*, common saltmarsh grass *Puccinellia maritima* and sea purslane *Atriplex portulacoides* communities. The upper portion of the saltmarsh community is atypical, dominated by sea couch *Elytrigia atherica* (Elymus pycnanthus) saltmarsh community. In the upper reaches of the estuary, the tidal marsh community is dominated by the common reed Phragmites australis fen and sea club rush *Bolboschoenus maritimus* swamp with the couch grass *Elytrigia repens* (*Elymus repens*) saltmarsh community. Within the Humber Estuary Ramsar site there are good examples of four of the five physiographic types of saline lagoon.
3	The Humber Estuary Ramsar site supports a breeding colony of grey seals Halichoerus grypus at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad *Bufo calamita*.
5	Assemblages of international importance: 153,934 waterfowl, non-breeding season (5 year peak mean 1996/97-2000/2001)
6	Species/populations occurring at levels of international importance. Qualifying species/populations (as identified at designation): Species with peak counts in winter: • Common shelduck, *Tadorna tadorna*, NW Europe - 4464 individuals, representing an average of 1.5% of the population (5 year peak mean 1996/7-2000/1) • Eurasian golden plover, *Pluvialis apricaria*, altifrons subspecies, NW Europe, W Continental Europe, NW Africa population - 30,709 individuals, representing an average of 3.3% of the GB population (5 year peak mean 1996/7-2000/1) • Red Knot, *Calidris canutus* islandica subspecies - 28165 individuals, representing an average of 6.3% of the population (5 year peak mean 1996/7-2000/1) • Dunlin, *Calidris alpina alpina*, Europe - 22222 individuals, representing an average of 1.7% of the population (5 year peak mean 1996/7-2000/1) • Black-tailed godwit, *Limosa limosa*, islandica subspecies - 1,113 individuals, wintering, representing an average of 3.2% of the population (5 year peak mean 1996/7-2000/1) • Bar-tailed godwit, *Limosa lapponica*, lapponica subspecies - 2,752 individuals, wintering, representing an average of 2.3% of the population (5 year peak mean 1996/7-2000/1) • Common redshank, *Tringa totanus totanus* - 4632 individuals, representing an average of 3.6% of the population (5 year peak mean 1996/7- 2000/1)
8	The Humber Estuary acts as an important migration route for both river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus* between coastal waters and their spawning areas.

Threats and Pressures at European site which may be affected by the Local Plan:

- Water pollution (domestic sewage)
- Recreational / tourism disturbance
- Coastal squeeze

Severn Estuary SAC[14]

Conservation objectives:

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;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species
- The distribution of qualifying species within the site.

Qualifying features:

H1110. Sandbanks which are slightly covered by sea water all the time; subtidal sandbanks

H1130. Estuaries

H1140. Mudflats and sandflats not covered by seawater at low tide; intertidal mudflats and sandflats

H1170. Reefs

H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); Atlantic salt meadows

S1095. *Petromyzon marinus*; Sea lamprey

S1099. *Lampetra fluviatilis*; River lamprey

S1103. *Alosa fallax*; Twaite shad

Threats and pressures at European site which may be affected by the Local Plan[15]:

- Public access / disturbance
- Impact of development
- Water pollution
- Air pollution – impact of atmospheric nitrogen deposition

Severn Estuary SPA[16]

Conservation objectives:

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

[14] Natural England (2019) Severn Estuary SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/6377265718099968 [Date accessed: 23/01/24].

[15] Natural England (2015) Severn Estuary SIP. Available at: http://publications.naturalengland.org.uk/file/4856107648417792 [Date accessed: 23/01/24].

[16] Natural England (2019) Severn Estuary SPA Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/6288530213175296 [Date accessed: 23/01/24].

Severn Estuary SPA[16]

- 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
- The distribution of the qualifying features within the site.

Qualifying features:

A037 *Cygnus columbianus bewickii*; Bewick's swan (Non-breeding)
A048 *Tadorna tadorna*; Common shelduck (Non-breeding)
A051 *Anas strepera*; Gadwall (Non-breeding)
A149 *Calidris alpina alpina*; Dunlin (Non-breeding)
A162 *Tringa totanus*; Common redshank (Non-breeding)
A394 *Anser albifrons albifrons*; Greater white-fronted goose (Non-breeding)
Waterbird assemblage

Threats and pressures at European site which may be affected by the Local Plan[17]:

Public access / disturbance
Impacts of development
Water pollution
Air pollution – impact of atmospheric nitrogen deposition

Severn Estuary Ramsar[18]

Ramsar sites do not have Conservation Objectives in the same way as SPAs and SACs. Information regarding the designation of Ramsar sites is contained in JNCC Ramsar Information Sheets. Ramsar Criteria are the criteria for identifying Wetlands of International Importance. The relevant criteria and ways in which this site meets the criteria are presented in the table below.

Ramsar Criterion	Justification for the application of each criterion
1	Due to immense tidal range (second-largest in world), this affects both the physical environment and biological communities.
3	Due to unusual estuarine communities, reduced diversity and high productivity.
4	This site is important for the run of migratory fish between sea and river via estuary. Species include: Salmon *Salmo salar* Sea trout *S. trutta* Sea lamprey *Petromyzon marinus* River lamprey *Lampetra fluviatilis* Allis shad *Alosa alosa* Twaite shad *A. fallax* Eel Anguilla *anguilla* It is also of particular importance for migratory birds during spring and autumn.
5	Assemblages of international importance: Species with peak counts in winter:

[17] Natural England (2015) Severn Estuary SIP. Available at: https://publications.naturalengland.org.uk/file/4856107648417792 [Accessed: 24/06/24].

