LEPUS CONSULTING
LANDSCAPE, ECOLOGY, PLANNING & URBAN SUSTAINABILITY

Draft Sandwell Local Plan Regulation 18

Habitats Regulations Assessment

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Acronyms & Abbreviations

AADT	Annual Average Daily Traffic
ALS	Abstraction License Strategy
APIS	Air Pollution Information System
BCCS	Black Country Core Strategy
CAMS	Catchment Abstraction Strategy
CJEU	Court of Justice of the European Union
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DTA	David Tyldesley and Associates
GIS	Geographic Information System
HDV	Heavy Duty Vehicle
HRA	Habitats Regulations Assessment
IRZ	Impact Risk Zone
IUCN	International Union for Conservation of Nature
JNCC	Joint Nature Conservation Committee
LPA	Local Planning Authority
LSE	Likely Significant Effect
NPPF	National Planning Policy Framework
ppSPA	Possible Potential Special Protection Area
PRoW	Public Right of Way
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SAMMS	Strategic Access Management and Monitoring Strategy
SIP	Site Improvement Plan
SLP	Sandwell Local Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Urban Drainage
UK	United Kingdom
WFD	Water Framework Directive
WRMP	Water Resource Management Plan
WwTW	Wastewater Treatment Works
ZOI	Zone of Influence

1 Introduction

1.1 Local Plan Overview

1.1.1 Sandwell Metropolitan Borough Council (the Council) is currently preparing the Sandwell Local Plan (SLP). This will contain strategic and non-strategic planning policies and land allocations intended to support the growth of Sandwell over the years to 2041. It contains a Vision for Sandwell which is underpinned by strategic objectives and priorities designed to deliver the Vision and its associated objectives. The planning policies will guide land use and development across the borough and set standards for growth and transformation.

1.1.2 Once adopted, the SLP will form part of the statutory development plan for the borough covering the period to 2041, replacing and updating the following:

- The Black Country Core Strategy (BCCS)[1]
- The Sandwell Site Allocations and Delivery Development Plan Document (adopted 2012)[2]
- The West Bromwich Area Action Plan (adopted 2012)[3]
- The Tipton Area Action Plan (adopted 2008)[4]
- The Smethwick Area Action Plan (adopted 2008)[5]

1.1.3 Preparation of the SLP commenced in late 2022 with the production of an Issues and Options Review on which public consultation was undertaken early in 2023. The Council is now consulting on the Draft SLP which has considered representations received to the Issues and Options consultation alongside evidence produced to inform decision making. Lepus Consulting has prepared this report to inform the Habitats Regulations Assessment (HRA) of the Draft SLP at Regulation 18 on behalf of the Council.

[1] Black Country Core Strategy 2011-2026.

[2] Sandwell Site Allocations and Delivery Development Plan Document.

[3] West Bromwich Area Action Plan 2012.

[4] Tipton Area Action Plan 2008.

[5] Smethwick Area Action Plan 2008.

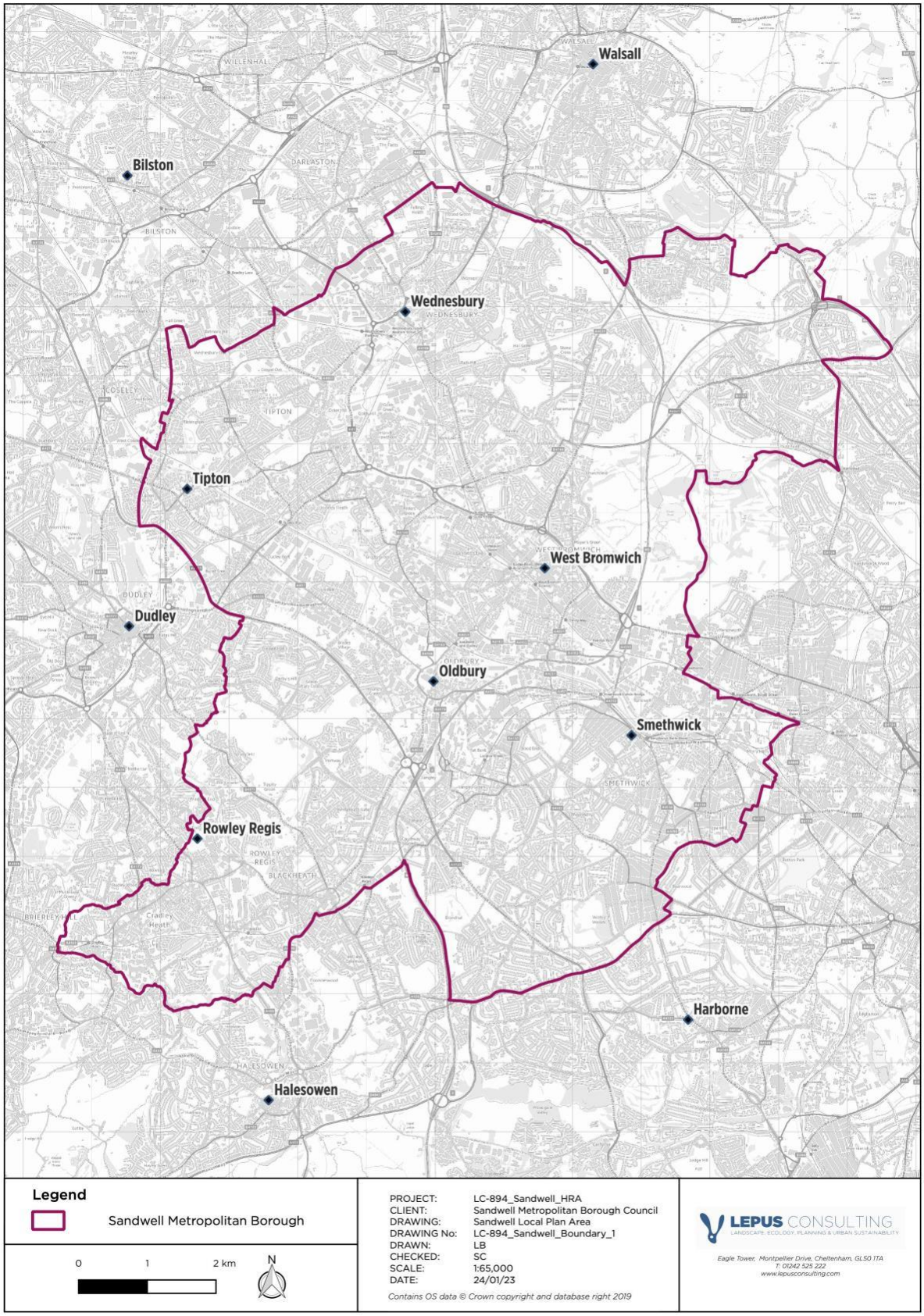

Figure 1.1: Local Plan area

1.2 Habitats Regulations Assessment

1.2.1 The application of HRA to land-use plans is a requirement of the Conservation of Habitats and Species Regulations 2017 (as amended) [6]. 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 Habitats Site (either alone or in-combination) and is not directly connected with or necessary to the management of the Habitats 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 HRA.

1.2.3 The Habitats Regulations[7] 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[8]. European sites together with sites set out in national policy (listed below) are referred to in England and Wales as a Habitats site[9].

- 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 Habitats sites, pSPA, pSAC and listed or proposed Ramsar sites

[6] 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 [Date Accessed: 08/09/23] as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573 [Date Accessed: 08/09/23].

[7] 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 [Date Accessed 07/09/23] as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573 [Date Accessed: 07/09/23].

[8] Ministry of Housing, Communities & Local Government (2023). National Planning Policy Framework. Para 181. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1182995/NPPF_Sept_23.pdf [Date Accessed: 07/09/23].

[9] Habitats site: Any site which would be included within the definition at Regulation 8 of the Conservation of Habitats and Species Regulations 2017 for the purpose of those regulations, including candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation, Special Protection Areas and any relevant Marine Sites. Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework. Para 181. Available in Annex 2 (Glossary) at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1182995/NPPF_Sept_23.pdf [Date Accessed: 07/09/23].

1.2.4 The Issues and Options review was supported by a HRA, which included a preliminary screening of issues and options and made recommendations to inform policy wording[10]. It concluded potential Likely Significant Effects (LSEs) at a number of Habitats sites from air quality, hydrology and functionally linked habitat impact pathways.

1.3 Purpose of this report

1.3.1 HRA is an iterative process, designed to run alongside and inform the Plan making process to ensure adverse impacts on Habitats sites are avoided in the first instance through strategic planning of options or, where this is not possible, effective mitigation which is designed to ensure no adverse impact on site integrity.

