

# Habitats Regulations Assessment of the South Warwickshire Local Plan

## Regulation 19 Publication Stage

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# Acronyms & Abbreviations

AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
ALS	Abstraction License Strategy
APIS	Air Pollution Information System
CAMS	Catchment Abstraction Strategy
CIEEM	Chartered Institute of Ecology and Environmental Management
DTA	David Tyldesley and Associates
FLL	Functionally Linked Land
GIS	Geographic Information System
HoF	Hands off Flow
HRA	Habitats Regulations Assessment
IAQM	Institute of Air Quality Management
IRZ	Impact Risk Zone
LPA	Local Planning Authority
LSE	Likely Significant Effect
NE	Natural England
NNR	National Nature Reserve
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
SIP	Site Improvement Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SWLP	South Warwickshire Local Plan
SWMP	Surface Water Management Plan
SWMC	Surface Water Management Catchment
SWOX	Swindon and Oxfordshire
UK	United Kingdom
WCS	Water Cycle Study
WFD	Water Framework Directive
WRMP	Water Resource Management Plan
WRZ	Water Resource Zone
WwTW	Wastewater Treatment Works

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Zone of Influence

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# Executive Summary

- E1. Lepus Consulting was appointed, on behalf of Stratford-on-Avon District Council and Warwick District Council, to undertake a Habitats Regulations Assessment (HRA) in compliance with the Habitats Regulations 2017 (as amended)<sup>1</sup> of the South Warwickshire Local Plan (SWLP) at Regulation 19.
- E2. The SWLP is not directly connected with or necessary to the management of any European site. Consideration was therefore given to potential links or causal connections between the effects of the SWLP and European sites to identify LSEs. This exercise was undertaken through the collation of information for each European site and application of a 'source-pathway-receptor' model.
- E3. Each component of the SWLP, including policies and allocations, was screened for LSEs. Taking no account of mitigation measures, the screening stage concluded that the SWLP has the potential to have in-combination water quality LSEs at functionally linked watercourses associated with the Severn Estuary SAC, Severn Estuary Ramsar, Humber Estuary SAC and Humber Estuary Ramsar.
- E4. It was therefore concluded that the SWLP would be screened into the HRA process, and an AA was undertaken.
- E5. The AA focussed on evaluating whether the policies and site allocations within the SWLP could result in adverse effects on the integrity of the screened in European sites, either alone or in combination with other plans or projects. The AA examined water quality effects associated with development within the SWLP upon functionally linked watercourses associated with migratory fish from the Severn Estuary SAC, Severn Estuary Ramsar, Humber Estuary SAC and Humber Estuary Ramsar.
- E6. Using water quality modelling outputs from the Phase 2 Water Cycle Study (WCS), policy safeguards in both the high-level water planning framework and SWLP itself, the AA concluded that the SWLP would result in no adverse impact on the integrity of the Humber Estuary SAC, Humber Estuary Ramsar, Severn Estuary SAC or Severn Estuary Ramsar either alone or in-combination.
- E7. Stratford-on-Avon District Council and Warwick District Council, as the Competent Authorities, have responsibility to make the Integrity Test, which can be undertaken in light of the conclusions set out in this report. The Councils must 'have regard' to Natural England's representations under the provisions of Habitats Regulations.

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<sup>1</sup> 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> [Date accessed: 15/05/26].

# 1 Introduction

## 1.1 Background

1.1.1 Stratford-on-Avon District Council and Warwick District Council are currently preparing a new plan for Stratford-on-Avon and Warwick Districts, known as the South Warwickshire Local Plan (SWLP).

1.1.2 The SWLP will set out the overall strategy for the pattern, scale and design quality of places within South Warwickshire, and make sufficient provision for housing, employment, retail, leisure and other commercial development across the South Warwickshire area up to 2050.

1.1.3 The SWLP will cover the administrative areas of both Stratford-on-Avon and Warwick including the primary urban settlements of Warwick, Royal Leamington Spa, Kenilworth, Stratford-Upon-Avon, Alcester, Wilmcote, Shipston-on-Stour and Southam. This area is hereafter referred to as the 'Plan area' and is illustrated in **Figure 1.1**.

1.1.4 Once adopted, the SWLP will form part of the statutory development plan for both boroughs covering the period to 2050, replacing and updating the following:

- Stratford-on-Avon District Council Core Strategy<sup>2</sup>
- Warwick District Councils Local Plan<sup>3</sup>

1.1.5 In 2023, as part of the plan making process, the Councils consulted on an Issues and Options Consultation. This sought views on appropriate options to address various issues identified for the local area and included options for how and where development needs can be met and locations for possible new settlements. The Councils then progressed to the Preferred Options Stage at Regulation 18. The Preferred Options consultation addressed a number of topics and presented a range of draft policies and draft policy directions. The responses to these consultations have informed the Publication SWLP at Regulation 19.

<sup>2</sup> Stratford-on-Avon District Council (2016) Stratford-on-Avon District Core Strategy 2011 to 2031.

<sup>3</sup> Warwick District Council (2017) Local Plan – helping shape the district. 2011-2029.

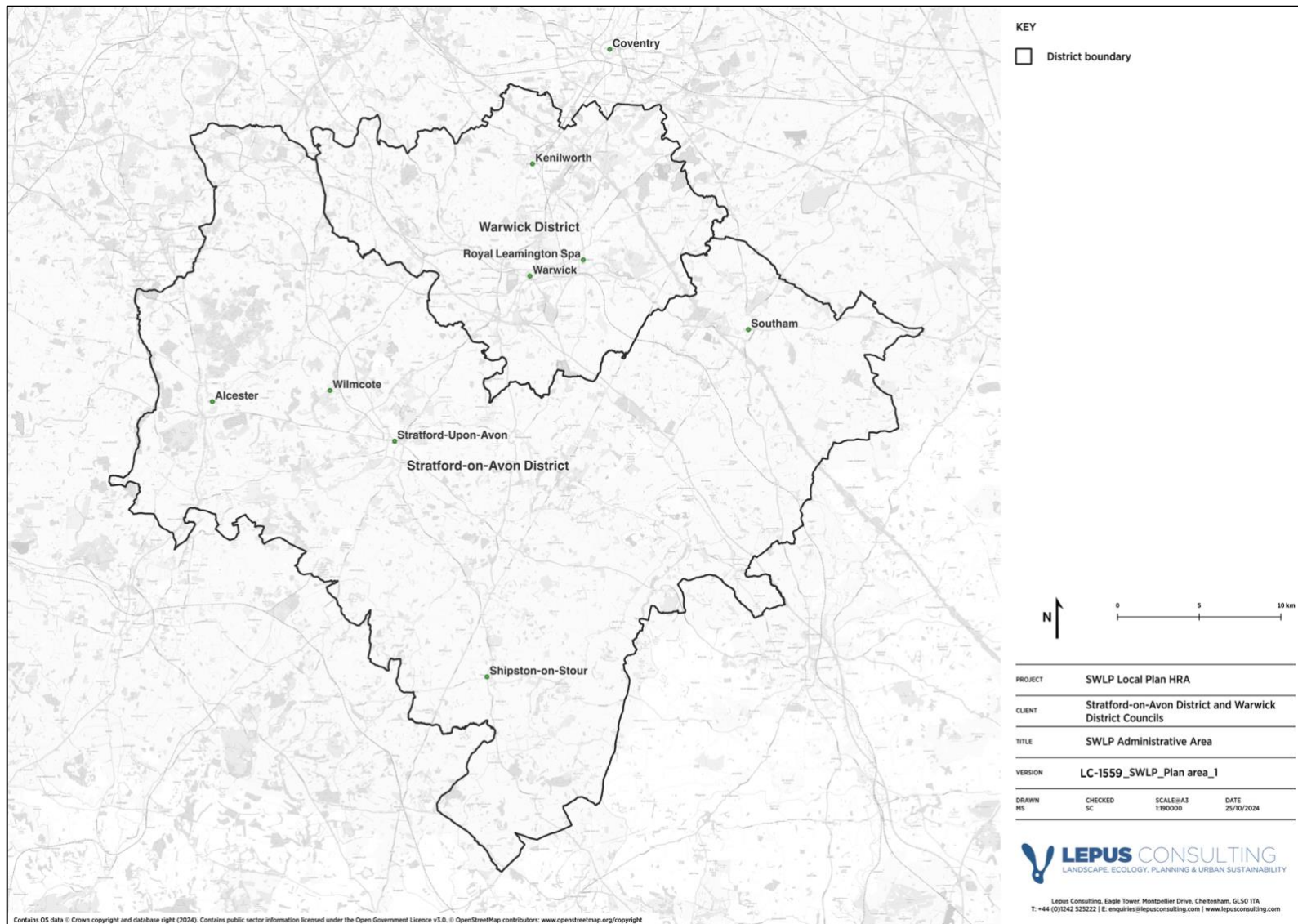


Figure 1.1: SWLP administrative area

## 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)<sup>4</sup>. 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 a European site, under the Habitats Regulations, 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 The Habitats Regulations<sup>5</sup> 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<sup>6</sup>:

- 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.

## 1.3 Previous HRA work

1.3.1 The Regulation 18 Issues and Options HRA<sup>7</sup>, provided guidance and advice to the Councils at the early stages of the SWLP review and identified European sites for consideration in the HRA process. It identified water and recreational pathways of impact from the SWLP to a number of European sites.

1.3.2 The Regulation 18 Preferred Options HRA<sup>8</sup> undertook a screening assessment of draft policies and site allocations. It identified LSEs in relation to water quality only at a number of European sites. All other impact pathways were screened out. The Preferred Options HRA report recommended that a full AA be undertaken.

<sup>4</sup> The 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.

<sup>5</sup> 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.

<sup>6</sup> Department for Levelling up, Housing and Communities & Local Government (2023). National Planning Policy Framework. Para 187.

<sup>7</sup> Lepus Consulting (2022) Habitats Regulations Assessment of the South Warwickshire Local Plan: Issues and Options Consultation. Preliminary HRA Scoping Report.

<sup>8</sup> Lepus Consulting (2024) Habitats Regulations Assessment of the South Warwickshire Local Plan: Regulation 18 Preferred Options Consultation (November 2024). Available at

- 1.3.3 The Stratford-on-Avon Core Strategy was adopted on 11 July 2016<sup>9</sup> and sets out a development strategy and planning policies. It was supported by an HRA which was undertaken iteratively throughout plan preparation<sup>10</sup>. The Core Strategy HRA<sup>11</sup> looked at likely significant effects upon European sites within 20km of the plan area focusing specifically on hydrological pathways of impact. Taking into consideration higher level water related protective policy and the outputs of a Water Cycle Study (WCS), the HRA concluded that there would be no adverse impacts on the integrity of a European site either alone or in-combination.
- 1.3.4 The Warwick District Local Plan was adopted in September 2017<sup>12</sup> and sets out a development strategy and planning policies. It was supported by an HRA which was undertaken iteratively throughout plan preparation<sup>13</sup>. The Warwick District Local Plan HRA<sup>14</sup> focused on Ensor's Pool SAC, and following consultation with Severn Trent Water confirmed no likely significant effects upon the SAC.
- 1.4 **Purpose of this report**
- 1.4.1 Lepus Consulting has prepared this HRA Report on behalf of the Councils to inform the plan-making process at the Regulation 19 consultation stage.