[18] JNCC (2008) Ramsar Information Sheet: UK11081 Severn Estuary. Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11081.pdf [Accessed: 23/01/24].

Ramsar Criterion	Justification for the application of each criterion
	• 70919 waterfowl (5 year peak mean 1998/99-2002/2003)
6	Species/populations occurring at levels of international importance. Qualifying species/populations (as identified at designation): Species with peak counts in winter: • Tundra swan, *Cygnus columbianus bewickii*, NW Europe - 229 individuals, representing an average of 2.8% of the GB population (5 year peak mean 1998/9-2002/3) • Greater white-fronted goose, *Anser albifrons albifrons*, NW Europe - 2076 individuals, representing an average of 35.8% of the GB population (5 year peak mean for 1996/7-2000/01) • Common shelduck, *Tadorna tadorna*, NW Europe - 3223 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3) • Gadwall, *Anas strepera strepera*, NW Europe - 241 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3) • Dunlin, *Calidris alpina alpina*, W Siberia/W Europe - 25082 individuals, representing an average of 1.8% of the population (5 year peak mean 1998/9-2002/3) • Common redshank, *Tringa totanus totanus* - 2616 individuals, representing an average of 1% of the population (5 year peak mean 1998/9- 2002/3) Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species regularly supported during the breeding season: • Lesser black-backed gull, *Larus fuscus graellsii*, W Europe/Mediterranean/W Africa - 4167 apparently occupied nests, representing an average of 2.8% of the breeding population (Seabird 2000 Census) Species with peak counts in spring/autumn: • Ringed plover, *Charadrius hiaticula*, Europe/Northwest Africa - 740 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3) Species with peak counts in winter: • Eurasian teal, *Anas crecca*, NW Europe - 4456 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3) • Northern pintail, *Anas acuta,* NW Europe - 756 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9- 2002/3)
8	The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel Anguilla *anguilla* use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad *Alosa alosa* and twaite shad *A. fallax* which feed on mysid shrimps in the salt wedge.

Threats and pressures at European site which may be affected by the Local Plan:

- Recreational / tourism disturbance.

West Midlands Mosses SAC[19]

Conservation objectives:

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:

- The extent and distribution of qualifying natural habitats
- The structure and function (including typical species) of qualifying natural habitats, and
- The supporting processes on which qualifying natural habitats rely

Qualifying features:

H3160. Natural dystrophic lakes and ponds; Acid peat-stained lakes and ponds
H7140. Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking' surface

Threats and pressures at European site which may be affected by the Local Plan[20]:

- Water pollution
- Hydrological changes
- Air pollution – impact of atmospheric nitrogen deposition

Mersey Estuary SPA[21]

Conservation objectives:

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.

Qualifying features:

A048 Tadorna tadorna; Common shelduck (Non-breeding)
A052 Anas crecca; Eurasian teal (Non-breeding)
A054 Anas acuta; Northern pintail (Non-breeding)
A140 Pluvialis apricaria; European golden plover (Non-breeding)
A149 Calidris alpina alpina; Dunlin (Non-breeding)
A156 Limosa limosa islandica; Black-tailed godwit (Non-breeding)
A162 Tringa totanus; Common redshank (Non-breeding)
Waterbird assemblage

Threats and pressures at European site which may be affected by the Local Plan[22]:

[19] Natural England (2014) West Midland Mosses SAC Conservation Objective. Available at: https://publications.naturalengland.org.uk/publication/6449667604742144 [Date Accessed: 23/01/24].

[20] Natural England (2014) West Midland Mosses SAC SIP. Available at: https://publications.naturalengland.org.uk/publication/5422476326600704 [Date accessed: 23/01/24].

[21] Natural England (2014) Mersey Estuary SPA Conservation Objectives. Available at: https://publications.naturalengland.org.uk/publication/5790848037945344 [Date Accessed: 23/01/24].

[22] Natural England (2014) Mersey Estuary SPA SIP. Available at: https://publications.naturalengland.org.uk/publication/6273450410770432 [Date Accessed:23/01/24].

Mersey Estuary SPA[21]

- Public Access / Disturbance

Mersey Estuary Ramsar[23]

Ramsar sites do not have Conservation Objectives in the same way as SPAs and SACs. Information regarding the designation of Ramsar sites is contained in JNCC Ramsar Information Sheets. Ramsar Criteria are the criteria for identifying Wetlands of International Importance. The relevant criteria and ways in which this site meets the criteria are presented in the table below.

Ramsar Criterion	Justification for the application of each criterion
5	Species with peak counts in winter: • 89576 waterfowl (5 year peak mean 1998/99-2002/2003)
6	Species with peak counts in spring/autumn: • Common shelduck , Tadorna tadorna, NW Europe 12676 individuals, representing an average of 4.2% of the population (5 year peak mean 1998/9-2002/3) • Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe 2011 individuals, representing an average of 5.7% of the population (5 year peak mean 1998/9-2002/3) • Common redshank , *Tringa totanus totanus*, 6651 individuals, representing an average of 2.6% of the population (5 year peak mean 1998/9-2002/3) Species with peak counts in winter: • Eurasian teal , *Anas crecca*, NW Europe 10613 individuals, representing an average of 2.6% of the population (5 year peak mean 1998/9-2002/3) • Northern pintail , *Anas acuta*, NW Europe 565 individuals, representing an average of 2% of the GB population (5 year peak mean 1998/9- 2002/3) • Dunlin , Calidris *alpina alpina*, W Siberia/W Europe 48364 individuals, representing an average of 3.6% of the population (5 year peak mean 1998/9-2002/3) Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually.