1.3.2 The purpose of this HRA report is to continue to inform the development of the SLP at the Regulation 18 stage of the plan-making process, building on the Issues and Option HRA preliminary screening assessment. It provides a screening of allocations and policies which comprise the Draft SLP consultation exercise. It also sets out further stages of HRA work that will be required at future stages of the Plan's development.

1.3.3 This HRA report has been prepared in accordance with the Habitats Regulations and has been informed by the following guidance:

- Planning Practice Guidance: Appropriate Assessment[11]; and
- The Habitat Regulations Assessment Handbook - David Tyldesley and Associates (referred to hereafter as the DTA Handbook), 2013 (in particular Part F: 'Practical Guidance for the Assessment of Plans under the Regulations').

[10] Lepus Consulting. January 2023. Habitats Regulations Assessment of the Sandwell Local Plan. Issues and Options Consultation. Preliminary HRA Report.

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

2 Methodology

2.1 Overview

2.1.1 HRA is a rigorous precautionary process centred around the conservation objectives of a Habitat site's qualifying interests. It is intended to ensure that Habitats sites are protected from impacts that could adversely affect their integrity. The HRA methodology being followed for the SLP review is set out in the Issues and Options HRA preliminary screening assessment. A step-by-step guide to this methodology, as outlined in the DTA Handbook, is illustrated in Figure 2.1. This HRA report provides outputs from Stage 1 of the HRA process.

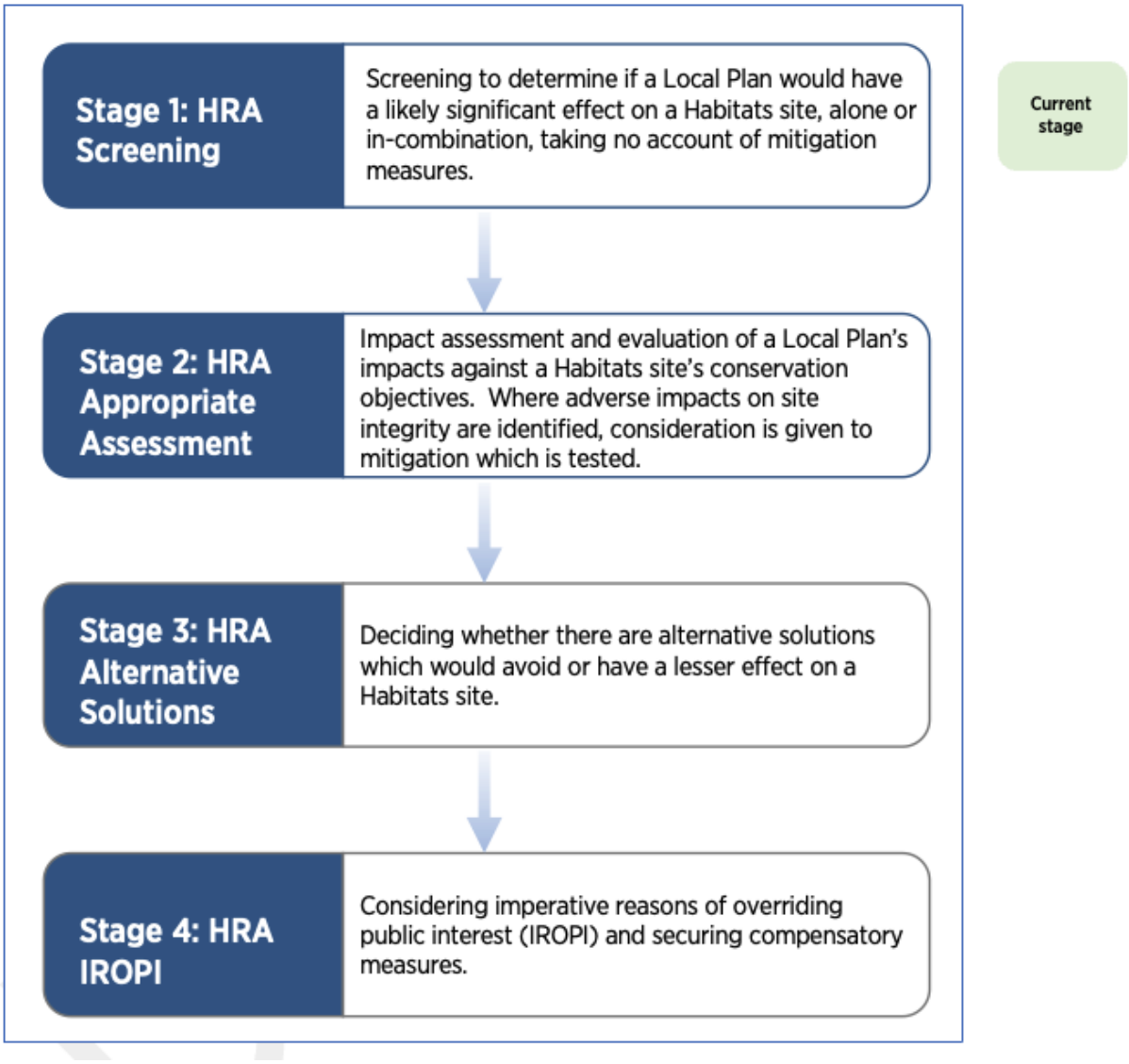

Figure 2.1: Stages in the Habitats Regulations Assessment process[12]

[12] Tyldesley, D., and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (October) (2018) edition UK: DTA Publications Limited. Available at: www.dtapublications.co.uk [Date accessed: 25/07/23].

2.2 Stage 1: Screening for Likely Significant Effects

2.2.1 The first stage in the HRA process comprises the screening stage. 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 Habitats 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 likely significant effects at a Habitats site, either alone or in combination with other plans or projects.

2.2.2 Where elements of the SLP will not result in a LSE on a Habitats site (alone or in-combination) these are screened out and are not considered in further detail in the process. Where LSEs are identified, the HRA process moves to an Appropriate Assessment of LSEs (Stage 2).

2.2.3 The Issues and Options HRA preliminary screening assessment identified the following LSEs upon Habitats sites.

- Cannock Chase SAC – air quality
- Cannock Extension Canal SAC – air quality and hydrology (water supply)
- Fens Pools SAC – air quality
- River Mease SAC – hydrology (water supply)
- Ensor's Pool SAC – hydrology (water supply)
- Severn Estuary SAC, SPA and Ramsar – hydrology and functionally linked land (water quality)
- Humber Estuary SAC, SPA and Ramsar – hydrology and functionally linked land (water quality)

2.2.4 The preliminary screening exercise has been updated in this report to address changes to the draft SLP.

2.2.5 Screening evaluation codes have been used to summarise whether or not each site is likely to have LSEs alone or in-combination. The codes are subsequently used to inform the formal screening decision (Column 2, Table 2.1). The screening results are presented in Chapter 4 of this report.

Table 2.1: Screening evaluation and reasoning categories from Part F of the DTA Handbook

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

2.2.6 Where components of the SLP have no LSE alone, the screening assessment considers potential in-combination LSEs. Plans and projects which are considered to be of most relevance to the in-combination assessment of the SLP include those that have similar impact pathways (see Appendix A). These include those plans and projects that have the potential to increase development in the HRA study area. In addition, other plans and projects with the potential to increase traffic across the study area which may act in-combination with the SLP, such as transport, waste and mineral plans and projects, have also been taken into consideration. Plans which allocate water resources or are likely to influence water quality in the study area have been considered. Finally, neighbouring authority Local Plans which may increase development related public access and disturbance pressures at Habitats sites have also been considered. The in-combination assessment is compliant with the Wealden Judgement[13].

2.2.7 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[14]) determined that mitigation measures are only permitted to be considered as part of an Appropriate Assessment. The HRA screening process has therefore taken no account of incorporated mitigation or avoidance measures that are intended to avoid or reduce harmful effects on a Habitats site when assessing the LSE of the SLP on Habitats sites. These are measures, which if removed (i.e. should they no longer be required for the benefit of a Habitats site), would still allow the lawful and practical implementation of a Plan.

[13] Wealden District Council & Lewes District Council before Mr Justice Jay. Available at: http://www.bailii.org/ew/cases/EWHC/Admin/2017/351.html [Date Accessed: 08/09/23].

[14] InfoCuria (2018) Case C-323/17. Available at: http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN [Date Accessed: 08/09/23].