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<https://www.southwarwickshire.org.uk/doc/213182/name/LC%201228%20SWLP%20Preferred%20Options%20HRA%203%20201124SC.pdf> [Date accessed: 13/05/26]

<sup>9</sup> Stratford-on-Avon Core Strategy. July 2016. Stratford-on-Avon District. Available at:

<https://www.stratford.gov.uk/doc/173518/name/SDC%20CORE%20STRATEGY%202011%202031%20July%20016.pdf> [Date Accessed: 23/04/26].

<sup>10</sup> Stratford-on-Avon Core Strategy Habitats Regulations Assessment Technical Evidence Base Available at: <https://www.stratford.gov.uk/planning-building/sustainability.cfm> [Date Accessed: 23/04/26].

<sup>11</sup> Lepus Consulting. April 2014. Habitats Regulations Assessment of the Stratford-on-Avon Core Strategy. Proposed Submission Version of the Core Strategy.

<sup>12</sup> Warwick District Council. September 2017. Warwick District Local Plan. Available at: [https://www.warwickdc.gov.uk/downloads/file/4623/new\\_local\\_plan](https://www.warwickdc.gov.uk/downloads/file/4623/new_local_plan) [Date Accessed: 23/04/26].

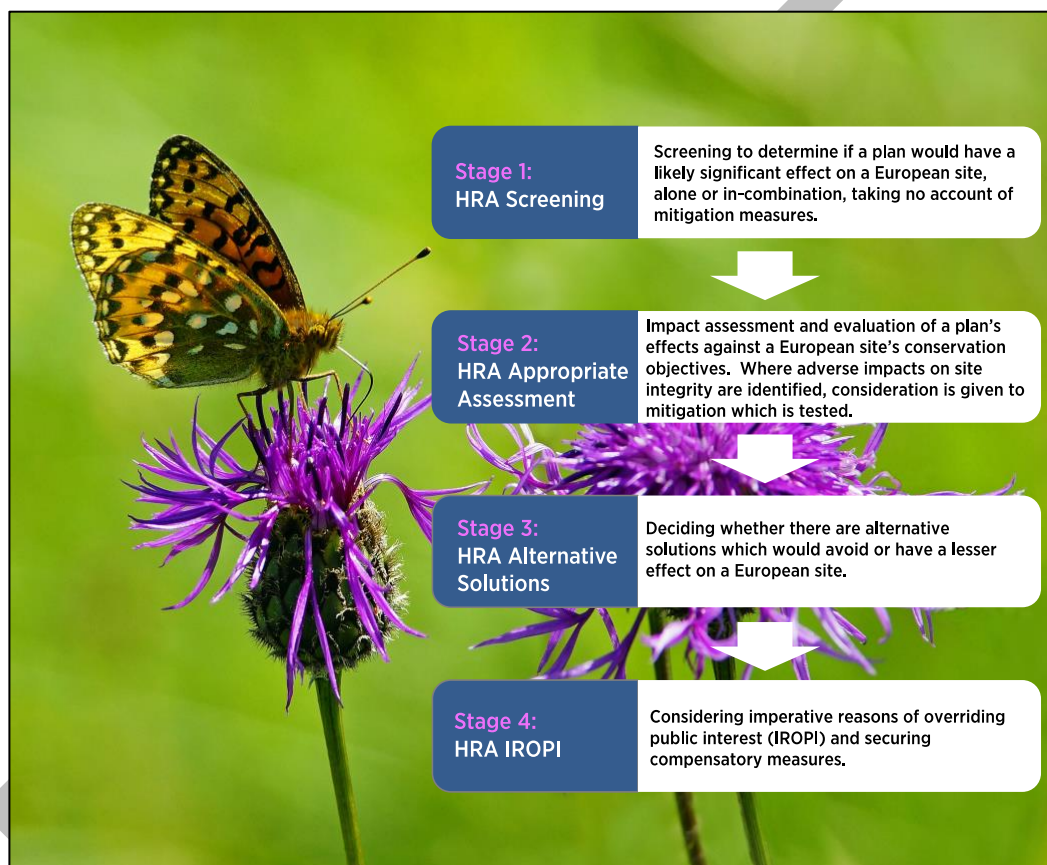
<sup>13</sup> Warwick District Council Habitats Regulations Assessment Technical Evidence Base Available at: <https://www.warwickdc.gov.uk/downloads/download/668/biodiversity> [Date Accessed: 23/04/26].

<sup>14</sup> Warwick District Council. March 2014. Local Plan Habitats Regulations Assessment. Screening Report.

## 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 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<sup>15</sup>

### 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.

<sup>15</sup> Adapted from the now withdrawn DTA HRA Handbook. Tyldesley, D., and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (January) (2021) edition UK: DTA Publications Limited.

2.2.2 Where elements of the SWLP will not result in an LSE on a European site (alone or in-combination) these are screened out and not considered in further detail in the process. Where LSEs are identified these elements of the SWLP are screened in for further consideration in an AA. The screening process uses a number of evaluation codes to summarise whether or not a plan component is likely to have LSEs alone or in-combination. These codes set out in **Table 2.1** and are used to inform the formal screening decision (Column 2).

**Table: 2.1: Screening evaluation categories<sup>16</sup>**

Screening evaluation categories	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

2.2.3 The judgement by the European Court of Justice on the interpretation of the Habitats Directive in the case of People Over Wind and Sweetman vs Coillte Teoranta (Case C-323/17<sup>17</sup>) determined that mitigation measures are only permitted to be considered as part of the AA stage of the HRA process. 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 European site when assessing the LSEs of the SWLP 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.

<sup>16</sup> Adapted from the now withdrawn DTA HRA Handbook. 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/> [Date Accessed: 22/04/26].

<sup>17</sup> InfoCuria (2018) Case C-323/17. Available at: <http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN> [Date Accessed: 22/04/26]

2.2.4 Where screening concludes there are no LSEs from the SWLP alone, it is next necessary to consider whether the effects of the SWLP in-combination with other plans and projects would combine to result in an LSE on any European site. It may be that the SWLP alone will not have a significant effect but could have a residual effect that may contribute to in-combination effects on a European site.

2.2.5 Plans and projects which are considered to be of most relevance to the in-combination assessment of the SWLP include those that have similar impact pathways. 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 and which may act in-combination with the SWLP, such as the Warwickshire transport, waste and mineral plans, will also be taken into consideration. Plans which allocate water resources or are likely to influence water quality within the study area will also be considered. Finally, neighbouring authority local plans (listed below and detailed in **Appendix A**) which may increase development related pressures at European sites will be considered. It is recognised that the status of other plans and projects will change over the timescale of the SWLP plan-making process.

- Cheltenham Plan
- Cherwell Local Plan
- Cotswold District Local Plan
- Coventry Local Plan
- Borough of Redditch Local Plan
- Bromsgrove District Plan
- Gloucester City Plan
- Rugby Local Plan
- Solihull Local Plan
- South Worcestershire Development Plan
- Tewkesbury, Cheltenham and Gloucester Joint Strategic and Local Plan
- Tewkesbury Borough Plan
- West Northamptonshire Joint Core Strategy
- West Oxfordshire Local Plan

2.2.6 The approach taken to the consideration of in-combination effects will be compliant with the Wealden Judgement<sup>18</sup> which requires an in-combination approach that considers the development of neighbouring and nearby authorities when assessing LSEs.

## 2.3 Stage 2: Appropriate Assessment and Integrity Test

2.3.1 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<sup>19</sup>.

<sup>18</sup> Wealden District Council & Lewes District Council before Mr Justice Jay. Available at: <http://SLP.baillii.org/ew/cases/EWHC/Admin/2017/351.html> [Date Accessed: 22/04/26].

<sup>19</sup> Department of Levelling Up, Housing and Communities (July 2019) Planning Practice Guidance Note, Appropriate Assessment, Guidance on the use of Habitats Regulations Assessment.

2.3.2 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 SWLP, or mitigation proposed through other plans or regulatory mechanisms. All mitigation measures must be deliverable and able to mitigate the adverse effects for which they are targeted.

2.3.3 The AA aims to present information in respect of all aspects of the SWLP and ways in which it could, either alone or in-combination with other plans and projects, impact a European site. The plan making bodies (as the Competent Authority) must then ascertain, based on the findings of the AA, whether the SWLP 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.

## 2.4 Dealing with uncertainty

2.4.1 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 7<sup>th</sup> of September 2004 'Waddenzee' ruling<sup>20</sup>:

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 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."

## 2.5 The Precautionary Principle

2.5.1 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.

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<sup>20</sup> 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 SWLP. This is informally known as scoping and provides an understanding of potential impact pathways from the SWLP and connections to European sites and their vulnerabilities.

### 3.2 Identification of an 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 particular 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), or the pressure / 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 development 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, spawning, 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 Appropriate Assessment indicates that: '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'<sup>21</sup>.

### 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**.

<sup>21</sup> Department of Levelling Up, Housing and Communities (July 2019) Planning Practice Guidance Note, Appropriate Assessment, Guidance on the use of Habitats Regulations Assessment.

- 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 SWLP and have not been considered.
- 3.3.3 Sites of Special Scientific Interest (SSSIs) are protected areas in the United Kingdom (UK). 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. The conservation status of SSSI features that overlap with European sites offer a useful indicator of habitat/species health at a particular location.
- 3.3.4 NE conducts Whole Feature Assessments (WFAs) which measure the condition of each notified feature across the whole of a SSSI. The conservation status of each notified feature highlights any areas which are particularly vulnerable to threats/pressures. Conservation status is defined as below:
- Favourable;
  - Unfavourable – recovering;
  - Unfavourable – no change; or,
  - Unfavourable – declining.
- 3.3.5 SSSI features 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 SSSI features 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 features 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’<sup>22</sup>. 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 and likely vulnerabilities to development proposed within the SWLP.

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<sup>22</sup> Natural England (2025) Natural England’s Impact Risk Zones for Sites of Special Scientific Interest User Guidance (v.5.4). Available at:  
[https://magic.defra.gov.uk/Metadata\\_for\\_magic/SSSI%20IRZ%20User%20Guidance%20MAGIC.pdf](https://magic.defra.gov.uk/Metadata_for_magic/SSSI%20IRZ%20User%20Guidance%20MAGIC.pdf) [Date Accessed: 22/04/26].