Threats and pressures at European site which may be affected by the Local Plan:

- None identified.

Peak District Dales SAC[24]

Conservation objectives:

[23] JNCC (2008) Ramsar Information Sheet: UK11081 Mersey Estuary. Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11041.pdf [Date Accessed:23/01/24].

[24] Natural England (2018) Peak District Dales SAC Conservation Objective. Available at: https://publications.naturalengland.org.uk/file/6491879046905856 [Date Accessed: 23/06/24].

Peak District Dales SAC[24]

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:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

Qualifying features:
H4030. European dry heaths
H6130. Calaminarian grasslands of the Violetalia calaminariae; Grasslands on soils rich in heavy metals
H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia); Dry grasslands and scrublands on chalk or limestone
H7230. Alkaline fens; Calcium-rich springwater-fed fens
H8120. Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii); Base-
rich scree
H8210. Calcareous rocky slopes with chasmophytic vegetation; Plants in crevices in base-rich rocks
H9180. Tilio-Acerion forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes*
S1092. Austropotamobius pallipes; White-clawed (or Atlantic stream) crayfish
S1096. Lampetra planeri; Brook lamprey
S1163. Cottus gobio; Bullhead

Threats and pressures at European site which may be affected by the Local Plan[25]:

- Water pollution
- Inappropriate water levels
- Hydrological changes
- Air pollution – impact of atmospheric nitrogen deposition
- Public access /disturbance

Peak District Moors (South Pennine Moors Phase 1) SPA[26]

Conservation objectives:
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.

[25] Natural England (2014) Peak District Dales SAC SIP. Available at: https://publications.naturalengland.org.uk/file/6580695786848256 [Accessed: 23/06/24].

[26] Natural England (2019) South Pennine Moors SAC Conservation Objective. https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://publications.naturalengland.org.uk/file/4730802567118848&ved=2ahUKEwi6tIbLie2GAxXlUUEAHWbwDDcQFnoECA4QAQ&usg=AOvVaw06jYBXfC8qpsuWl_p4jnax [Accessed: 23/06/24].

Peak District Moors (South Pennine Moors Phase 1) SPA[26]

Qualifying features:

A098 Falco columbarius; Merlin (Breeding)
A140 Pluvialis apricaria; European golden plover (Breeding)
A222 Asio flammeus; Short-eared owl (Breeding)

Threats and pressures at European site which may be affected by the Local Plan[27]:

- Hydrological changes
- Air pollution – impact of atmospheric nitrogen deposition
- Public access/disturbance

South Pennine Moors SAC[28]

Conservation objectives:

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;

- The extent and distribution of the qualifying natural habitats
- The structure and function (including typical species) of the qualifying natural habitats
- The supporting processes on which the qualifying natural habitats rely

Qualifying features:

H4010. Northern Atlantic wet heaths with Erica tetralix; Wet heathland with cross-leaved heath
H4030. European dry heaths
H7130. Blanket bogs*
H7140. Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking`
surface
H91A0. Old sessile oak woods with Ilex and Blechnum in the British Isles

Threats and pressures at European site which may be affected by the Local Plan[29]:

- Hydrological changes
- Air pollution
- Public access/disturbance

[27] Natural England (2014) Peak District Dales SPA SIP. Available at: https://publications.naturalengland.org.uk/file/6580695786848256 [Accessed: 23/06/24].

[28] Natural England (2018) South Pennine Moors SAC Conservation Objective. Available at: https://publications.naturalengland.org.uk/file/4877034534993920 [Accessed: 23/06/24].

[29] Natural England (2014) South Pennine Moors SAC SIP. Available at: https://publications.naturalengland.org.uk/file/6518808585961472 [Accessed: 23/06/24].

Appendix C: Screening of Regulation 19 Publication Draft Local Plan Policies

The following section of **Appendix C** provides a screening assessment of policies which comprise the Regulation 19 Draft Local Plan.

Chapter 1: Consultation (not part of the Plan)

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
		This chapter provides administrative text, background and context for the Local Plan. It sets out the consultation process informing the Plan and response.	Administrative text	Screen out

Chapter 2: Introduction

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
		This chapter provides introductory text, background and context for the Local Plan. It sets out a focus on healthy, active and safe communities and Borough growth.	Administrative text	Screen out

Chapter 3: Context

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
		This chapter provides administrative text, background and context for the Local Plan.	Administrative text	Screen out

Chapter 4: Strategic Objectives for the Borough

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Vision for the Borough		The vision provides a general statement of policy / general aspirations for the Borough over the Plan period. It sets out aspirations for sustainable development with a focus on healthy, active and safe communities and Borough growth.	Category A	Screen out
Strategic Objectives for the Borough		Strategic objectives central to achieving the delivery of the vision for the Borough centred are around the community, the economy and the environment. These are general aspirations for the Plan.	Category A	Screen out