2.3 Stage 2: Appropriate Assessment and Integrity Test

2.3.1 Stage 2 of the HRA process comprises the Appropriate Assessment and Integrity Test. The purpose of the AA (as defined by the DTA Handbook) is to "undertake an objective, scientific assessment of the implications for the European site qualifying features potentially affected by the Plan in light of their consideration objectives and other information for assessment"[15].

2.3.2 The Appropriate Assessment is undertaken in view of individual Habitats site's conservation objectives. As part of this process decision 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 Habitats sites. Mitigation measures may take the form of policies within the SLP 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.

2.3.3 The Appropriate Assessment aims to present information in respect of all aspects of the SLP and ways in which it could, either alone or in-combination with other plans and projects, impact a Habitats site.

2.3.4 The plan-making body (as the Competent Authority) must then ascertain, based on the findings of the Appropriate Assessment, whether the SLP will adversely affect the integrity of a Habitats site either alone or in-combination with other plans and projects. This is referred to as the Integrity Test.

2.3.5 Whilst this report does not provide a full Appropriate Assessment, it sets out work that is required to inform the Appropriate Assessment as the SLP develops in order to allow the Integrity Test to be made.

2.4 Dealing with uncertainty

2.4.1 Uncertainty is an inherent characteristic of HRA and decisions can be made only on currently available and relevant information. This concept is reinforced in the 7th September 2004 'Waddenzee' ruling[16]:

2.4.2 "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 Appropriate Assessment. 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."

[15] Tyldesley, D. (2013) The Habitats Regulations Assessment Handbook. DTA Publications.

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

2.5 The Precautionary Principle

2.5.1 The HRA process is characterised by the precautionary principle. This is described by the European Commission as being as follows and is embedded in the Integrity Test.

2.5.2 "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."

3 Scoping of threats and pressures at Habitats sites

3.1 Introduction

3.1.1 An important initial stage in the screening process is gathering information on Habitats sites which may be affected by the SLP. This is informally known as scoping and provides an understanding of potential impact pathways from the SLP and connections to Habitats sites and their vulnerabilities. This information is then used to inform the screening assessment (Chapter 4). This chapter therefore scopes Habitats sites and their associated threats and pressures in the context of the SLP. It builds on work undertaken in the Issues and Options HRA.

3.2 Scoping impact pathways

3.2.1 The Issues and Options HRA provided an evaluation of impact pathways by applying a 'source-pathway-effect' model to determine which Habitats sites would form the focus of the HRA. This recognised that different impact pathways (for instance air quality, water and recreational pressure) may have a different geographical coverage. It drew on data held by the JNCC and Natural England on Natura 2000 Data Forms, Ramsar Information Sheets, Site Improvement Plans (SIPs) and Natural England's Supplementary advice notices which are summarised in Appendix B.

3.2.2 The Issues and Options HRA identified the following potential impact pathways within the scope of influence of the SLP. This includes consideration of potential impacts upon both designated sites and areas of functionally linked habitat outside the designation boundary.

- Air pollution: Land use planning has the potential to increase atmospheric emissions of pollutants to the air. These can result in adverse effects at Habitats sites such as eutrophication (nitrogen), acidification (nitrogen and sulphur) and direct toxicity (ozone, ammonia and nitrogen oxides)[17]
- Water resources and water levels: Urban development can change run off rates from urbanised areas to Habitats 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 has the potential to affect functionally linked land[18] (land outside a designated site boundary)

[17] APIS (2016) Ecosystem Services and air pollution impacts. Available at: http://www.apis.ac.uk/ecosystem-services-and-air-pollution-impacts [Date Accessed: 21/06/23]

[18] *"The term 'functional linkage' refers to the role or 'function' that land or sea beyond the boundary of a Habitats site might fulfil in terms of ecologically supporting the populations for which the site was designated or classified. Such land is*

- Recreational pressure: Increased development has the potential to increase recreational pressure upon Habitats sites which are accessible to the public
- Urbanisation: Urban development has the potential to result in disturbing activities (such as noise, lighting and visual disturbance). Disturbance effects may impact upon Habitats sites themselves and also their qualifying features when outside a designated site boundary

3.3 Air Quality

3.3.1 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[19]. This guidance sets a methodology and thresholds for screening of Likely Significant (air quality) Effects at the HRA screening stage (Stage 1 of the HRA process).

3.3.2 At this stage in the plan-making process, traffic modelling data was not available to allow the application of screening thresholds. However, Natural England's guidance (in the form of a series of questions below) has been applied to determine potential air quality impact pathways to Habitats sites:

- Does the Local Plan give rise to emissions which are likely to reach a Habitats 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 Habitats site - application of a 10km radius?

3.3.3 Air quality impacts have been shown to typically affect Habitats sites within 10km of a Plan boundary[20]. 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*'[21].

3.3.4 The SLP will trigger residential and employment development and as such increase traffic related emissions. Fens Pools SAC and Cannock Extension Canal SAC are located within 10km of the SLP boundary.

therefore 'linked' to the Habitats 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.

[19] 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 [Date Accessed: 07/09/23].

[20] Chapman, C and Kite, B. December 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 [Date Accessed: 08/09/23].

[21] JNCC. Nitrogen Future. https://jncc.gov.uk/our-work/nitrogen-futures/ [Date Accessed: 07/09/23].

3.3.5 Sandwell, Walsall, Dudley, Staffordshire and Wolverhampton Councils are working together to prepare a joint strategic air pollution evidence base to support Local Plan production in their respective local authority areas. The research includes the following Habitats sites:

- Cannock Chase SAC
- Pasturefields Salt Marsh SAC
- West Midlands Mosses SAC
- Midlands Meres and Mosses Phase 1 Ramsar Site
- Midlands Meres and Mosses Phase 2 Ramsar Site
- Mottey Meadows SAC
- Cannock Extension Canal SAC
- Fens Pools SAC
- Peak District Dales SAC

3.3.6 Whilst only Fens Pools SAC and Cannock Extension Canal SAC sit within 10km of the SLP boundary, the outcomes / evidence generated by this joint commission will be considered as necessary in the HRA process at future stages of Plan making.

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

3.3.7 It is widely accepted that air quality impacts are greatest within 200m of a road source, decreasing with distance[22,23,24]. Baseline mapping data has been used to determine the proximity of Habitats 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) within a 10km buffer from the SLP administrative area[25]. The UK Air Pollution Information System (APIS) provides information on all Habitats 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 (Appendix B), to determine whether there may be impact pathways from the SLP to any Habitats 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 Fens Pools SAC and the Cannock Extension Canal SAC are located within 200m of an A or B road. This information suggests that both SACs are sensitive to changes in air quality, in particular from atmospheric nitrogen deposition (all qualifying features).

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

[22] 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.

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

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

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

3.3.8 As noted above, the SLP will trigger housing and employment development and as such has the potential to increase traffic related emissions within 10km of the Plan area and therefore along road links within 200m of Fens Pools SAC and Cannock Extension Canal SAC.

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

3.3.9 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[26]. 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 flows on motorways (HDV) change by 200 AADT or more).

3.3.10 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 and for HDV of 200 AADT. 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).

3.3.11 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.

3.3.12 Traffic modelling data was not available at the time of writing and as such Natural England's screening thresholds have not been applied as part of this screening exercise.

3.3.13 To ensure a precautionary approach at this stage of the HRA process, air quality LSEs at both SACs are scoped in for further consideration in the HRA process. This is in line with the conclusions of the Issues and Options HRA. Outputs from the joint strategic air pollution evidence base (paragraph 3.3.5) will be drawn upon when available to inform air quality work at the Appropriate Assessment stage of the HRA.

[26] 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 [Date Accessed: 12/09/23].

Table 3.1: Atmospheric pollution impact pathways to Habitats sites within 10km of the SLP boundary

Habitats site within 10km radius of Plan area	Is the Habitats 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 roads) located within 200m of the Habitats site?	Will the Habitats site be scoped in for further assessment in the HRA process?
Fens Pool SAC	Yes	Yes (A4101, and A461)	Yes
Cannock Extension Canal SAC	Yes	Yes - A5, B4154	Yes

3.4 Water Quality and Water Quantity

3.4.1 The SLP administrative area falls predominantly within the Humber River Basin, with a smaller section of the SLP area in the south west within the Severn River Basin.

3.4.2 Within the Humber Basin, the River Tame is a significant tributary of the River Trent and flows through Sandwell in an easterly direction, converging with the River Trent in Alrewas, Staffordshire, to the north east of Walsall. The River Trent then flows in a northerly direction, joining the Humber to the west of Hull. The River Humber discharges at the Humber Estuary which is designated as a SAC, SPA and Ramsar for a number of qualifying features (Appendix B).