3.3.7 Based on the previous HRA work undertaken to support the Regulation 18 Preferred Options stage of plan-making, Issues and Options HRA and adopted local plans (see **Section 1.3**), the following potential impact pathways are considered to be within the scope of influence of the SWLP. 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)<sup>23</sup>. 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)<sup>24</sup>.
- **Water resources and water levels:** 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 has 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.
- **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. The SWLP will trigger development in the form of housing, employment and retail development.

3.3.8 European sites assessed in this HRA report are identified in **Table 3.1** and illustrated in **Figures 3.1 to 3.3**. The inclusion of European sites has taken into consideration a review of pathways of impact (for instance hydrological connectivity), a 20km buffer from the Plan area and previous HRA work undertaken in support of the Regulation 18 Preferred Options HRA, the Issues and Options HRA and the HRA work prepared in support of the Stratford-on-Avon District Council and Warwick District Council existing planning framework (see **Section 1.3**).

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<sup>23</sup> “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.

<sup>24</sup> APIS (2016) Ecosystem Services and air pollution impacts.

**Table 3.1: European sites for consideration in the HRA**

European site	Location in relation to the SWLP administrative area
Bredon Hill SAC	Located outside administrative area, approx. 11.1km to the south west
Ensor's Pool SAC	Located outside administrative area, approx. 14.5km to the north east
Lyppard Grange Ponds SAC	Located outside administrative area, approx. 14.9km to the south west
Dixton Woods SAC	Located outside administrative area, approx. 18.8km to the south west
Oxford Meadows SAC	Located outside administrative area, approx. 26.1km to the south east
Severn Estuary SAC	Located outside administrative area, approx. 54.6km to the south west
Severn Estuary SPA	Located outside administrative area, approx. 54.6km to the south west
Severn Estuary Ramsar	Located outside administrative area, approx. 54.6km to the south west
Humber Estuary SAC	Located outside administrative area, approx. 143.6km to the north east
Humber Estuary Ramsar	Located outside administrative area, approx. 143.6km to the north east
Humber Estuary SPA	Located outside administrative area, approx. 153.8km to the north east

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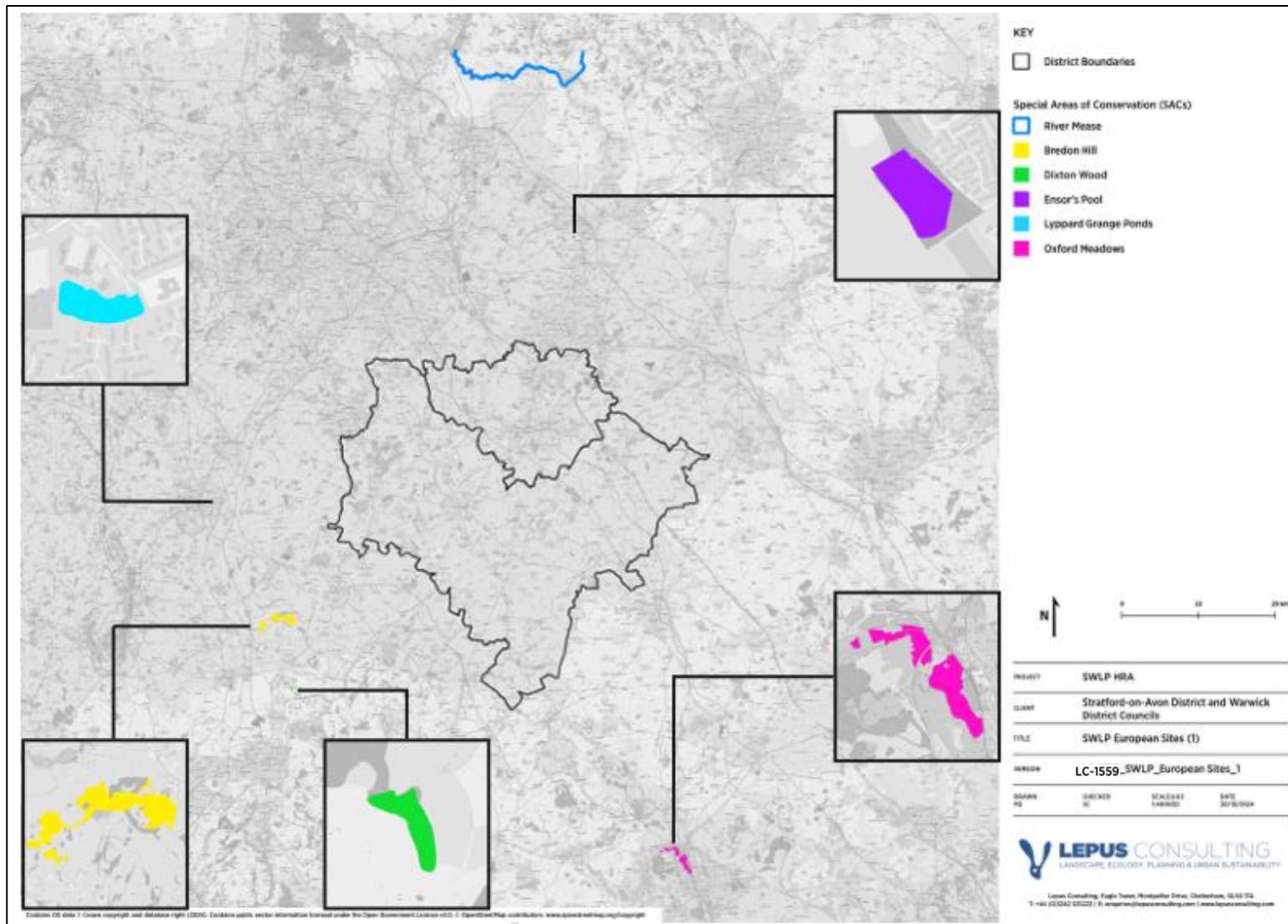


Figure 3.1: European sites located within HRA search area (1)

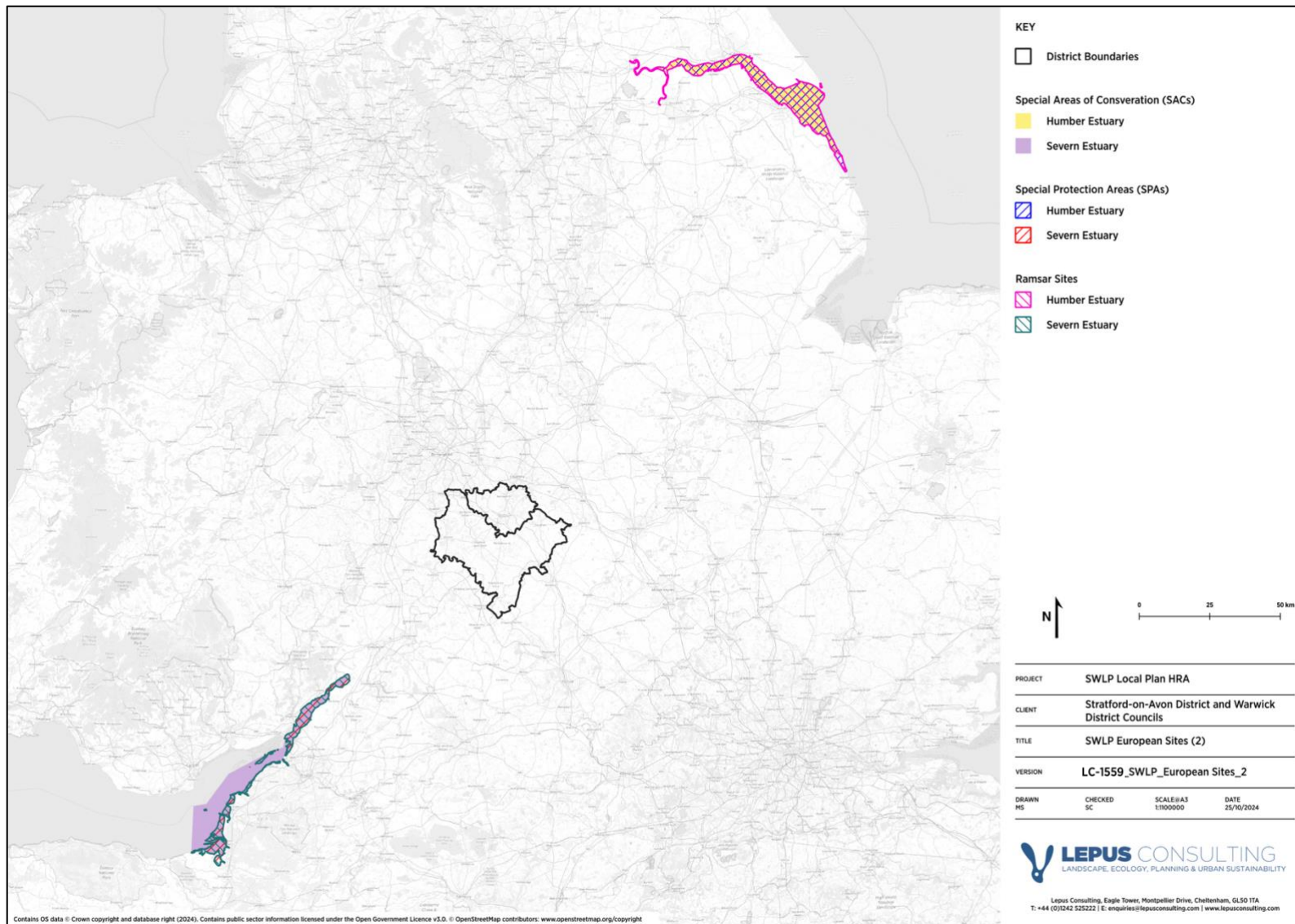


Figure 3.2: European sites located within HRA search area (2)

## 3.4 Air quality

- 3.4.1 Air pollution can affect a European site if it has an adverse effect on its features of qualifying interest. The main mechanisms through which air pollution can have an adverse effect is through eutrophication (nitrogen), acidification (nitrogen and sulphur) and direct toxicity (ozone, ammonia and nitrogen oxides). Deposition of air pollutants can alter the soil and plant composition and species which depend upon these.
- 3.4.2 As highlighted through the review of threats and pressures at European sites (**Appendix B**), air pollution, and in particular atmospheric nitrogen deposition, has been identified as a threat or pressure for qualifying features of a number of European sites within the relevant Natural England SIPs and Supplementary Conservation Advice Notes.
- 3.4.3 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 upsets the ammonium and nitrate balance of the ecosystem, which disrupts the growth, structure and resilience of some plant species.
- 3.4.4 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.
- 3.4.5 As an attempt to manage the negative consequences of atmospheric nitrogen deposition, 'critical loads' and 'critical levels' have been established for ecosystems in Europe. Each European site is host to a variety of habitats and species, the features of which are often designated a critical load for nitrogen deposition.
- 3.4.6 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'<sup>25</sup>. 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'<sup>26</sup>.