Chapter 5: Planning for Sustainable Development

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy PSD 1:	Overall Development Strategy	This policy sets out the requirement for 8,000 dwellings to be delivered over the plan period in the Borough (between 2020 – 2040, at 400 dwellings per annum). This policy sets out the required employment development in line with economic forecasts for job growth (63ha of employment land by 2040). This includes the allocation of two strategic employment sites. Development within the Plan area (from the Local Plan alone and the Local Plan in-combination with development in neighbouring local plan areas (see Appendix A) has the potential cumulatively to result in the following LSEs: • Air quality (in-combination LSEs on the Midland Meres and Mosses Phase 2 Ramsar site); • Water quality and quantity (in-combination LSEs on a number of SACs, SPAs and Ramsar sites); and • Recreational pressure (in-combination LSEs on the Midland Meres and Mosses Phase 1 and Phase 2 Ramsar sites).	Category L	Screen in
Policy PSD 2:	Settlement Hierarchy	This policy sets out the location for development in the Plan area in terms of the hierarchy of settlements including the strategic centre, urban centre (Kidsgrove), rural centres, and other settlements and rural areas. These are general visions for the Borough and therefore will not lead to development or any change which may have an LSE on any European site.	Category A	Screen out
Policy PSD 3:	Distribution of Development	This policy sets out the location for the distribution of development in the Plan area and identifies the dwellings allocated in the named settlements at a minimum of 8,000 dwellings in the Borough 2020-2040 (400 dwellings per annum). Development within the Plan area (from the Local Plan alone and the Local Plan in-combination with development in neighbouring local plan areas (see Appendix A) has the potential cumulatively to result in the following LSEs:	Category L	Screen in

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
		• Air quality (in-combination LSEs on the Midland Meres and Mosses Phase 2 Ramsar site); • Water quality and quantity (in-combination LSEs on a number of SACs, SPAs and Ramsar sites); and • Recreational pressure (in-combination LSEs on the Midland Meres and Mosses Phase 1 and Phase 2 Ramsar sites).		
Policy PSD 4:	Development Boundaries and the Open Countryside	This policy defines development boundaries for the Strategic Centre, Urban Centre and Rural Centres and sets out what development will be supported within these areas and open countryside outside these boundaries. It will not lead to development or any change which may have an LSE on any European site.	Category B	Screen out
Policy PSD 5:	Green Belt	This policy defines the Green Belt boundary. It deems development of the Green Belt inappropriate unless it meets the exceptions outlined in the NPPF. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy PSD 6:	Health and Wellbeing	This policy sets out the Council's support for development which promotes safe, healthy, fulfilling and active lifestyles. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy PSD 7:	Design	This policy requires all new development to be designed in accordance with national and local design guides. Developments must positively contribute to an area. It will not lead to development or any change which may have an LSE on any European site.	Category B	Screen out

Chapter 6: Climate and Renewable Energy

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy CRE 1:	Climate Change	This policy requires development to be designed in accordance with the energy and heat hierarchy to achieve energy and water efficiency and be resilient to the effects of climate change. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy CRE 2:	Renewable Energy	This policy requires development proposals to optimise the use of decentralised, renewable or low carbon energy sources. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out

Chapter 7: Housing

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy HOU 1:	Affordable Housing	This policy sets out the requirements of an affordable housing mix to address local needs. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy HOU 2:	Housing Mix and Density	This policy sets out the requirements around housing mix, density and standards within the settlement hierarchy. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy HOU 3:	Housing Standards	This policy sets out the requirements for internal space standards for all new residential homes. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy HOU 4:	Gypsy, Travellers and Travelling Showpeople	This policy allocates sites for Gypsy and Traveller and Travelling Showpeople use. It also provides a list of criteria which Gypsy and Traveller and Travelling Showpeople development must meet. Development within the Plan area (from the Local Plan alone and the Local Plan in-combination with development in neighbouring local plan areas (see Appendix A) has the potential cumulatively to result in the following LSEs: • Air quality (in-combination LSEs on the Midland Meres and Mosses Phase 2 Ramsar site);	Category L	Screen in

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
		• Water quality and quantity (in-combination LSEs on a number of SACs, SPAs and Ramsar sites); and • Recreational pressure (in-combination LSEs on the Midland Meres and Mosses Phase 1 and Phase 2 Ramsar sites).		
Policy HOU 5:	Specialist Needs Housing	This policy sets out the requirements for new care homes and specialist accommodation proposals. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy HOU 6:	Self Build and Custom Dwellings	This policy sets out a proposal for self-build and custom-build housing in compliance with Local Plan policies and the NPPF. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy HOU 7:	Homes in Multiple Occupation	This policy sets out the requirements for managing houses in multiple occupation (HMOs). It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy HOU 8:	Rural and First Homes Exception Sites	This policy sets out the requirements for proposals to support the delivery of affordable housing on rural exception sites. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy HOU 9:	Community Led Exception Sites	This policy sets out the requirements for proposals to support the delivery of meeting the housing need through community-led means. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy HOU 10:	Extensions, Alterations and Relationships between Dwellings	This policy sets out the requirements for extensions and alterations to existing dwellings. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy HOU 11:	Tandem or Backland development	This policy sets out the requirements for tandem or backland development proposals to optimise land use. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out

Chapter 8: Employment

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy EMP 1:	Employment	This policy allocates sites for employment use (the site allocations chapter of the Local Plan) and provides criteria for this development. Development within the Plan area (from the Local Plan alone and the Local Plan in-combination with development in neighbouring local plan areas (see Appendix A) has the potential cumulatively to result in the following LSEs: • Air quality (in-combination LSEs on the Midland Meres and Mosses Phase 2 Ramsar site); and • Water quality and quantity (in-combination LSEs on a number of SACs, SPAs and Ramsar sites).	Category L	Screen in
Policy EMP 2:	Existing Employment Sites	This policy sets out criteria for the alternative use of existing employment land. The policy sets out mitigation practices to ensure loss of employment land provides additional benefits to the community. It will not lead to development or any change which may have an LSE on any European site.	Category B	Screen out
Policy EMP 3:	Tourism	This policy sets out proposals for new and enhanced tourist development and accommodation which will be supported by the Council and a set of criteria such development must meet. These are general visions for the Borough and therefore will not lead to development or any change which may have an LSE on any European site.	Category B	Screen out