3.4.3 In the Severn River Basin District, the River Stour flows along the south-eastern boundary, between Sandwell and Dudley in a westward direction. It flows westward from Halesowen before joining the River Severn at Stourport-on-Severn. The River Severn ultimately flows into the Severn Estuary which is designated as a SAC, SPA and Ramsar for a number of qualifying features (Appendix B).

3.4.4 An extensive canal network is also located within and around the SLP area, with the Walsall Canal, Tame Valley Canal, Birmingham to Wolverhampton Canal and the Titford Canal all passing through Sandwell.

3.4.5 As set out in the Issues and Options HRA, urban development coming forward through the SLP has the ability to affect water dependant Habitats sites through a number of impacts as listed below. These impacts have the potential to change the water balance (levels) and quality of water entering Habitats sites:

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

3.4.6 Decisions relating to water abstraction for supply and disposal of water are controlled through a number of licencing 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).

3.4.7 There are no Habitats sites located within the Plan area. Habitats sites outside the Plan area can however be affected by changes in water supply and quality where they are hydrologically linked to development in the SLP. These potential impact pathways are explored in the Issues and Options HRA in more detail. This work identified hydrological links between the Plan area and Fens Pools SAC, River Mease SAC and Ensor's Pool SAC due their location within the Worcestershire Middle Severn Abstraction Licence Strategy (ALS) area and the Tames, Anker and Mease ALS. As such the SLP is considered likely to have a potentially significant water quantity effect upon these designations and as such, they are scoped into this assessment for further consideration in the HRA process.

3.4.8 Land use planning has the potential to result in impacts upon qualifying features (for instance mobile species of fish or birds) when located outside a designation boundary, known as functionally linked habitat.

3.4.9 The term 'functional linkage' is defined by Natural England as *"the role or 'function' that land or sea beyond the boundary of a Habitats 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 Habitats site in question because it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status"*[27].

3.4.10 In addition to direct loss or degradation of habitat (designated or functionally linked), development has the potential to result in the fragmentation of habitats through the loss of connecting corridors which would hinder the movement of mobile qualifying species which are associated with some designations.

3.4.11 The tests set out under Article 105 of the Habitats Regulations need to be applied in respect of plans which may significantly affect functionally linked habitat that plays an important role in contributing to the favourable conservation status of the relevant species for which a Habitats site is designated.

3.4.12 The CJEU ruling in the Holohan case confirmed that habitat and / or species which are located outside of a designated site, if they are necessary to the conservation of the habitat types and species listed for the protected area, must be considered in an Appropriate Assessment.

3.4.13 A detailed desk study has been undertaken as part of the HRA screening process to identify pathways and connections to areas of functionally linked land and watercourses which may be affected by the SLP. This has drawn on Natural England designated site and SSSI IRZ data, International Union for Conservation of Nature (IUCN) data, magic, priority habitat inventory data and aerial photography.

[27] 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.

3.4.14 As noted, the SLP area predominantly falls within hydrological catchments associated with the Humber Estuary and to a lesser extent the Severn Estuary. The Severn Estuary SAC and Severn Estuary Ramsar sites are hydrologically linked to the Plan. The River Stour (and its tributaries) run through the Plan area and connect with the River Severn at Stourport-on-Severn. The Humber Estuary designated sites (the Humber Estuary SPA, SAC and Ramsar) are linked to the Plan area via the River Tame.

3.4.15 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 additionally species of salmon (*Salmo salar*), Sea trout (*S. trutta*) and Allis shad (*Alosa alosa*).

3.4.16 Consultation with the Environment Agency (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[28].

3.4.17 The 'Unlocking the Severn' project[29], which is run in partnership between the Canal and Rivers Trust, the Severn Rivers Trust, the Environment Agency (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[30]. Barriers to their journey upstream and degradation of habitat 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 SLP area) must ensure potential future use of these sites are not compromised.

[28] Unlocking the Severn. https://www.unlockingthesevern.co.uk/endangered-fish-return-to-habitat-unlocked-after-180-years/ [Date Accessed: 23/06/23].

[29] Rivers and Canals Trust. Unlocking the Seven Project Available at: https://canalrivertrust.org.uk/enjoy-the-waterways/canal-and-river-network/river-severn-navigation/unlocking-the-severn?gclid=EAIaIQobChMIsevp7MLd8QIVysLtCh3-VwefEAAYASAAEgLC4vD_BwE [Date Accessed: 26/06/23].

[30] IUCN Red List of Threatened Species. Available at: https://www.iucnredlist.org/species/60344/152845178 [Date Accessed: 26/06/23].

3.4.18 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). Similarly, any development within the upper catchment (and SLP area) must ensure potential future use of these sites are not compromised.

3.4.19 Any potential deterioration in water quality or habitat outside the Severn Estuary and Humber Estuary SAC and Ramsar designations as a result of the SLP may have implications for the migration of fish to upstream spawning habitat if it results in a barrier to movement in the future. The impact of the SLP 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[31].

Table 3.2: Review of hydrological impact pathways to Habitats sites within the influence of the SLP

Habitats site with hydrological links to the SLP area	Sensitive to hydrological impacts (water quality and water quantity)	Hydrological connectivity	Will the Habitats site be scoped in for further assessment in the HRA process
Fens Pools SAC	Yes	Fens Pools SAC is located within the Worcestershire Middle Severn CAMS and therefore water quantity (abstraction) impacts from the SLP are likely. As set out in Natural England's Supplementary Advice, water is supplied to Fens Pools SAC from rainfall and run-off from neighbouring residential areas and as such water quality LSEs are unlikely from the SLP.	Yes
River Mease SAC	Yes	The River Mease SAC is located within the Tame, Anker and Mease CAMS and therefore water quantity (abstraction) impacts are likely from the SLP. The SAC is located downstream of the SLP area. The SLP area feeds into the River Tame which joins the River Trent downstream of the River Mease and therefore there are no direct hydrological links to the Plan area and water quality effects from the SLP are considered to be unlikely.	Yes
Ensor's Pool SAC	Yes	Ensor's Pool SAC is located within the Tame, Anker and Mease CAMS and therefore water quantity (abstraction) impacts from the SLP are likely. It is not connected by to the Plan area via water quality impact pathways.	Yes

[31] 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 [Date Accessed: 26/06/23].

Habitats site with hydrological links to the SLP area	Sensitive to hydrological impacts (water quality and water quantity)	Hydrological connectivity	Will the Habitats site be scoped in for further assessment in the HRA process
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 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 that may be caused by the SLP.	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 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 that may be caused by the SLP.	Yes
Cannock Extension Canal SAC	Yes	The SAC is fed by the Chasewater reservoir which is part of the Chasewater Southern Staffordshire Coalfield Heaths SSSI which is located upstream of the SLP area and as such is not likely to be affected by a change in water quality from growth in the Plan area. Whilst the SAC itself not situated within the Tame, Anker and Mease CAMS area, the Chasewater Southern Staffordshire Coalfield Heaths SSSI is located within this CAMS area. As such the SAC will be considered further in the HRA process in terms of water supply/abstraction impacts from the SLP.	Yes

3.5 Recreational Pressure

3.5.1 The Issues and Options HRA sets out potential recreational impact pathways which may be exacerbated by residential growth in the Plan area. These can include 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.

3.5.2 A common approach taken across the UK to address recreational impacts at Habitats 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).

3.5.3 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.

3.5.4 Where available, recreational ZOI distances have been applied to determine potential pathways of recreational effects from the SLP. The recreational draw of a Habitats site depends on a number of factors. These includes the extent and range of facilities provided at a Habitats site (in particular parking), accessibility both within the Habitats site and links to the wider area, incorporation of a Habitats site as part of a wider designation such as National Park and the promotion of a site.

3.5.5 A review of recreational impact assessments undertaken for other Habitats 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[32]. However, this review recognises that some visitors are prepared to travel longer distances to visit particular sites for instance coastal and wetland sites. As such a precautionary distance of 15km has been applied to scoping of Habitats sites at which there may be potential recreational impact pathways.