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<sup>25</sup> UNECE. ICP Modeling and Mapping Critical loads and levels approach. Available at: [https://www.umweltbundesamt.de/en/Coordination\\_Centre\\_for\\_Effects](https://www.umweltbundesamt.de/en/Coordination_Centre_for_Effects) [Date Accessed: 22/04/26].

<sup>26</sup> UNECE. ICP Modeling and Mapping Critical loads and levels approach. Available at: [https://www.umweltbundesamt.de/en/Coordination\\_Centre\\_for\\_Effects](https://www.umweltbundesamt.de/en/Coordination_Centre_for_Effects) [Date Accessed: 22/04/26].

- 3.4.7 Natural England has developed a methodology for the assessment of traffic-related air quality impacts under the Habitats Regulations, which is relevant to the HRA of land use plans which may result in a change in traffic flows<sup>27</sup>. In addition, Natural England has recently issued further advice (Standing Advice) in relation to the impact of certain types of development upon air quality<sup>28</sup>. For local plan making, Natural England will be producing Standard Advice going forward which will reflect the Standing Advice (2025) but with a particular focus on local plans. The Institute of Air Quality Management (IAQM)<sup>29</sup> and the Chartered Institute of Ecology and Environmental Management (CIEEM)<sup>30</sup> have also prepared advice on the assessment of air quality impacts at designated sites. Taken together this guidance sets a methodology for screening of air quality LSEs at the HRA screening stage (Stage 1 of the HRA process) and methodologies for further AA (Stage 2 of the HRA process) of air quality impacts where relevant.
- 3.4.8 The first stage set out in the above air quality advice and guidance is to undertake an initial screening assessment to determine if there is a credible risk of an air quality effect from the SWLP. This should take account of whether significant emissions can reach a European site using distance criteria and also whether the qualifying habitats or supporting habitat of qualifying species associated with a European site are sensitive to air quality impacts
- 3.4.9 The SWLP will trigger accommodation development and consequently increase traffic-related emissions. Air quality impacts have been shown to typically affect European sites within 10km of a plan boundary<sup>31</sup>. 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”*<sup>32</sup>. This 10km distance threshold can be a useful guide to identify the broad areas that may be impacted by air quality. However, it is noted that consideration should also be given to the wider potential for air quality impacts in the context of the local and regional road network.

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<sup>27</sup> 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: 15/05/2026]

<sup>28</sup> Natural England (2025) Air Pollution and development. Advice for local authorities. Available at:

<https://www.gov.uk/guidance/air-pollution-and-development-advice-for-local-authorities> [Date Accessed: 06/05/26].

<sup>29</sup> IAQM (2019) A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.0. Available at: <https://iaqm.co.uk/text/guidance/air-quality-impacts-on-nature-sites-2019.pdf>. [Date accessed: 15/05/2026]

<sup>30</sup> CIEEM (2021) Advisory Note: Ecological Assessment of Air Quality Impacts. Available at: <https://cieem.net/wp-content/uploads/2020/12/Air-Quality-advice-note.pdf>. [Date accessed: 15/05/2026]

<sup>31</sup> 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> [Date accessed: 28/07/25].

<sup>32</sup> JNCC. Nitrogen Future. Available at: <https://jncc.gov.uk/our-work/nitrogen-futures/> [Date accessed: 28/07/25].

- 3.4.10 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<sup>33</sup>. Key commuting destinations / origins include the neighbouring authority areas of Redditch, Wychavon, Coventry, Birmingham, Solihull and Cherwell.
- 3.4.11 In addition, European sites beyond 10km of the Plan area but within the key commuting areas which are sensitive to air quality effects, are also considered within this HRA where they are linked to the Plan area via key strategic road links. These are road links which provide a clear route linking residential and employment areas within the Plan area. A 20km buffer from the SWLP area is considered precautionary as it encompasses the key commuting areas (**paragraph 3.4.10**) and strategic road links that connect to the Plan area.
- 3.4.12 It is widely accepted that air quality impacts are greatest within 200m of a road source, decreasing with distance<sup>34,35,36</sup>. Baseline mapping data has been used to determine the proximity of European sites, and their qualifying features, to roads (within 200m). Given the distance of all European sites from the Plan area (more than 11km from the Plan boundary to the closest European site – Bredon Hill SAC) it is considered that an assessment of A and B roads and motorways represent a proportionate level of assessment.
- 3.4.13 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 (**Appendix B**), to determine whether there may be impact pathways from the SWLP to any European site through a change in atmospheric emissions (**Table 3.2**). As shown in **Table 3.2**, there are no A and B roads or motorways located within 200m of any European site. Air quality impact pathways to European sites can therefore be scoped out of the HRA process and no further stage of screening or assessment of air quality impacts needs to be undertaken.

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<sup>33</sup> 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> [Date Accessed: 22/04/26].

<sup>34</sup> 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.

<sup>35</sup> Natural England (2016) The ecological effects of air pollution from road transport: an updated review. Natural England Commissioned Report NECR 199.

<sup>36</sup> Bignal, K., Ashmore, M. & Power, S. (2004) The ecological effects of diffuse air pollution from road transport. English Nature Research Report No. 580, Peterborough.

**Table 3.2:** Atmospheric pollution pathways of impact to European sites within 20km of the SWLP administrative area

European site name	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 roads) located within 200m of the European site?	Will the European site be scoped in for further assessment in the HRA process
Bredon Hill SAC	Yes	No	No
Ensor's Pool SAC	No	No	No
Lyppard Grange Ponds SAC	Yes	No	No
Dixton Woods SAC	Yes	No	No

### 3.5 Water quality and water quantity

3.5.1 Urban development coming forward through the SWLP has the ability to affect water dependent European 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 European sites:

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

3.5.2 The Water Framework Directive (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 status for the whole water body is classed below good. Surface water bodies can be classed as high, good, moderate, poor or bad status.

3.5.3 The WFD 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 designated under Directive 92/43/EEC (the Habitats Directive) and Directive 79/409/EEC (the Birds Directive)<sup>37</sup>.

<sup>37</sup> 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](https://eur-lex.europa.eu/resource.html?uri=cellar:5c835afb-2ec6-4577-bdf8-756d3d694eeb.0004.02/DOC_1&format=PDF) [Date Accessed: 22/04/26].

3.5.4 The main watercourse running through the Plan area is the River Avon which flows in a northeast to southwest direction through the Plan area towards its confluence with the River Severn near Tewkesbury. Key tributaries of the River Avon within the Plan area include the River Arrow, River Stour, River Dene, River Leam, River Sowe and the River Itchen. In addition, the South Staffordshire and Ground Union Canals run through the Plan area.

3.5.5 The SWLP administrative area falls predominantly within the Severn River Basin District area, with a small area to both the north and south of the Plan area also falling within the Humber and Thames River Basin District areas respectively. These River Basin Districts are sub-divided into several surface water management catchments (SWMPs)<sup>38</sup>. The SWLP is located predominantly within Avon and Warwickshire SWMC, with small sections of the Plan area to the north and south also located within the following SWMCs, as illustrated in **Figure 3.1**:

- River Humber District: Tame Anker and Mease
- River Thames District: Cherwell and Ray
- River Thames District: Cotswolds

3.5.6 It is noted that the Plan area does not lie within the River Mease SAC nutrient neutrality catchment<sup>39</sup>.

3.5.7 River Basin Management Plans (RBMP) 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. **Appendix A** provides a summary of the Severn, Humber and Thames RBMPs and HRAs which were prepared to support these plans.

3.5.8 Catchment Abstraction Management Plans (CAMS) are six-year strategies developed by the EA for managing water resources at the local level, produced for every river catchment area in England and Wales. Through the CAMS process the EA prepares an Abstraction Licensing Strategy (ALS) to manage water resources and contribute to implementation of the WFD. ALS feed into Water Resource Management Plans (WRMPs) in terms of determining and managing current and future pressures on water resources and how this will be managed by the relevant water companies.

<sup>38</sup> <https://environment.data.gov.uk/catchment-planning/>

<sup>39</sup> Note: the SWLP area is not located within the River Mease SAC nutrient neutrality catchment. WOOD, A., WAKE, H. and MCKENDRICK-SMITH, K. 2022. River Mease Special Area of Conservation – Evidence Pack. Natural England Technical Information Note. TIN200 Natural England. Available at: <http://publications.naturalengland.org.uk/publication/5254733043597312> [Date Accessed: 22/04/26].

- 3.5.9 The SWLP area is located predominantly within the Warwickshire Avon ALS catchment<sup>40</sup>, with a very small area to the north within the Tame, Anker and Mease<sup>41</sup> and very small areas to the south within the Cherwell Thame and Wye<sup>42</sup> and Cotswolds<sup>43</sup> abstraction licensing strategy areas. Only the Tame, Anker and Mease ALS catchment contains European sites; River Mease SAC and Ensor's Pool SAC. The strategies for these areas set out how water resources are used, indicating areas where water is available for further abstraction. The Warwickshire Avon ALS encompasses the River Avon with water being abstracted predominantly for public water supply, agriculture and industry. Within the catchment the ALS indicates a Hands-off-Flows (HoF)<sup>44</sup> of 2,568 ml/d at the lower end of the River Severn at Deerhurst gauging station to safeguard flows<sup>45</sup>.
- 3.5.10 For the purposes of water resource planning and supply, the country 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'<sup>46</sup>. These WRZs have been amalgamated into larger sub-regional supply areas. The Plan area is predominantly served by the Strategic Grid WRZ as supplied by Severn Trent Water (see **Figure 3.2**). A very small area along the southern boundary of the Plan area is located within the Swindon and Oxfordshire (SWOX) WRZ supplied by Thames Water. However, it is noted that Thames Water do not supply the Councils from this WRZ.

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<sup>40</sup> Environment Agency (2023) Warwickshire Avon Abstraction Licensing Strategy. Available at: <https://assets.publishing.service.gov.uk/media/642e90bc7de82b0012313726/Warwickshire-Avon-ALS.pdf> [Date Accessed: 22/04/26].

<sup>41</sup> Environment Agency (2022) Tame, Anker and Mease Abstraction Licensing Strategy. Available at: <https://assets.publishing.service.gov.uk/media/62b418848fa8f53572e3db13/Tame-Anker-and-Mease-abstraction-licensing-strategy.pdf> [Date Accessed: 22/04/26].

<sup>42</sup> Environment Agency (2019) Cherwell, Thame and Wye Abstraction Licensing Strategy. Available at: <https://www.gov.uk/government/publications/cherwell-thame-and-wye-catchment-abstraction-licensing-strategy> [Date Accessed: 22/04/26].

<sup>43</sup> Environment Agency (2019) Cotswolds Abstraction Licensing Strategy. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/796112/Cotswolds-Abstraction-Licensing-Strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/796112/Cotswolds-Abstraction-Licensing-Strategy.pdf) [Date Accessed: 22/04/26].

<sup>44</sup> HoF is a condition attached to an abstraction licence which states that if a river flow falls below the level specified on the licence, the abstractor will be required to reduce or stop the abstraction.