Chapter 9: Retail

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy RET 1:	Retail	This policy sets out the retail hierarchy and requirements for development within these areas. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy RET 2:	Shop Fronts, Advertisements, New Signage	This policy sets out the requirements of shop fronts, advertisements, and new signage to ensure amenity and public safety are maintained and the character, function, appearance, and quality of the area is improved. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy RET 3:	Restaurants, Cafes, Pubs and Hot Food Takeaways	This policy sets out the requirements of restaurants, cafes, drinking establishments and hot food takeaways to promote healthy communities and lifestyles. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy RET 4:	Newcastle-under-Lyme Town Centre	This policy sets out the Council's support for redevelopment of sites across the Town Centre and wider borough to improve its vitality, including the Knutton Village Masterplan. The Masterplan includes provision of new homes. Development within the Plan area (from the Local Plan alone and the Local Plan in-combination with development in neighbouring local plan areas (see Appendix A) has the potential cumulatively to result in the following LSEs: • Air quality (in-combination LSEs on the Midland Meres and Mosses Phase 2 Ramsar site); • Water quality and quantity (in-combination LSEs on a number of SACs, SPAs and Ramsar sites); and • Recreational pressure (in-combination LSEs on the Midland Meres and Mosses Phase 1 and Phase 2 Ramsar sites).	Category L	Screen in
Policy RET 5:	Kidsgrove Town Centre	This policy sets out proposals for improving and regenerating Kidsgrove Town Centre. These are general visions for the Borough and relate specifically to visual and public realm improvements only. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out

Chapter 10: Infrastructure and Transport

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy IN 1:	Infrastructure	This policy sets out infrastructure visions in the Borough to accommodate and support development. It will not lead to development or any change which may have an LSE on any European site. The allocation at Madeley High School is considered in the allocation screening appendix (Appendix C).	Category F	Screen out
Policy IN 2:	Transport and Accessibility	This policy sets out the criteria for sustainable transport infrastructure in new developments and requirements for Transport Assessments and Travel Plans. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy IN 3:	Access and Parking	This policy sets out the requirements for appropriate car parking provision and design. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy IN 4:	Cycleways, Bridleways and Public Rights of Way	This policy sets out proposals for walking, cycling and riding infrastructure within new development sites. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy IN 5:	Provision of Community Facilities	This policy sets out the requirements for the development of community facilities. This policy aims to ensure community facilities are adequately distributed. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy IN 6:	Telecommunications Development	This policy sets out the requirements of telecommunications development proposals and encourages equal and sustainable access to high quality communication services. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy IN 7:	Utilities	This policy sets out the requirements for sufficient, well-planned and sustainable infrastructure capacity to ensure sustainable growth of the Borough and protect sensitive areas. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out

Chapter 11: Sustainable Environment

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy SE1:	Pollution and Air Quality	This policy sets out environmental protection requirements for new development specifically in relation air quality and pollution. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out
Policy SE2:	Land Contamination	This policy sets out legislation on contaminated land and the exceptions and requirements to ensure human health, ecosystems and water quality are maintained. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out
Policy SE3:	Flood Risk Management	This policy sets out the requirements for Flood Risk Assessments (FRAs) and proposes proactive management to ensure existing developments are protected and new developments are resilient against floods. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out
Policy SE4:	Sustainable Drainage Systems	This policy sets out the hierarchical requirements for development proposals to manage flood risk and water resources. The policy aims to protect developments and the environment and improve the borough's resilience to climate change. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out
Policy SE5:	Water Resources and Water Quality	This policy sets out the requirements for development proposals to ensure the protection of water resources and quality. There must be no deterioration in water quality as a result of development. The objectives of the Water Framework Directive (WFD) and relevant water frameworks and features (e.g. Groundwater Source Protection Zones (SPZs)) must be considered. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy SE6:	Open Space, Sports and Leisure Provision	This policy requires new residential developments to provide, enhance and maintain green open space provision. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy SE7:	Biodiversity Net Gain	This policy requires development to deliver a minimum of 10% measurable net gain of biodiversity to be maintained for at least 30 years. The policy sets out the BNG hierarchy. It will not lead to development or any change which may have an adverse LSE on any European site.	Category D	Screen out
Policy SE8:	Biodiversity and Geodiversity	This policy aims to protect and enhance biodiversity and geodiversity and sets out the mitigation hierarchy. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site.	Category M	Screen in
Policy SE9:	Historic Environment	This policy sets out the requirements for development to conserve and enhance the historic environment and heritage. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out
Policy SE10:	Landscape	This policy is intended to protect and enhance the district's unique landscape character. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out
Policy SE11:	Trees, hedgerows and woodland	This policy sets out the requirements of development proposals to enhance and protect existing trees, hedgerows and woodlands to provide environmental, economic, social, and climatic benefits. This should be supported by surveys and assessments. It is a plan-wide environmental protection policy and will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out
Policy SE12:	Amenity	This policy sets out the requirements of current and new development proposals to ensure current amenities are not harmed and encourages a high quality living environment. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy SE13:	Soil and Agricultural Land	This policy sets out the proposals and mitigation strategies to protect soils and best and most versatile (BMV) agricultural land as a valuable resource that supports essential natural functions. It outlines the exceptions and requirements of development on BMV land. It will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out
Policy SE14:	Green and Blue Infrastructure	This policy sets out the requirements of development proposals for multifunctional Green and Blue infrastructure to support the Borough's social and environmental development. It will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out