3.5.6 Fens Pools SAC is located to the west (3.2km) of the SLP boundary and is surrounded by urban development with two Public Rights of Way (PRoW) and an off-road cycle route through its centre. Whilst the SAC is vulnerable to urbanisation effects, Natural England's SIP for the SAC does not identify it being vulnerable to recreational impacts. Natural England's Supplementary Advice for the SAC indicates that it is "*owned and managed by Dudley Metropolitan Borough Council, and has wardens present on site throughout the week. Management aims are to maintain and increase the size and health of the amphibian assemblage on the site by maintaining and enhancing habitat through a combination of new pond creation, connecting up of existing pond networks, eradication of non-native invasive species, and the monitoring of grazing and illegal activities across the site*". As such it is considered that there will be no LSEs from the SLP at the SAC from recreation impacts.

3.5.7 The Cannock Extension Canal SAC is located approximately 8.2km to the north of the Plan boundary. Natural England's Supplementary Advice for the SAC indicates that it is sensitive to human disturbance including recreational boat traffic movement. However, given the presence of other sections of the canal network in closer proximity to Sandwell, it is considered that the SLP will have no LSE upon this SAC in terms of recreational impacts.

[32] 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. Available at: https://academic.oup.com/jue/article/5/1/juz019/5602629 [Date Accessed: 18/04/23].

3.5.8 At Cannock Chase SAC, recreational impacts are known to be an issue for features for which the SAC is designated[33,34]. To manage identified recreational pressures, the Cannock Chase SAC Partnership (composed of 6 Local Planning Authorities, Staffordshire County Council, Natural England, and a number of key stakeholders) was formalised under a Memorandum of Understanding (MOU) in 2016. The MOU sets out a suite of Strategic Access Management and Monitoring Measures (SAMMM) which are funded through financial contributions from new housing developments within 8km of the SAC (the zone within which most frequent visitors originated). In 2017 the Cannock Chase SAC stage 1 Planning Evidence Base Review (PEBR) was undertaken to act as a 'health check' upon the SAMMM, to review the current situation, check if the SAMMM was still fit for purpose, and act as a platform for further work going forward[35]. Since the 2017 review, a further evidence base has been undertaken including updated visitor surveys[36]. It identifies a 15km recreational zone of influence. The SLP sits outside this area (being approximately 17.25km to the south of the SAC) and therefore it is considered that there will be no LSEs from the SLP at the SAC from recreation impacts.

3.6 Urbanisation effects

3.6.1 Urbanisation effects typically occur when development is located close to a Habitats site boundary. These may include impacts such as noise disturbance, lighting effects, cat predation, fly-tipping, wildfire, littering and vandalism. 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.

3.6.2 As with recreational impacts, urbanisation mitigation strategies have been implemented across the UK through the establishment of buffer zones. Commonly applied urbanisation Zones of Influence extend around 400 – 500m from the edge of a designation as this reflects likely impacts from pets (e.g. cat predation) and the distance from which people access a site on foot. The Thames Basin Heaths Special Protection Area Delivery Framework[53] is one such strategy which makes recommendations for accommodating development while also protecting the SPA's qualifying features by establishing a 400m zone where development does not take place.

3.6.3 There are no Habitats sites within the Plan area. Whilst Fens Pools SAC is noted to be vulnerable to urbanisation effects (see Section 3.5), given its distance from the Plan area urbanisation effects from the SLP are unlikely. Urbanisation effects are therefore not considered further in the HRA process.

[33] J. White, R. McGibbon & J. Underhill-Day (2012). Impacts of Recreation to Cannock Chase SAC. Unpublished report. Footprint Ecology.

[34] Liley, D., Underhill-Day, J., White, J. & Sharp, J. (2009) Evidence Base relating to Cannock Chase SAC and the Appropriate Assessment of Local Authority Core Strategies. Footprint Ecology.

[35] Hoskin, R. and Liley, D. 2017. Cannock Chase SAC Planning Evidence Base Review. Unpublished report for the Cannock Chase SAC Partnership.

[36] Panter, C & Liley, D., (2019). Cannock Chase Visitor Survey 2018. Unpublished report by Footprint Ecology for the Cannock Chase SAC Partnership.

3.7 Habitats Sites and threats and pressures

3.7.1 Figure 3.1 and Figure 3.2 illustrates the location of Habitats sites which will be scoped into the HRA process for further consideration in the screening assessment (Section 4). Impact pathways which have the potential to affect these Habitats sites are summarised in Table 3.3. These will form the basis of the HRA screening assessment (Chapter 4).

Table 3.3: Potential impact pathways from the Local Plan at each Habitats site.

Potential pathways of Impact	Air Pollution	Water quality and/or quantity changes
Habitats Sites	• Cannock Extension Canal SAC • Fens Pools SAC	• Fens Pools SAC • River Mease SAC • Ensor's Pool SAC • Cannock Extension Canal SAC • Severn Estuary SAC, SPA and Ramsar • Humber Estuary SAC, SPA and Ramsar

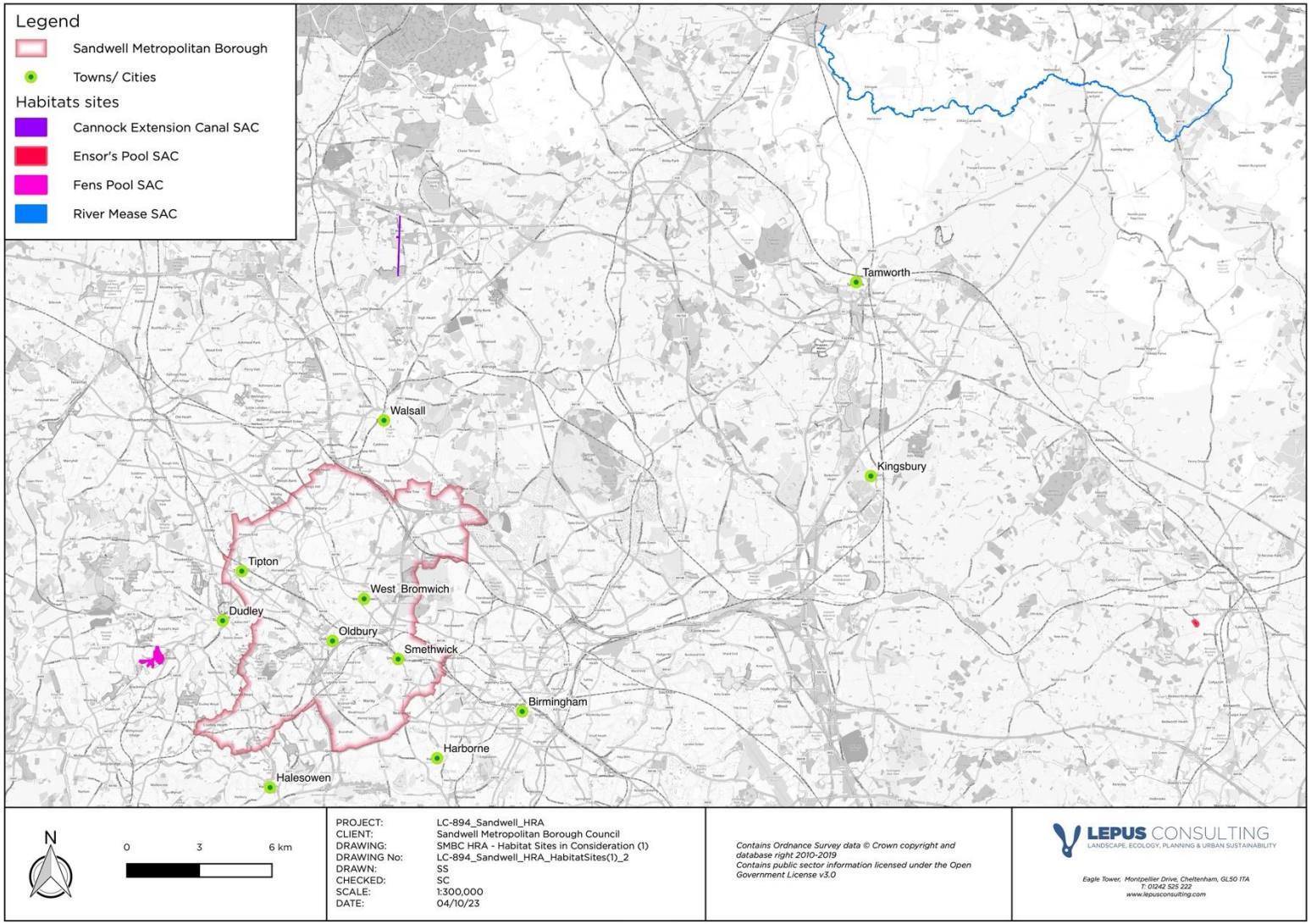

Figure 3.1 Habitats sites for consideration in the HRA process (1)