<sup>45</sup> Environment Agency (2023) Warwickshire Avon Abstraction Licensing Strategy. Available at: <https://assets.publishing.service.gov.uk/media/642e90bc7de82b0012313726/Warwickshire-Avon-ALS.pdf> [Date Accessed: 22/04/26].

<sup>46</sup> 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=2ahUKEwiY8ei5gu2GAXkZ0EAHUC5D\\_kQFnoECB0QAQ&usq=AOvVaw3uO8-LrFuwwJ2kHu2ixaCT](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=2ahUKEwiY8ei5gu2GAXkZ0EAHUC5D_kQFnoECB0QAQ&usq=AOvVaw3uO8-LrFuwwJ2kHu2ixaCT) [Date Accessed: 22/04/26].

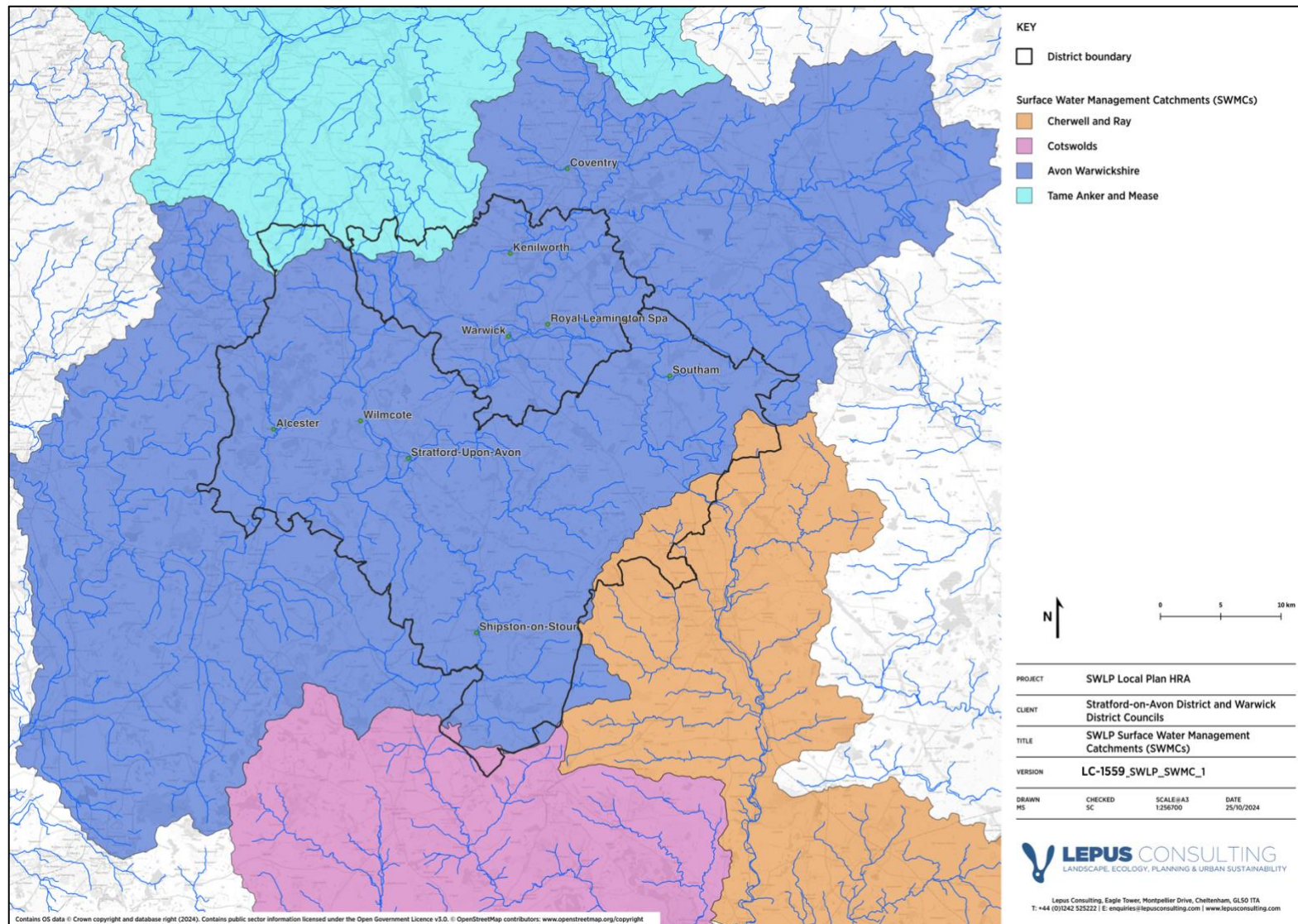


Figure 3.3: SWLP Surface Water Management Catchments (SWMCs)

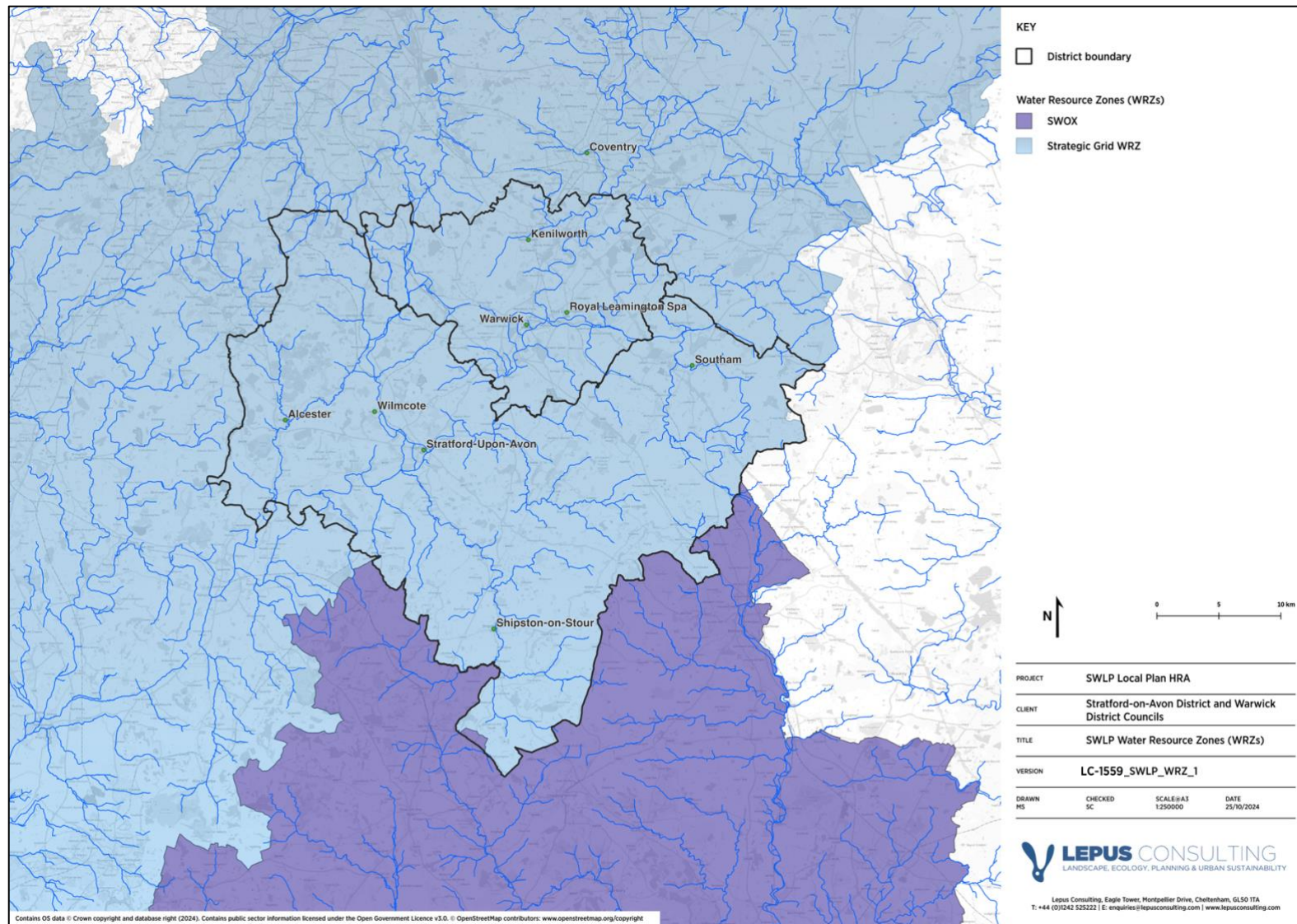


Figure 3.4: SWLP Water Resource Zones (WRZs)

- 3.5.11 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 WFD.
- 3.5.12 The water service provider for the Plan area is Severn Trent Water. 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.
- 3.5.13 Severn Trent Water's WRMP (WRMP24) covers the period from 2025 to 2050<sup>47</sup>. Water supply is provided from a mix of reservoirs, rivers and groundwater<sup>48</sup>. The WRMP24 outlines a number of demand management measures that need to be taken to ensure continued sustainable sources of supply including demand management (such as smart metering and home efficiency checks), leakage reduction and sustainable abstraction. The largest planned schemes which are still being considered through the WRMP drafting process involve transfers out of the WRZ to support other WRZs and an expansion of water treatment works.
- 3.5.14 As set out in **paragraph 3.5.8**, abstractions for water supply are managed by the EA through licences issued in line with their CAMS process.
- 3.5.15 WRMPs are linked to Drought Plans 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. The Severn Trent Water Drought Plan covers the period from 2022 to 2027<sup>49</sup>. This sets out a series of actions to address droughts including actions to reduce customer demand for water and identifies catchments (including the River Avon) where drought orders and permits may be required.
- 3.5.16 Severn Trent Water provides wastewater services to the Plan area with a small area to the southwest of the study area being covered by Thames Water. Sewerage Undertakers have a duty under Section 94 of the Water Industry Act 1991 to provide sewerage and treat wastewater arising from new domestic development<sup>50</sup>.

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<sup>47</sup> Severn Trent Water (2024) Water Resource Management Plan WRMP24. Available at <https://www.severntrent.com/about-us/our-plans/water-resources-management-plan/wrmp24-final-documents/> [Date accessed 14/05/26].

<sup>48</sup> JBA Consulting (2024) Coventry and Warwickshire Sub-Regional Water Cycle Study – Stage 1.

<sup>49</sup> Severn Trent Water (2022) Final Drought Plan 2022 - 2027.

<sup>50</sup> JBA Consulting (2024) Coventry and Warwickshire Sub-Regional Water Cycle Study – Stage 1.