Chapter 12: Rural Matters

Policy number	Policy name	Justification: Activities that may result in an LSE on a European site	Screening category	HRA screening
Policy RUR 1:	Rural Economy	This policy sets out the requirements of employment developments outside settlement boundaries. It aims to enable the sustainable growth of rural businesses. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy RUR 2:	Rural Workers Dwellings	This policy sets out the requirements for new dwelling developments outside settlement boundaries. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy RUR 3:	Extensions and Alterations to Buildings Outside of Settlement Boundaries	This policy sets out the requirements for extensions and alterations of existing buildings outside settlement boundaries. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy RUR 4:	Replacement Buildings Outside of Settlement Boundaries	This policy sets out the requirements for replacing existing dwellings outside settlement boundaries. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out
Policy RUR 5:	Re-Use of Rural Buildings for Residential Use	This policy sets out the requirements for re-using redundant and disused buildings outside settlement boundaries. It will not lead to development or any change which may have an LSE on any European site.	Category F	Screen out

Chapter 13: Site Allocations

Policy number	Policy name	Justification: Activities that may result in a LSE on a habitats site	Screening category	HRA screening
Policy SA 1:	General Requirements	This policy sets out a list of requirements for all site allocations. A number of these provide plan wide environmental protection. It will not lead to development or any change which may have an LSE on any European site.	Category D	Screen out
Chapter 13	n/a	This chapter provides potential strategic site allocations which the council will be consulting on as part of the Regulation 19 consultation. These are screened in detail in Appendix D.	See Appendix D	See Appendix C

Chapter 14: Glossary

Policy number	Policy name	Justification: Activities that may result in a LSE on a habitats site	Screening category	HRA screening
Glossary	n/a	This chapter provides a glossary of key terms detailed in the Local Plan.	Category A	Screened out

Appendix D: Screening of Regulation 19 Publication Draft Local Plan Allocations

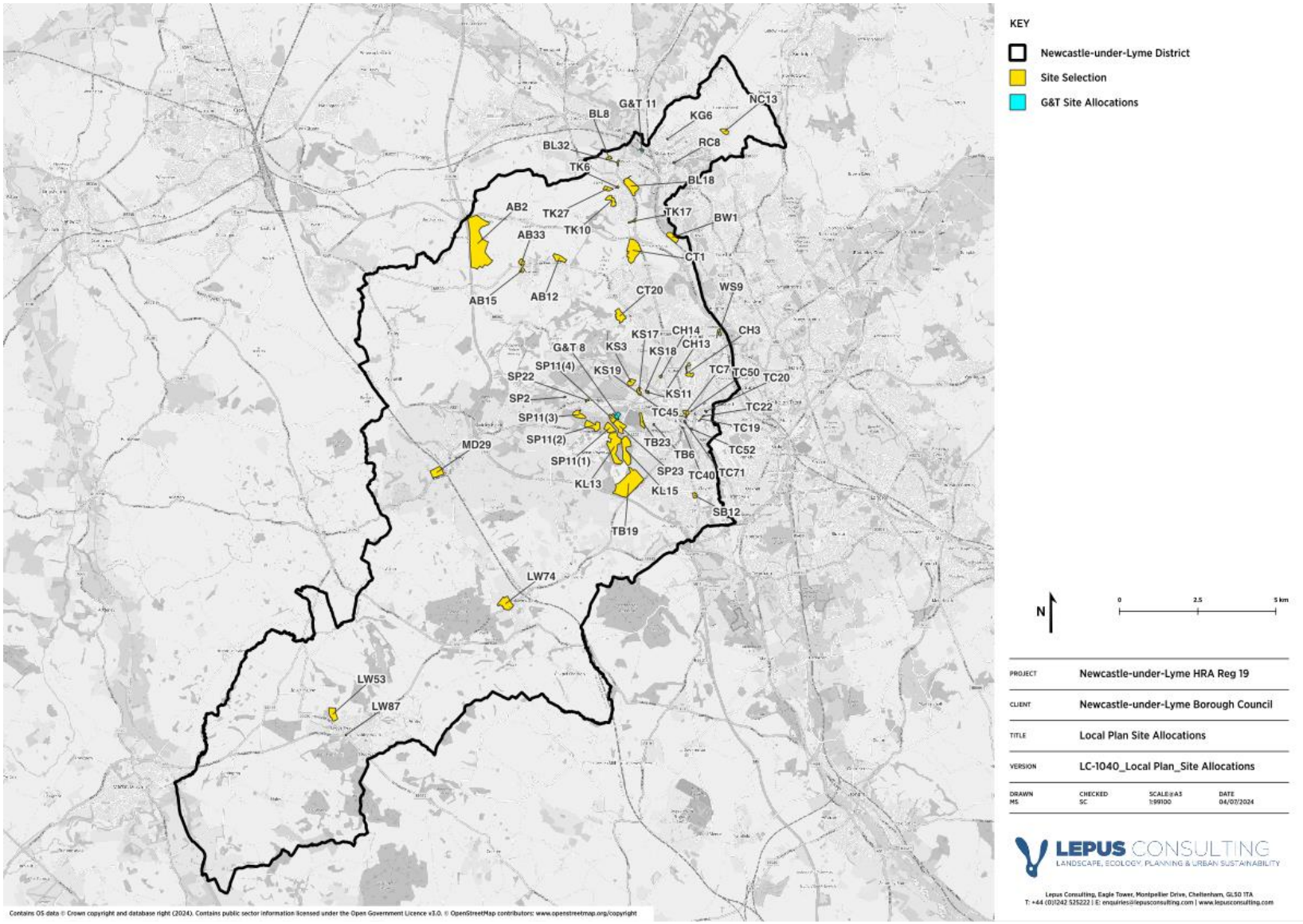

Figure D.1: *Local Plan Site Allocations Map*

Table Notes:

The following allocations are set out in Chapters 13 of the Regulation 19 Draft Local Plan.