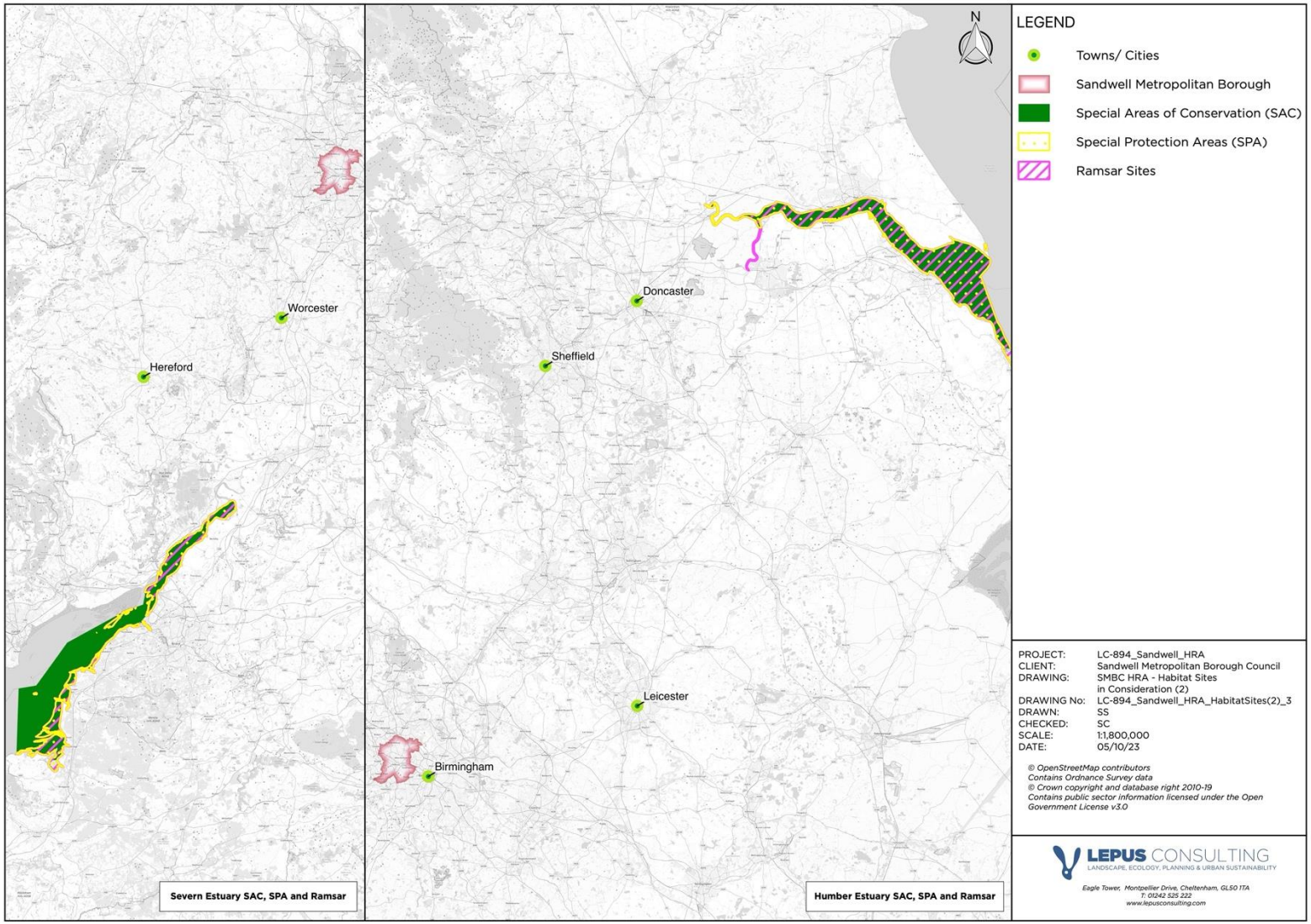

Figure 3.2: Habitats sites for consideration in the HRA process (2)

4 Screening of the Draft SLP

4.1 Introduction

4.1.1 This section of the HRA comprises the screening stage: Stage 1 of the HRA process (see Figure 2.1). The screening exercise draws on information regarding threats and pressures at Habitats sites scoped into the HRA process in Chapter 3 of this report. This chapter screens each component of the Draft SLP for LSEs and identifies the requirement for Appropriate Assessment (Chapter 5 and Chapter 6).

4.2 Screening

4.2.1 The Draft SLP is not directly connected with or necessary to the management of any Habitats site and as such it is not exempted from the HRA process. In addition, it cannot be excluded or eliminated from the process on the basis of no conceivable effect. It is therefore necessary to determine whether the Draft SLP will have a Likely Significant Effect on any Habitats site, either alone or in-combination with other aspects of the Plan or other plans and projects. In order to identify LSEs upon Habitats sites, each component of the Draft SLP has been appraised against the HRA screening criteria (see Appendix C), taking into consideration case law and best practice. The assessment of LSEs takes no account of mitigation to ensure compliance with the People Over Wind ruling[37].

4.2.2 This screening exercise builds on and updates screening undertaken as part of the Issues and Options HRA. It will also be revisited at Regulation 19 to capture any changes in policy wording or allocations made as the SLP continues to be developed.

4.2.3 It is concluded that LSEs, from either the Draft SLP alone or in-combination with other plans or projects, could be screened out for a number of policy options. This is because they fell into the following categories (see Table 2.1 for a description of each category):

- Category A: General statements of policy / general aspirations
- Category B: Policies listing general criteria for testing the acceptability / sustainability of proposals
- Category D: Environmental protection / site safeguarding
- Category F: Policies or proposals that cannot lead to development or other change

4.2.4 The following policies in the Draft SLP were however considered to have an LSE in-combination with other plans and projects:

- Policy SDS1 - Development Strategy
- Policy SDS2 - Regeneration in Sandwell
- Policy SDS3 – Towns and Local Areas
- Policy SHO1 - Delivering Sustainable Housing Growth
- Policy SHO2 – Windfall developments

[37] InfoCuria (2018) Case C-323/17. Available at: http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN [Date Accessed: 08/09/23]

- Policy SHO10 - Accommodations for Gypsies and Travellers and Travelling Showpeople
- Policy SEC1 – Providing for Economic Growth and Job Creation
- Policy SWB2 – Development in West Bromwich
- Policy SWA3 – Preferred Areas for New Waste Facilities

4.2.5 LSEs were identified at Habitat sites detailed in **Table 3.3** as follows:

- Air quality LSEs – in-combination at Fens Pools SAC and Cannock Extension Canal SAC; and
- Water quality and/or quantity LSEs – in-combination at Fens Pools SAC, River Mease SAC, Cannock Extension Canal SAC, Severn Estuary SAC, SPA and Ramsar, Humber Estuary SAC, SPA and Ramsar, Ensor's Pool SAC.

4.3 Screening conclusion

4.3.1 As required under Regulation 105 of the Habitats Regulations, an assessment has been undertaken of LSEs of the Draft SLP upon Habitats sites. The pre-screening checks (Appendix C) indicates that all allocations proposed in the Draft SLP have the potential to have LSEs at the above Habitats sites. LSEs are possible for all allocations, in- combination (air quality and water). The screening assessment takes no account of mitigation measures that the policies may incorporate to mitigate adverse impacts upon Habitats sites. It is therefore concluded that the Draft SLP will be screened into the HRA process. The next stage of the HRA process will be Stage 2 - Appropriate Assessment.

4.3.2 It is too early at this stage of the Plan making process to undertake a full Appropriate Assessment as key pieces of evidence are in preparation, and these will inform the details within the SLP.

4.3.3 The following sections of this report however identify issues which will be considered in the Appropriate Assessment. Evidence collated to date has been set out and gaps in the evidence base have been highlighted. The full Appropriate Assessment will be completed alongside preparation of the Regulation 19 version of the SLP when all HRA evidence and SLP details are available.

5 Preliminary Air Quality Appropriate Assessment

5.1 Introduction

5.1.1 The HRA screening process in Chapter 4 concluded that a number of Draft SLP policies have the potential to result in LSEs at Fens Pools SAC and Cannock Extension Canal SAC due to changes in air quality.

5.1.2 This section of the report provides a preliminary Appropriate Assessment of this issue where evidence allows. It also highlights additional work that will be required to complete the Appropriate Assessment at Regulation 19.

5.2 Air quality impacts

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)[38]. 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.