- 3.5.17 A Stage 1 Water Cycle Study (WCS)<sup>51</sup> and a Stage 2 WCS<sup>52</sup> were undertaken on behalf of LPAs within the sub-region including Stratford-on-Avon and Warwick District Council<sup>53</sup>. These studies assess the impacts on water supply, wastewater collection and treatment and water quality from future SWLP development. Severn Trent Water provided an assessment of Wastewater Treatment Works (WwTWs) serving growth in the Plan area based on hydraulic capacity and headroom in the environmental permit. The WCSs also contains a flow permit assessment. This identified that whilst proposed growth in the sub-region can be accommodated at a number of WwTW, some treatment works may require upgrades to ensure growth can occur without causing flow permits to be exceeded.
- 3.5.18 As noted in **paragraph 3.5.5**, the plan area predominantly falls within hydrological catchments associated with the Severn Estuary and to a lesser extent the Humber Estuary. The Severn Estuary SAC and Severn Estuary Ramsar sites are hydrologically linked to the Plan area via the River Avon which is a tributary of the River Severn. The Humber Estuary SAC and Humber Estuary Ramsar are linked to the plan area via the Blythe Rivers operational catchment.
- 3.5.19 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*), Allis Shad (*Alosa alosa*) and European eel (*Anguilla anguilla*).
- 3.5.20 The 'Unlocking the Severn' project<sup>54</sup>, delivered by the Canal and Rivers Trust in partnership with the Severn Rivers Trust, the Environment Agency and Natural England, was completed in 2023. It delivered four new fish passes along the River Severn in Worcestershire, together with modifications to structures on the River Teme, restoring connectivity to approximately 158 miles of river habitat to allow fish to migrate upstream. Monitoring, including environmental DNA surveys, has confirmed that sufficient numbers of Twaite Shad have successfully passed all four fish passes and regained access to historic spawning grounds. The River Severn RBMP sets out several catchment partnership measures for the Warwickshire Avon catchment, which include creation of fish passes to reduce barriers to fish movement further up the River Severn catchment<sup>55</sup>.

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<sup>51</sup> JBA Consulting (2024) Coventry and Warwickshire Sub-Regional Water Cycle Study – Stage 1.

<sup>52</sup> JBA Consulting (2026) South Warwickshire Water Cycle Study – Stage 2

<sup>53</sup> LPAs included Nuneaton and Bedworth Borough Council, Coventry City Council, Rugby Borough Council, Warwick District Council, North Warwickshire Borough Council and Stratford-on-Avon District Council.

<sup>54</sup> Rivers and Canals Trust. Unlocking the Severn Project. Available at: <https://unlockingthesevern.co.uk/our-fish-passes/> [Date Accessed: 24/04/26].

<sup>55</sup> Environment Agency (2022) Severn River Basin Management Plan. <https://www.gov.uk/guidance/severn-river-basin-district-river-basin-management-plan-updated-202> [Date Accessed: 24/04/26].

- 3.5.21 In correspondence received by the Councils in 2022 Natural England note that migratory fish species associated with the Humber Estuary SAC and the Humber Estuary Ramsar include Sea Lamprey and River Lamprey. The River Lamprey has been recorded as far upstream as the River Dove (on the Staffordshire/Derbyshire border)<sup>56</sup>.
- 3.5.22 Any potential deterioration in water quality or habitat outside the Severn Estuary SAC and Ramsar or the Humber Estuary SAC and Ramsar as a result of the SWLP may have implications for the migration of fish to upstream spawning habitat if it results in a barrier to movement. The impact of the SWLP 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 considers that Good Ecological Status under the WFD is an appropriate standard for functionally linked watercourse<sup>57</sup>.
- 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), European sites were screened for potential hydrological pathways of impact. This review looked at European sites within the Plan area and others further afield which are hydrologically linked to the Plan area and are also hydrologically sensitive including impacts upon functionally linked watercourses. **Table 3.3** indicates those European sites that will be scoped into the screening assessment (**Section 4**) for further consideration in the HRA process in terms of hydrology pathways of impact.
- 3.5.24 The HRA AA for the WRMP water supply options concluded that established standards and best-practice construction mitigation measures are sufficient to avoid adverse effects upon these European sites. For several options, the need for further hydrological assessment and surveys to confirm the presence and use of offsite functionally linked watercourses was identified prior to project-level HRAs. Additional mitigation, such as restrictions on abstraction licence volumes and timing, and reviews of HoF requirements, was also identified as necessary to ensure no adverse effects occur.
- 3.5.25 The WRMP is based on population projections and forecasts to 2050-2051, which includes the Plan area. WRMPs are updated every five years and therefore there is an opportunity for the WRMP to adapt to higher growth levels in WRMP29. It can, therefore, be concluded that the SWLP will not result in a likely significant effect on any European sites from increased water demand, either alone or in combination with all other new plans and projects that would be served by the public water supply. Water quantity impacts can consequently be scoped out of the HRA process.

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<sup>56</sup> Natural England. 2022. Letter to Lepus Consulting 4<sup>th</sup> August 2022. Consultation: South Warwickshire Local Plan (SWLP) – Sustainability Appraisal (SA) / Strategic Environmental Assessment (SEA) Scoping Report.

<sup>57</sup> 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](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/307788/river-basin-planning-standards.pdf) [Date Accessed: 24/04/26].

3.5.26 Taking into consideration potential changes in water quality (through surface water run-off and discharges from WwTWs), European sites were screened for potential hydrological impact pathways. This review looked at European sites which are hydrologically linked to the Plan area and hydrologically sensitive, including impacts upon functionally linked watercourses. **Table 3.3** indicates those European sites that will be scoped into the screening assessment (**Chapter 4**) for further consideration in the HRA process in terms of water quality impacts.

**Table 3.3: Review of water quality impact pathways to European sites within the influence of the SWLP**

European site name	Is the European site sensitive to a change in water quality impacts and is it hydrologically connected to the plan area?	Will the European site be scoped in for further assessment in the HRA process
Bredon Hill SAC	<p>Bredon Hill SAC is an outlier of the Cotswold Hills and is located to the south of Pershore in the district of Wychavon. Its qualifying feature is the violet click beetle (<i>Limoniscus violaceus</i>). The SAC comprises habitats that are dominated by mixed broad-leaved woodland and calcareous rich grasslands.</p> <p>Natural England's supplementary advice indicates that Bredon Hill SAC requires an appropriate hydrological regime to be maintained on site in order to sustain the deadwood habitat, including moist decaying timber, upon which the violet click beetle relies. However, water quality and water quantity issues are not identified within the SIP as a threat at the SAC. Taking into account the distance of the SAC from the Plan area (over 11km to the south west) and the topography of the SAC, there are unlikely to be water receptors that connect development proposed in the SWLP with the SAC.</p>	No
Ensor's Pool SAC	<p>Ensor's Pool SAC lies on the western edge of Nuneaton in the north of Warwickshire and formed in an abandoned clay pit and is ground water fed. Its qualifying feature is native white-clawed crayfish (<i>Austropotamobius pallipes</i>). The SIP for the SAC does not identify water quality or water quantity issues as a threat at the SAC.</p> <p>As part of the HRA work undertaken in support of the adopted Warwickshire Minerals Plan HRA, the Environment Agency recommended application of a 3km catchment within which water impacts are likely<sup>58</sup>. Taking into account the distance of the SAC from the Plan area (more than 14km to the north) and the fact that it is ground water fed, there are unlikely to be water receptors that connect development proposed in the SWLP with the SAC.</p>	No
Lyppard Grange Ponds SAC	<p>Lyppard Grange Ponds SAC is fed by rainwater, springs and run off and is not hydrologically connected to the River Severn catchment. Its qualifying feature is Great Crested Newt (<i>Triturus cristatus</i>). The SIP for the SAC does not identify water quality or water quantity issues as a threat at the SAC. As such there are unlikely to be water receptors that connect development proposed in the SWLP with the SAC.</p>	No
Dixton Woods SAC	<p>Dixton Wood SAC comprises a steep east facing woodland surrounded by permanent grassland, situated in the foothills of the Cotswold Scarp. Its qualifying feature is the violet click beetle (<i>Limoniscus violaceus</i>).</p> <p>Natural England's supplementary advice indicates that Dixton Wood SAC requires an appropriate hydrological regime to be maintained on site in order to sustain the deadwood habitat, including moist decaying timber, upon which the violet click beetle relies. However, the SIP for the SAC does not identify water quality or water quantity issues as a threat at the SAC.</p>	No

<sup>58</sup> Warwickshire County Council (2021). Habitats Regulations Assessment. SCREENING DECISION AND APPROPRIATE ASSESSMENT UPDATED, September 2021. <https://www.warwickshire.gov.uk/mineral-waste-plans/minerals-development-framework/> Available at: [Date Accessed: 25/04/26].

European site name	Is the European site sensitive to a change in water quality impacts and is it hydrologically connected to the plan area?	Will the European site be scoped in for further assessment in the HRA process
	Taking into account the distance of the SAC from the Plan area (more than 24km to the west) and the topography of the SAC, there are unlikely to be water receptors that connect development proposed in the SWLP with the SAC.	
Oxford Meadows SAC	Oxford Meadows SAC is situated on the broad floodplain of the River Thames to the west and north-west of Oxford. It comprises an extensive complex of meadows and pastures which support species-rich grassland vegetation. A very small area of the far southern section of the SWLP area lies within the Thames Cotswold SWMC ( <b>Figure 3.4</b> ). This area drains into the River Evenlode, which joins the River Thames upstream of Oxford Meadows SAC. The SIP for the SAC indicates that it is vulnerable to hydrological changes associated with more prolonged and frequent flood events and management of water levels. Given the SAC is located more than 26km from the Plan area there are unlikely to be water receptors that connect development proposed in the SWLP with the SAC.	No
River Mease SAC	The River Mease SAC is designated for a number of river qualifying habitats, White Clawed Crayfish; Spined loach ( <i>Cobitis taenia</i> ); Bullhead ( <i>Cottus gobio</i> ) and; Otter ( <i>Lutra lutra</i> ). The Plan area does not lie within the River Mease SAC nutrient neutrality catchment <sup>59</sup> .	No
Severn Estuary SAC Severn Estuary Ramsar	The SWLP plan area is predominantly located within the River Severn District Basin and the Avon Warwickshire SWMC. The Severn Estuary SAC, SPA and Severn Estuary Ramsar are located downstream of the plan area and connected via the River Avon (and its tributaries) which meets the River Severn at Tewkesbury. The qualifying features of the SAC and Ramsar are likely to use watercourses upstream of the designations for certain stages of their life cycle (spawning) and therefore functionally linked watercourses are potentially located within / connected to the Plan area.	Yes
Humber Estuary SAC Humber Estuary Ramsar	A small area of the SWLP plan area is located within the Humber River District Basin and the Tame Anker Mease SWMC. The Humber Estuary SAC, SPA and Humber Estuary Ramsar are located downstream of the plan area and connected via the River Tame (and its tributaries e.g. the River Blythe) which meets the River Trent near Airewas, and ultimately feeds into the Humber Estuary. The qualifying features of the SAC and Ramsar are likely to use watercourses upstream of the designations for certain stages of their life cycle (spawning) and therefore functionally linked watercourses are potentially located within / connected to the Plan area.	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.