Air Quality LSEs: All site allocations set out in the Local Plan have the potential to act cumulatively to increase traffic flows on the local and wider road network. An increase in traffic related emissions has the potential to change air quality. Applying Natural England's screening thresholds, air quality likely significant effects (LSEs) are considered possible at those European sites listed in **Section 3.4** of the Regulation 19 HRA report. Growth at all allocations (listed below) has the potential to contribute towards a change in air quality, in combination with other plans and projects (see **Appendix A**). All allocations below have therefore been screened in under Category L.

Water Quality and Quantity LSEs: All site allocations set out in the Local Plan (including those listed below) have the potential to act in combination with one another to increase the quantity of water required for treatment at Wastewater Treatment Works (WwTWs). This may result in the deterioration of downstream water quality. In addition, an increase in water demand from new development increase demand for water supply which may also affect water sensitive European sites. Taking a precautionary approach, hydrology impacts from the combined effect of all developments together, acting in-combination with other plans and projects (see Appendix A), have the potential to result in LSEs at hydrologically connected European sites listed in **Section 3.5** of the Regulation 19 HRA report. Water quality and quantity impacts at all allocations listed below have therefore been screened in under Category L.

Recreational pressure LSEs: Whilst no visitor survey has been undertaken to define a formal recreational ZoI for any of the European sites screened into the HRA process, as noted in **Section 3.6** of the main HRA report, a precautionary distance of 15km has been applied to the scoping of European sites. Scoping set out in **Section 3.6** also analysed public access at European sites, provision of car parking and distance from the Plan area. The scoping assessment identified two European sites within 15km of the Plan area for further consideration in the HRA screening process in terms of the recreational pathways of impact. These include the Midland Meres and Mosses Phase 1 Ramsar and Midland Meres and Mosses Phase 2 Ramsar. The assessment below provides information on the proximity of each allocation to these European sites applying a precautionary 5km buffer zone. This buffer distance represents research undertaken on the typical distance visitors travelled to European sites (see **Section 3.6** of the main HRA report) noting the scale of the Midland Meres and Mosses Phase 1 and 2 Ramsar sites, lack of facilities, parking and advertisement.

Urbanisation effects LSEs: Urbanisation effects include impacts such as noise disturbance, lighting effects, cat predation, fly-tipping, wildfire, littering, vandalism and fragmentation of habitat. A buffer of 400m has been applied to identify potential urbanisation effects on all European sites.

Table D.1 screens urbanisation and recreational LSEs for each potential allocation.

Table D.1: Screening summary for sites allocations set out in Chapter 13 of the Local Plan

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
Audley				
AB2 (Strategic Location)	Land at Junction 16 of the M6 (adjoining corner of A500 and M6 southbound)	Gross 78 ha site - Approx. 22 ha employment use Employment will comprise E(g) (i), E(g)(ii), E(g)(iii), B2 and B8 uses. Where ancillary non-employment uses are proposed, these will primarily support the onsite businesses, research and development and industrial processes.	This allocation is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This site is a potential employment allocation and therefore will not have a recreational LSE.

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
AB12	Land East of Diglake Street, Bignall End	Approx. 125 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
AB15	Land North of Vernon Avenue, Audley	Approx. 33 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This site is located within 5km of the Midland Meres and Mosses Phase 1 and Phase 2 Ramsar sites which are underpinned by the Black Firs and Cranberry Bog SSSI Oakhanger Moss SSSI
AB33	Land off Nantwich Road / Park Land, Audley	Approx. 55 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This site is located within 5km of the Midland Meres and Mosses Phase 1 and Phase 2 Ramsar sites which are underpinned by the Black Firs and Cranberry Bog SSSI Oakhanger Moss SSSI
Bradwell				
BW1	Chatterley Valley, Lowlands Road, Bradwell	Approx. 6.4 ha employment use Uses as defined by use classes E(g)(i), E(g)(ii), E(g)(iii), B2 and B8. Anticipated that the site will be	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
		developed as a high calibre B8 logistics site.		pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
Crackley and Red Street				
CT1	Land at Red Street and High Carr Farm, Chesterton	Approx. 530 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
Cross Heath				
CH13	Castletown Grange, Douglas Road, Cross Heath	Approx. -7 dwellings (rationalisation of site)	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
CH14	Maryhill Day Centre, Wilmott Drive, Cross Heath	Approx. 30 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
Holditch and Chesterton				