[38] APIS (2016) Ecosystem Services and air pollution impacts. Available at: http://www.apis.ac.uk/ecosystem-services-and-air-pollution-impacts. [Date Accessed: 15/09/23].

5.2.4 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 Habitats site is host to a variety of habitats and species, the features of which are often designated 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" [39]. 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"[40].

5.3 Fens Pool SAC Baseline Information

5.3.1 The qualifying feature of Fens Pools SAC is the great crested newt (*Triturus cristatus)*[41]. Natural England's Supplementary Advice[42] for the SAC notes that great crested newts are sensitive to air pollution. It indicates that a change in air quality may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition (including food-plants) and reducing supporting habitat quality and population viability of this feature. The management target for this habitat in terms of air quality is to 'maintain concentrations and deposition of air pollutants at or below the site-relevant Critical Load or Level values given for Great Crested Newt supporting habitats on the Air Pollution Information System'.

5.3.2 APIS[43] indicates that the species broad habitat type (standing open water) is sensitive to changes in air quality. No critical loads are however available from APIS for this habitat type. APIS states that 'no Critical Load has been assigned to the EUNIS classes for meso/eutrophic systems. These systems are often P limited (or N/P co-limiting), therefore decisions should be taken at a site-specific level. Furthermore, consideration should also be given to other sources of N, i.e. discharges to water, diffuse agricultural pollution etc.' Nitrogen deposition (N deposition to forest[44]) is currently at an average of 28.837 N/ha/yr at the SAC (the level is relatively consistent across the site). The critical load for permanent oligotrophic waters: softwater lakes[45] is 3-10 kg/N/ha/year. This load is being applied in the joint air quality work currently being undertaken for the SAC (paragraph 3.3.5).

[39] Coordination Centre for Effects (CCE). Critical load and level definitions. Available at: https://www.umweltbundesamt.de/en/Coordination_Centre_for_Effects [Date Accessed: 08/09/23].

[40] Coordination Centre for Effects (CCE). Critical load and level definitions. Available at: https://www.umweltbundesamt.de/en/Coordination_Centre_for_Effects [Date Accessed: 08/09/23].

[41] Natural England. 2018. Fens Pools SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/6642225895440384 [Date Accessed: 04/10/23].

[42] Natural England. 2019. Fens Pools SAC. Supplementary Advice. Available at: http://publications.naturalengland.org.uk/file/5386159160557568 [Date Accessed: 04/10/23].

[43] Air Pollution Information System. https://www.apis.ac.uk/ [Date Accessed: 04/10/23].

[44] Woodland - Representative of substantial areas of mature woodland between both key roads and qualifying habitat.

[45] No critical load data in available for the breeding pool utilised by the sites qualifying species (great crested newts). As such the values for softwater lakes are recommended to be used instead.

5.3.3 Great crested newts rely on water bodies for a number of important stages throughout their lifecycle[46]. Natural England notes that if ponds are subject to increased nutrients, vegetation could become more abundant, potentially resulting in a loss of open areas which is important for great crested newt courtship displays. If nutrient levels are increased further still, then submerged plants may also be completely lost as ponds become dominated by algae or in smaller waterbodies duckweed[47]. Natural England notes that "without water chemistry data it is impossible to tell if a water body is Nitrogen or Phosphorus limited. In many places neither nutrient is limiting as both nutrients are at elevated levels, regardless of the ratio between the two. Previously in freshwater science there was an assumption that most standing fresh waters were phosphorus limited, but this is no longer thought to be the case and the impacts of elevated levels of nitrogen, regardless of the phosphorus concentrations has been more widely acknowledged, as has the number of cases where water bodies are nitrogen limited".

5.3.4 The screening assessment indicates that there are two strategic road links within 200m of the SAC which are capable of carrying traffic which may exceed Natural England's screening thresholds (paragraph 3.3.9) – the A4101 and A461. A review of aerial photography and site mapping data for the SAC indicates that the closest great crested newt pond to the A4101 is located approximately 177m to the south of the westbound carriageway with the closest pond to the A461 more than 200m to the west (approximately 310m). Terrestrial habitat is however located within 200m.

5.4 Cannock Extension Canal SAC

5.4.1 The qualifying feature of the Cannock Extension Canal SAC is the floating water-plantain (*Luronium natans)*[48]. Natural England's Supplementary Advice[49] for the SAC notes that floating water-plantain is sensitive to air pollution. It indicates that a change in air quality may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it. The management target for this habitat in terms of air quality is to 'restore as necessary the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for these features of the site on the Air Pollution Information System. This 'restore' objective represents current baseline exceedances of critical loads.

[46] Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife, Halesworth.

[47] Personal Communication. Natural England. 1st May 2020.

[48] Natural England. 2018. Cannock Extension Canal SAC Conservation Objectives. Available at: https://publications.naturalengland.org.uk/publication/5063623810482176 [Date Accessed: 04/10/23].

[49] Natural England. 2019. Cannock Extension Canal SAC. Supplementary Advice. Available at: https://publications.naturalengland.org.uk/publication/5063623810482176 [Date Accessed: 04/10/23].

5.4.2 APIS[50] indicates that the species broad habitat type (standing open water) is sensitive to changes in air quality. No critical loads are however available from APIS for this habitat type. APIS indicates that site specific advice for site value should be sought, noting that 'this critical load only applies if the interest feature is associated with softwater oligotrophic or dystrophic lakes at the site. If the feature is not depending on these lake types, there is no comparable critical load available'. The critical load for permanent oligotrophic waters: softwater lakes[51] is 3-10 kg/N/ha/year. This load is being applied in the joint air quality work currently being undertaken for the SAC (paragraph 3.3.5). Nitrogen deposition (to short vegetation[52]) is currently at an average of 17.261 N/ha/yr at the SAC (the level is relatively consistent across the site).

5.4.3 The screening assessment indicates that there are two strategic road links within 200m of the SAC which are capable of carrying traffic which may exceed Natural England's screening thresholds (paragraph 3.3.9) – the A5 and B4154. A review of aerial photography indicates that qualifying habitat is present within 200m of each road link.

5.5 Information required to progress the Appropriate Assessment

5.5.1 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[53]. In addition, the Institute of Air Quality Management (IAQM)[54] and the Chartered Institute of Ecology and Environmental Management (CIEEM)[55] have also prepared advice on the assessment of air quality impacts at designated sites. This guidance provides methodologies for Appropriate Assessment and ecological interpretation of air quality impacts at designated sites.

5.5.2 In order to better define this impact, traffic modelling data is required to identify whether screening thresholds (discussed in Chapter 3) along the A4101, A461, A5 and B4154 will be exceeded for the SLP either alone or in-combination. This will be made available as part of the joint commission aimed at establishing a scientific and robust evidence base to determine the likely air pollution impacts (via increased traffic generation) on several Habitats sites should emerging Local Planning Authroity (LPA) Local Plans be adopted. These include Fens Pools SAC and Cannock Extension Canal SAC (paragraph 3.3.5).

[50] Air Pollution Information System. https://www.apis.ac.uk/ [Date Accessed: 04/10/23].

[51] No critical load data in available for the breeding pool utilised by the sites qualifying species (great crested newts). As such the values for softwater lakes are recommended to be used instead.

[52] Grassland - Representative of substantial areas of mature woodland between both key roads and qualifying habitat.

[53] 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 [Date Accessed: 07/09/23]

[54] Holman et al (2020). A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.1, Institute of Air Quality Management, London.

[55] CIEEM (2021) Advice on Ecological Assessment of Air Quality Impacts. Chartered Institute of Ecology and Environmental Management. Winchester, UK.

5.5.3 Where exceedances are identified these will be considered in an Appropriate Assessment taking into consideration the outputs of potential air quality modelling in relation to habitat types and habitat responses, baseline data and future trends. Where adverse impacts on site integrity are identified, effective mitigation will need to be incorporated. This information will be available as the SLP develops and presented in the Regulation 19 HRA.

6 Preliminary Water Appropriate Assessment

6.1 Introduction

6.1.1 The HRA screening process in Chapter 4 concludes that a number of Draft SLP policies have the potential to result in likely significant water impacts as follows:

- Fens Pools SAC – water quantity LSEs in-combination
- River Mease SAC– water quantity LSEs in-combination
- Cannock Extension Canal SAC – water quantity LSEs in-combination
- Severn Estuary SAC, SPA and Ramsar (including functionally linked habitat) – water quality LSEs in-combination
- Humber Estuary SAC, SPA and Ramsar (including functionally linked habitat) – water quality LSEs in-combination
- Ensor's Pool SAC – water quantity LSEs in-combination

6.1.2 This section of the report provides a preliminary Appropriate Assessment of this issue where evidence allows. It also highlights additional work that will be required to complete the Appropriate Assessment at Regulation 19.