<sup>59</sup> Note: the SWLP area is not located within the River Mease SAC nutrient neutrality catchment. WOOD, A., WAKE, H. and MCKENDRICK-SMITH, K. 2022. River Mease Special Area of Conservation – Evidence Pack. Natural England Technical Information Note. TIN200 Natural England. Available at: <http://publications.naturalengland.org.uk/publication/5254733043597312> [Date Accessed: 22/04/26].

- 3.6.2 A common approach taken across the UK to address recreational impacts at European sites is to establish a buffer zone or 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). Where available, buffer distances have been applied to determine potential pathways of recreational and urbanisation effects from the SWLP.
- 3.6.3 The broad principle of buffer zones is one component of the HRA screening process for recreational pressures. 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<sup>60</sup>. However, this review recognises that some visitors are prepared to travel longer distances to visit particular sites, for instance coastal and wetland sites.
- 3.6.4 As such, a precautionary distance of 15km has been applied to the scoping of European sites which may be sensitive to potential recreational impact pathways. This scoping exercise is detailed in the following paragraphs and draws on a review of Natural England data which identifies vulnerabilities at each European site (**Appendix B**).
- 3.6.5 The Severn Estuary is designated as a SAC and Ramsar site due to the habitats within the estuary which comprise saltmarshes, subtidal sandbanks, sandflats, reefs and estuaries. These habitats in turn support an internationally important population of waterbirds which occur on passage/over winter including a range of both wildfowl and wader species and from part of the SAP and Ramsar designations. At their closest point, the Severn Estuary SAC, SPA and Ramsar designations are located over 54.6km from the Plan area. Given this distance it is considered that there will be no LSEs from the SWLP at the Severn Estuary designations themselves from recreation impacts.

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<sup>60</sup> 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.

3.6.6 In addition to the area of estuary within the Severn Estuary designation boundaries, it is also recognised that birds use a range of wetlands, waterbodies and low-lying farmland outside the designations during the winter and for migration. Natural England therefore commissioned several studies to identify sites of importance to the bird populations within, and outside of, the Severn Estuary SPA and underpinning Severn Estuary SSSI designation. The fifth phase of this study provided a desk-based review of best available data on birds using wetlands sites from the last 10 years with the aim of understanding better the role of functionally linked land, outside the designated boundary of the SPA within Gloucestershire and Worcestershire along the River Severn and River Avon valleys<sup>61</sup>. This commission identified 21 sites, along the River Severn and River Avon corridor, that held more than the equivalent of 1% of the SPA population of one or more species for 50% or more of months within one or more of three Wetland Bird Survey (WeBS) counting seasons.

3.6.7 Where development has the potential to increase recreation use at FLL, particularly if the development location is very close or large, there may need to be additional consideration or checks to ensure risks are adequately addressed. Four of the 21 functionally linked sites (**paragraph 3.6.6**) are located within 15km of the Plan area as follows:

- Gwen Finch Wetland Reserve – approximately 14km to the south west
- John Bennett Nature Reserve – approximately 13km to the south west
- Pershore Wetland Meadows – approximately 9.3km to the south west
- The Moors Upton Warren – approximately 10km to the west

<sup>61</sup> Palmer, E. & Smart, M. (2021). Identification of wintering and passage roosts on functionally linked land of the Severn Estuary - Gloucestershire and Worcestershire (Phase 5). Natural England Commissioned Reports. NECR401. Available at: <https://publications.naturalengland.org.uk/publication/5694125407207424> [Date Accessed: 25/04/26].

- 3.6.8 Gwen Finch Reserve is a non-access reserve and the permissive path to the John Bennett Reserve leads only to the hide and is therefore not used by passing ramblers<sup>62</sup>. It is therefore not likely that new development in the SWLP area will increase disturbance at these sites and they can be scoped out. Disturbance is more of an issue at Pershore Wetland Meadows because the site is heavily used by local residents, for whom it was intended as an amenity site<sup>63</sup>. Given recreational pressures are from the local residents for whom the site was intended and its distance from the Plan area, it is unlikely that new development from the SWLP will increase recreational disturbance at the Meadows and this site can be scoped out. In terms of the Moors Upton Warren, the Moors (northern sector) and the Flashes (southern sector) both have well-policed access points, and entry is open only to those who are members of the Worcestershire Wildlife Trust, or who have purchased a day permit. In addition, the Flashes are surrounded by a fox-proof fence to deter mammalian predators<sup>64</sup>. It is therefore unlikely that new development associated with the SWLP will increase recreational disturbance at Moors Upton Warren and it can be scoped out. In conclusion recreational impacts upon areas of FLL associated with the Severn Estuary SPA and Ramsar can be scoped out of the HRA process.
- 3.6.9 Bredon Hill SAC is an outlier of the Cotswold Hills and is located to the south of Pershore in the district of Wychavon. Part of the SAC is also designated as a National Nature Reserve (NNR) which is managed by Natural England. Its qualifying feature is the Violet Click Beetle (*Limoniscus violaceus*). The SAC comprises habitats that are dominated by mixed broad-leaved woodland and calcareous rich grasslands. Natural England's supplementary advice for the SAC indicates that the historic management of the site has resulted in the establishment of a number of veteran and ancient trees that give rise to deadwood habitat. This deadwood habitat is key to the survival of many saproxylic invertebrates, including the violet click beetle<sup>65</sup>. Bredon Hill SAC is one of only three sites in the UK, alongside Windsor Forest and Great Park SAC and Dixton Wood SAC, known to support the Violet Click Beetle. Potential habitat linkages between these sites, in particular between Bredon Hill SAC and Dixton Wood SAC which are approximately 7.5km apart, are essential to maintain and restore the conservation status of this species.

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<sup>62</sup> Palmer, E. & Smart, M. (2021). Identification of wintering and passage roosts on functionally linked land of the Severn Estuary - Gloucestershire and Worcestershire (Phase 5). Natural England Commissioned Reports. NECR401. Available at: <https://publications.naturalengland.org.uk/publication/5694125407207424> [Date Accessed: 25/04/26].

<sup>63</sup> Palmer, E. & Smart, M. (2021). Identification of wintering and passage roosts on functionally linked land of the Severn Estuary - Gloucestershire and Worcestershire (Phase 5). Natural England Commissioned Reports. NECR401. Available at: <https://publications.naturalengland.org.uk/publication/5694125407207424> [Date Accessed: 25/04/26].

<sup>64</sup> Palmer, E. & Smart, M. (2021). Identification of wintering and passage roosts on functionally linked land of the Severn Estuary - Gloucestershire and Worcestershire (Phase 5). Natural England Commissioned Reports. NECR401. Available at: <https://publications.naturalengland.org.uk/publication/5694125407207424> [Date Accessed: 25/04/26].

<sup>65</sup> Natural England. 2019. European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Bredon Hill Special Area of Conservation (SAC). Available at: <http://publications.naturalengland.org.uk/file/4991509330132992> [Date Accessed: 25/04/26].

- 3.6.10 Bredon Hill is not managed as a tourist destination in its own right. There are no formal large car parks serving recreation at or close to Bredon Hill SAC. Car parking is predominantly on street within the surrounding villages which in itself is very limited as roads are narrow and often single track. There is a small car park located at Elmley Castle Picnic Place in the village of Elmley Castle, which can be used as a starting point for local walks, but this is very small and likely to support less than 10 cars on any occasion. There are no visitor facilities, such as a café and or toilets, available at Bredon Hill. Given that the key conservational issues at Bredon Hill SAC are associate with the maintenance of deadwood habitat and connectivity with other Violet Click Beetle populations, the distance of the SAC from the Plan area (more than 11km to the south west) and lack of recreational promotion / facilitates, it is considered that recreational pressures from the SWLP are unlikely to have an adverse effect upon the SAC and it can be scoped out.
- 3.6.11 Ensor's Pool SAC lies within the Ensor's Pool Nature Reserve on the western edge of Nuneaton in the north of Warwickshire and is formed in an abandoned clay pit. It is located within an urban setting. The SAC was designated as it supported a large population of White-Clawed Crayfish (*Austropotamobius pallipes*). Recent surveys have however recorded no crayfish in the Pool, the cause of which may be associated with the spread of 'Crayfish Plague'<sup>66</sup>. Whilst there are footpaths which run within the Nature Reserve, recreational impacts are not identified as a threat/pressure at the SAC within the SIP or Natural England's supplementary advice for the Crayfish. Given the distance of this SAC from the Plan area (14.7km to the north) and its local recreational importance rather than national recreational draw, it can be concluded that recreational pressures are unlikely to be increased at the SAC as a result of the SWLP and it can be scoped out.
- 3.6.12 Lyppard Grange Ponds SAC comprises two field ponds located in the grounds of the former Lyppard Grange Farm, situated to the east of Worcester city. The site is owned and managed by Worcester City Council<sup>67</sup>. The two ponds, along with the surrounding terrestrial habitats, support a large breeding colony of Great Crested Newts (GCNs) (*Triturus cristatus*), and are a remnant of a formerly more widespread newt habitat where large numbers of ponds were maintained for agricultural purposes<sup>68</sup>. Recreational impacts are not identified as a threat/pressure at Lyppard Grange Ponds SAC within the SIP or Natural England's supplementary advice. Given the distance of this SAC from the Plan area (14.9km to the west) and its local recreational importance rather than national recreational draw, it can be concluded that recreational pressures are unlikely to be increased at the SAC as a result of the SWLP and it can be scoped out.
- 3.6.13 In summary it is considered unlikely that any European site within 15km of the SWLP area will be affected by increased recreational pressures associated with the SWLP and this pathway of impact can be scoped out.

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<sup>66</sup> David Rogers Associated (2015) White-clawed crayfish survey for Ensor's Pool SSSI/SAC (Warwickshire). Natural England Publication IPENS065. Available at:  
<https://publications.naturalengland.org.uk/publication/6577286383927296> [Date Accessed: 25/04/26].

<sup>67</sup> <https://www.worcester.gov.uk/leisure-parks-allotments/parks-green-spaces/conservation-wildlife-sites/lyppard-grange-local-nature-reserve>

<sup>68</sup> Natural England (2019) European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Lyppard Grange Ponds Special Area of Conservation (SAC). Available at:  
<https://publications.naturalengland.org.uk/file/6272367249063936> [Date Accessed: 25/04/26].

### 3.7 Urbanisation effects

- 3.7.1 Urbanisation effects typically occur 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 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.
- 3.7.2 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 400m 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.
- 3.7.3 Urbanisation effects typically occur 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 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 of approximately 400m. There are no European sites located within 400m of the SWLP administrative area, with the closest, Bredon Hill SAC, located 11.1km to its south west. Therefore, the SWLP is unlikely to have an urbanisation effect upon any European site and this pathway of impact can be scoped out.

### 3.8 European sites and threats and pressures

- 3.8.1 The impact pathways which have the potential to affect European sites listed in **Table 3.1** are summarised in **Table 3.4**. These will form the basis of the HRA screening assessment.