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
CT20	Rowhurst Close, Chesterton	Approx. 8.88 ha employment use Employment Uses E(g)(i), E(g)(ii), E(g)(iii), B2 and B8.	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
Keele				
KL13	Keele Science Park Phase 3, University of Keele	Approx. 220 dwellings (student accommodation) Approx. 6 ha employment use Employment uses will comprise business space for science-based companies, academic buildings and employment uses directly related to the University's core functions. Where ancillary non-	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
		employment uses are proposed, these will primarily support the onsite businesses, research and development and industrial processes.		
KL15 (Strategic Location)	Land South of A525, Keele (between Keele University and Newcastle)	Approx. 260 dwellings (student accommodation) Approx. 13 ha employment land Employment uses will comprise business space for science-based companies, academic buildings and employment uses directly related to the University's core functions. Where ancillary non-employment uses	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
		are proposed, these will primarily support the onsite businesses, research and development and industrial processes.		
Kidsgrove and Ravenscliffe				
KG6	William Road, Kidsgrove (site of the Galley PH)	Approx. 6 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
G&T 11	Land at Hardings Wood Road, Kingsrove	Site for Gypsy, Travellers & Showpeople - intensification	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This site is not located within 5km of the Midland Meres & Mosses Phase 2 Ramsar - Oakhanger Moss SSSI.
Knutton				
KS3	Land at Blackbank Road, Knutton (adjacent to Knutton Children's Centre)	Approx. 150 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
				pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
KS11	Knutton Community Centre, High Street Knutton	Approx. 9 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
KS17	Knutton Recreation Centre, Knutton Lane	Approx. 55 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
KS18	Land North of Lower Milehouse Lane, Knutton	Approx. 10 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
KS19	Knutton Lane	Approx. 5 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
Loggerheads				
LW53	Land at Corner of Mucklestone Wood Lane, Loggerheads	Approx. 130 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
Madeley and Betley				
MD29	Land North of Bar Hill, Madeley	Approx. 150 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This site is located within 5km of the Midland Meres and Mosses Phase 1 Ramsar site - Betley Mere SSSI
Newchapel and Mow Cop				
NC13	Land West of Bullockhouse Road, Harriseahead	Approx. 100 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
Silverdale				
SP2	Cheddar Drive, Silverdale	Approx. 8 dwellings (8 net gain – 4	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
		dwellings require demolition)		pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
SP11	Former Keele Municipal Golf Course – Lyme Park	Approx. 900 dwellings: Keele Square: approx. 255 dwellings Keele Woods: approx. 310 dwellings Ashbourne Drive: approx. 235 dwellings Park Road: approx. 100 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
SP22	Former playground off Ash Grove, Silverdale	Approx. 36 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
SP23	Land at Cemetery Road / Park Lane	Approx. 200 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
G&T 8	Land West of Silverdale Business Park	Approx. 5 Gypsy and Traveller Pitches	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
Talke and Butt Lane				
BL8	Land adjacent to roundabout at West Avenue, Kidsgrove	Approx. 40 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
BL18	Clough Hall Playing Fields, Talke	Approx. 150 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
BL32	Land at Congleton Road, Butt Lane	Approx. 20 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TK6	Site at Coalpit Hill, Talke	Approx. 10 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TK10	Land at Crown Bank, Talke, Talke and Butt Lane	Approx. 170 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TK17	Land off St Martins Road, Talke	Approx. 40 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TK27	Land off Coppice Road, Talke	Approx. 90 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
				pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
Thistleberry				
TB6	Former Pool Dam Pub Site, Orme Road, Poolfields, Newcastle	Approx. 13 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TB19	Land South of Newcastle Golf Club, Whitmore Road, Thistleberry	Approx. 550 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TB23	Land West of Galingale View, Thistleberry	Approx. 124 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
Town				

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
TC7	Land bound by Ryecroft, Ryebank, Merrial Street, Corporation Street and Liverpool Road, Newcastle	Approx. 75 dwellings Approx. 1.63 ha employment use	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TC19	Hassell Street Car Park	Approx. 5 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TC20	King Street Car Park	Approx. 10 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TC22	Marsh Parade, Newcastle (former Zanzibar night club)	Approx. 70 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
TC40	Car Park, Blackfriars Road, Newcastle	Approx. 10 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TC45	York Place, Newcastle Town Centre	Approx. 0.29 ha employment use	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TC50	Cherry Orchard Car Park	Approx. 5 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TC52	Goose Street Car Park	Approx. 25 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
TC71	Midway Car Park, Newcastle-under-Lyme Town Centre	Approx. 100 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
				pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
Appendix 4 (where not detailed above)				
LW87	Former Petrol Station, Eccleshall Road, Loggerheads	Approx. 12 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
SB12	Land adjacent to Clayton Lodge Hotel	Approx. 48 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
LW74	Land at Baldwins Gate, Maer and Whitmore	Approx. 200 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
CH3	May Bank, Land at Hoon Avenue, Cross Heath	Approx. 100 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational

Site Ref.	Site Name	Employment land (ha) / Net new homes	Potential for urbanisation or habitat loss / fragmentation LSEs.	Potential for an increase in recreational pressure
				pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
RC8	Land at Liverpool Road (part of Birchenwood) Kidsgrove (parcel 2)	Approx. 7 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.
WS9	Land at Lamphouse Way, Wolstanton	Approx. 43 dwellings	This site is not located within 400m of any European site. Urbanisation LSEs are therefore unlikely.	This allocation is not located within 5km of any European site identified as being susceptible to LSEs from recreational pressure associated with the Local Plan in Table 3.4 of the Regulation 19 HRA report.

Habitats Regulations Assessments

Sustainability Appraisals

Strategic Environmental Assessments

Landscape Character Assessments

Landscape and Visual Impact Assessments

Green Belt Reviews

Expert Witness

Ecological Impact Assessments

Habitat and Ecology Surveys

Biodiversity Net Gain

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