6.2 Water quality impacts and information required for the Appropriate Assessment

6.2.1 Urbanisation 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 Waste Water Treatment Works (WwTWs). This change in water quality can increase nutrient inputs into a catchment which can lead to algal blooms, reduce dissolved oxygen and increased turbidity. This can affect the overall condition of the receiving waterbody and may have adverse effects at hydrologically sensitive and connected Habitats sites and their qualifying features.

6.2.2 Together the Government, the Environment Agency (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 and managing the treatment of wastewater. This is undertaken through a catchment-based approach and provides protection for Habitats sties and ensures compliance with the WFD[56].

[56] https://environment.ec.europa.eu/topics/water/water-framework-directive_en.

6.2.3 The WFD provides an indication of the health of the water environment and whether a water body is at good status or potential. It sets out areas which require special protection. These include areas designated for "the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection including relevant Natura 2000 sites[57] designated under Directive 92/43/EEC (the Habitats Directive) and Directive 79/409/EEC (the Birds Directive)"[58].

6.2.4 As set out in Chapter 3 the majority of the SLP administrative area falls within the Humber River Basin, with a smaller section of the SLP area in the south west within the Severn River Basin. River Basin Management Plans (RBMP) describe the threats to the water environment and how these can be managed. The Severn RBMP[59] and the Humber RBMP[60] which apply to the Plan area are discussed in detail in the Issues and Options HRA. The outputs of the HRAs prepared to support the RBMPs suggest that at the strategic level there will be no LSEs upon any Habitats site but recognise that, as water and land resources are closely linked, the RBMPs must also inform decisions on land-use planning.

6.2.5 Given the location of the Severn Estuary SAC, SPA and Ramsar and Humber Estuary SAC, SPA and Ramsar a significant distance downstream from the Plan area (see Figure 3.2) it is unlikely that there will be direct surface water quality adverse impacts upon these designations from Local Plan development.

6.2.6 However, as outlined in Section 3.4, water quality impacts upon functionally linked watercourses are possible. Policies set out in the Draft SLP (Policy SCC5 – Sustainable Drainage and Surface Water Management (SuDS)) will go towards the protection of water quality. On-going dialogue will also be required with the waste water treatment company for the Plan area to ensure adequate WwTW infrastructure is in place to accommodate future forecast growth and ensure WFD targets for 'Good Ecological Status' are maintained. This ongoing dialogue will feed into the Appropriate Assessment at Regulation 19.

[57] Known as the National Sites Network in the UK since leaving the EU.

[58] Official Journal of the European Communities (2000) Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. Available at: https://eur-lex.europa.eu/resource.html?uri=cellar:5c835afb-2ec6-4577-bdf8-756d3d694eeb.0004.02/DOC_1&format=PDF [Date Accessed: 13/09/23].

[59] Environment Agency (2022) Severn River Basin Management Plan. Available at: https://www.gov.uk/guidance/severn-river-basin-district-river-basin-management-plan-updated-2022 [Date accessed: 04/10/23].

[60] Environment Agency (2022) Humber River Basin Management Plan. Available at: https://www.gov.uk/guidance/humber-river-basin-district-river-management-plan-updated-2022 [Date accessed: 04/10/23].

6.3 Water quantity impacts and information required for the Appropriate Assessment

6.3.1 Urban 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 Habitats sites or watercourses which connect to them and therefore water levels. Water mains leakage and sewer infiltration may also affect water levels. In addition, supply to meet water demand associated with new development (residential and commercial / industrial) also has the potential to affect water balances at hydrologically sensitive Habitats sites which are connected with the Plan area.

6.3.2 It is a statutory requirement that every five years water companies produce and publish a Water Resources Management Plan (WRMP). 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. Water companies divide their supply into Water Resource Zones (WRZs).

6.3.3 The main water service provider for Sandwell is Severn Trent Water (STW), with water resources also provided by South Staffs Water (SSW). STW provides water to over 8 million people. The STW WRMP[61] and SSW WRMP[62] estimate future water demands and plans how these levels will be achieved. Both WRMPs forecasts a deficit that is likely to develop between supply and demand for water over time unless action is taken. The WRMPs outline a number of demand management measures that need to be taken to ensure continued sustainable sources of water supply. As part of the evidence base that supported the now withdrawn draft BCP, a Water Cycle Study (WCS) was prepared[63]. This was undertaken through consultation with STW, SSW, the EA and neighbouring LPAs. Through this work, STW advised that if growth in the Black Country was in line with their forecast, then they do not have concerns regarding water resources. SSW stated that they do not have concerns about the level of growth within their Water Resource Zone (WRZ). These findings will be verified on the basis of the growth proposed within the emerging SLP specifically through the plan making process.

[61] Severn Trent Water (2019) Waste Resources Management Plan 2019. Available at: https://SLP.stwater.co.uk/content/dam/stw-plc/our-plans/severn-trent-water-resource-management-plan.pdf [Date accessed: 04/10/23].

[62] South Staffs Water. Water Resources Management Plan 2019. Available at: https://www.south-staffs-water.co.uk/media/2676/final-wrmp-2019-south-staffs-water.pdf [Date accessed: 04/10/23].

[63] JBA Consulting (May 2020) Black Country Councils Water Cycle Study: Scoping Study - Final Available at: https://blackcountryplan.dudley.gov.uk/t2/p4/t2p4h/ [Date accessed: 04/10/23].

6.3.4 The EA prepares an Abstraction Licensing Strategy (ALS) through its Catchment Abstraction Management Strategy (CAMS) process 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 the environment needs and implement the RBMPs and water abstraction plan[64] into licencing policy. The CAMS process is published in a series of ALSs for each river basin. The Plan area predominantly lies within the Worcestershire Middle Severn and Tame, Anker and Mease ALS areas. There are hydrological links between the Plan area and Fens Pools SAC, Cannock Extension Canal SAC, River Mease SAC and Ensor's Pool SAC due their location within the Worcestershire Middle Severn ALS area and the Tames, Anker and Mease ALS.

6.3.5 At Regulation 19 the Appropriate Assessment will apply protective water quality policy wording from the SLP and draw on the wider protective framework for the water environment. On-going consultation undertaken with STW in terms of water resource availability for future growth will also input to the assessment.

[64] DEFRA. July 2021. Policy Paper: Water Abstraction Plan. Available at: https://www.gov.uk/government/publications/water-abstraction-plan-2017/water-abstraction-plan [Date Accessed: 13/09/23].

7 Next Steps

7.1 Conclusions

7.1.1 This HRA report provides an assessment of the Draft SLP which includes allocations and policies. It also presents an update on work undertaken in support of the HRA process at Issues and Options. It screens in LSEs at the following Habitats sites which reflects the outputs of the Issues and Options HRA:

- Air quality LSEs – in-combination at Fens Pools SAC and Cannock Extension Canal SAC; and
- Water quality and quantity LSEs – in-combination at Fens Pools SAC, River Mease SAC, Cannock Extension Canal SAC, Severn Estuary SAC, SPA and Ramsar, Humber Estuary SAC, SPA and Ramsar, Ensor's Pool SAC.

7.1.2 This report also identifies information required to inform the Appropriate Assessment at the Regulation 19 stage of the Plan making process. No conclusions have been drawn at this stage in the process in terms of adverse impacts on the site integrity of any Habitats site (alone or in-combination).

7.2 Next Steps

7.2.1 Screening will be revisited at Regulation 19 when the SLP is further developed to take into consideration any changes.

7.2.2 The following information will be collated as the SLP develops, to inform the Appropriate Assessment at Regulation 19:

- The Regulation 19 version of the SLP will include an assessment of strategic traffic modeling undertaken. This will allow a screening of likely significant air quality effects against Natural England's screening thresholds for Fens Pools SAC and Cannock Extension Canal SAC and inform any further work required to allow an Appropriate Assessment of this impact pathway; and
- The Regulation 19 HRA will be informed by ongoing dialogue with water suppliers in terms of WwTW capacity and water resources. It will also take into consideration the water protection framework and the SLP policy wording in this respect.

7.2.3 At Regulation 19 a full Appropriate Assessment will be presented in support of the Publication SLP which will allow the Council, as the Competent Authroity, to make the Integrity Test. The Council will take into consideration representations from Natural England under the provisions of the Habitats Regulations at Regulation 105(2).

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

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