**Table 3.4:** Summary of impact pathways to European sites which may be associated with the SWLP

European site name	Air Pollution Impact Pathway?	Water Quality and/or Quality Changes Impact Pathway?	Recreational Pressure Impact Pathway?	Urbanisation Impact Pathway?
Bredon Hill SAC	No	No	No	No
Dixton Woods SAC	No	No	No	No
Ensor's Pool SAC	No	No	No	No
Humber Estuary SAC	No	Yes	No	No
Humber Estuary Ramsar	No	Yes	No	No
Humber Estuary SPA	No	No	No	No
Lyppard Grange Ponds SAC	No	No	No	No
Oxford Meadows SAC	No	No	No	No

Severn Estuary SAC	No	Yes	No	No
Severn Estuary Ramsar	No	Yes	No	No
Severn Estuary SPA	No	No	No	No

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## 4 Screening of the South Warwickshire Local Plan

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 European sites scoped into the HRA process in Chapter 3 of this report. This chapter screens each component of the Regulation 19 SWLP for LSEs and identifies the requirement for AA.

### 4.2 Screening

4.2.1 The SWLP is not directly connected with or necessary to the management of any European site and as such it is not exempt 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 SWLP will have an LSE on any European site, either alone or in-combination with other aspects of the SWLP or other plans and projects.

4.2.2 In order to identify LSEs upon European sites, each component of the Regulation 19 SWLP 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<sup>69</sup>. This detailed assessment has informed the test of likely significance i.e. will the SWLP have an LSE, alone, or in-combination, at a European site.

4.2.3 It is concluded that LSEs, from either the SWLP alone or in-combination with other plans or projects, could be screened out for a number of components. 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 SWLP, and all site allocations, were however considered to have an LSE in-combination with other plans and projects:

<sup>69</sup> InfoCuria (2018) Case C-323/17. Available at:

<http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN> [Date Accessed: 25/04/26].

**Table 4.1:** Summary of screened in components of the SWLP (Note: only components screened into the HRA process have been included in the summary table below. The screening outcome for all components is provided at Appendix C)

Policy Number	Policy / Policy Direction Name	Screening Category
DS.2	Spatial Development Strategy	L
DS.3	Meeting our Development Needs to 2050	L
DS.5	Local Growth Locations – Employment	L
DS.6	Local Growth Locations – Mixed Use Community & Town Centre	L
DS.7	Local Growth Locations – Housing	L
DS.8	Other Growth Locations	L
DS.9	Core Opportunity Area (COA)	L
DS.10	Major Investment Sites	L
DS.11	Rural Economy	L
DS.12	Rural Housing	L
B1	Hatton New Community	L
[Client Note: Please provide policy number]	Long Marston Airfield New Community	L
SG01	South of Coventry Strategic Growth Location	L
SG02	Stoneleigh Employment Group	L
SG03	Coventry Airport	L
SG04	South of Kenilworth	L
SG05	East of Lillington	L
SG06	Land at Blackdown, North of Leamington Spa	L
SG07	Land North of Leamington Spa	L
SG08	West of Warwick	L
SG09	South of Europa Way Group	L
SG10	Bishops Tachbrook Group	L
SG12	Southam	L
SG13	Gaydon	L

Policy Number	Policy / Policy Direction Name	Screening Category
SG15	Wellesbourne East	L
SG18	Clopton Quarter	L
SG19	West Shottery (Site A and B)	L
SG20	North and East of Bidford	L
SG23	Henley-in-Arden	L

- 4.2.5 Likely significant in-combination water quality effects were identified at functionally linked watercourses associated with the Severn Estuary SAC, Severn Estuary Ramsar, Humber Estuary SAC and Humber Estuary Ramsar.

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## 5 Water Quality Appropriate Assessment

### 5.1 Introduction

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

5.1.2 All policies, listed in **Table 4.1**, and all allocations were screened into the HRA process for consideration in an AA due to water quality LSEs (**Appendix C**).

5.1.3 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 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 European sites and their qualifying features.

5.1.4 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 and manage the treatment of wastewater. This is undertaken through a catchment-based approach and provides protection for European sites and ensures compliance with the WFD<sup>70</sup>.

5.1.5 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 a good ecological status or potential, good chemical status or good groundwater status every single element assessed must be at a 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.

5.1.6 The scoping assessment (presented in **Chapter 3**) identified water quality LSEs at the following four European sites:

- Humber Estuary SAC
- Humber Estuary Ramsar
- Severn Estuary SAC
- Severn Estuary Ramsar

<sup>70</sup> [https://environment.ec.europa.eu/topics/water/water-framework-directive\\_en](https://environment.ec.europa.eu/topics/water/water-framework-directive_en).

## 5.2 Mitigation

- 5.2.1 There are a number of policies set out in the SWLP which require the protection of water quality. Policy DS.1 (Environmental Mitigation and Compensation) requires development to avoid environmental harm wherever possible and minimise and mitigate impacts where avoidance is not possible. This applies to ecosystem services including water quality, water supply and natural flood management. Policy ID.9 (Reducing Flood Risk) does not support development which increases flood risk and requires development to minimise the impact of surface water runoff, including the use of permeable surfaces, to reduce runoff from developments. Use of permeable surfaces will both reduce run off and also improve the quality of water run-off. Policy ID.12 (Multifunctional Sustainable Urban Drainage Systems (SuDS)) requires developments to incorporate SuDS to attenuate, treat and manage surface water runoff, thereby reducing runoff volumes, sediment and pollutant loads before discharge to the water environment and helping to protect downstream water quality. Similarly, Policy ID.13 (Green and Blue Infrastructure) supports natural water management and water quality improvements by protecting and enhancing green and blue infrastructure networks and providing opportunities for natural filtration, storage and flow regulation.
- 5.2.2 Policy ID.11 (Water Supply and Wastewater Infrastructure) ensures new development is only permitted where adequate water supply and wastewater infrastructure capacity is available. It thereby prevents increases in wastewater discharges or abstraction pressures that could adversely affect downstream water quality and protects the ecological integrity of hydrologically connected European sites.
- 5.2.3 Policy ID.10 (Water Efficiency) requires water efficient design in new development, which reduces overall potable water demand and helps to minimise the volume of water requiring treatment associated with new growth.
- 5.2.4 Policy BN.8 (Pollution and Environmental Quality, **Box 1**) provides a direct basis for controlling contaminants affecting downstream designated sites by controlling and regulating pollution pathways.

### **Box 1: Extract from Policy BN.8 – Pollution and Environmental Quality**

Development must not cause unacceptable pollution or environmental harm to human health, amenity, or the natural environment. All development must apply the mitigation hierarchy to avoid, minimise, and mitigate pollution from:

- Air, water and soil contamination;
- Noise, vibration and odour;
- Artificial light; and
- Other harmful emissions or discharges

#### **A. Mitigation Hierarchy**

Where harm cannot be fully avoided or mitigated, development may only be permitted if:

1. Residual harm is compensated or offset through measurable environmental improvements, habitat creation or enhancement, or the delivery of environmental or biodiversity net gain in line with DS1 Environmental Mitigation and Compensation;
2. Measures are secured, monitored, and managed long-term, proportionate to the impact.
3. Development does not contribute to unacceptable cumulative or in-combination pollution impacts when considered alongside existing or planned development.

#### **B. Pollution Sensitive Development**

Development sensitive to pollution (including housing, schools, hospitals, care homes, parks and recreational spaces) will only be permitted where:

- it would not result in unacceptable harm to human health or quality of life due to existing or historic land uses; and
- adequate avoidance, mitigation, or compensation measures can be implemented.

5.2.6 In addition, Policy BN.1 (Protection of Sites, Habitats and Species) provides overarching protection for designated sites and important habitats requiring development to avoid, minimise and mitigate adverse effects. This policy applies to all allocations and any other windfall development to come forward through the SWLP.

### **5.3 Baseline information**

#### **Humber Estuary SAC and Ramsar**

5.3.1 The Humber Estuary is the UK's second-largest coastal plan estuary (370 km<sup>2</sup>) formed at the confluence of the River Trent and River Ouse. It consists of extensive wetland and coastal habitats and nutrient-rich sediment that supports a wide variety of wintering, passage and breeding birds (especially geese, ducks and waders)<sup>71</sup>. The estuary and its tributaries form the receiving environment for a wide hydrological catchment that includes the Local Plan area. As noted in **Section 5.3**, migratory species of fish for which the 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. Natural England's SIP<sup>72</sup> identifies water pollution and changes in water quality as a key pressure affecting the ecological condition of the Humber Estuary. Therefore, a change in the quality of water in these upstream spawning locations has the potential to adversely impact these qualifying features.

<sup>71</sup> Yorkshire Marine Nature Partnership. Nd. Humber Estuary SPA. Available at: <https://yorkshireremarinaturepartnership.org.uk/manage/marine-protected-areas/humber-estuary-spa/> [Date accessed: 15/06/26]

<sup>72</sup> Natural England (2014), Site Improvement Plan: Humber Estuary (SIP108). Available at <https://publications.naturalengland.org.uk/publication/5427891407945728> [Date accessed: 15/06/26].

5.3.2 Although improvements in wastewater treatment over recent decades have contributed to improved estuarine water quality, parts of the Humber continue to experience elevated nutrient concentrations following periods of heavy rainfall, WwTWs discharges, and agricultural runoff. The Humber Region has protected sites for water quality classified under the WFD. However, consultation with the EA indicates failures of WFD standards in recent years, and identifies storm foul sewer discharges and diffuse pollution from agriculture as ongoing stressors. As a result, the upper, middle, and lower Humber is considered to have 'moderate' ecological status, indicating it requires improvement<sup>73</sup>.

5.3.3 Natural England's Supplementary Advice for the Humber Estuary SAC and Ramsar highlights a need to maintain or restore water quality to levels that support estuarine habitat functioning and avoid excessive nutrient enrichment. The Advice also identifies targets relating to nutrient concentrations, dissolved oxygen levels, and contaminant levels required to support the designated features, including benthic communities and intertidal habitats.

#### **Severn Estuary SAC and Ramsar**

5.3.4 As set out in **Section 3.5**, the Severn Estuary SAC, SPA and Ramsar is located between Wales and England with extensive intertidal mudflats and sandflats, rocky platforms and islands<sup>74</sup>. The Severn Estuary SAC hosts estuaries, mudflats and sandflats not covered by seawater at low tide, Atlantic salt meadows, sandbanks covered by sea water, and reefs. The site also supports Sea Lamprey (*Petromyzon marinus*), River Lamprey (*Lampetra fluviatilis*) and Twaite Shad (*Alosa fallax*).

5.3.5 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.

## **5.4 Appropriate Assessment**

5.4.1 The findings of the Phase 2 Water Cycle Study (WCS) and associated water quality modelling have informed this AA. The WCS was undertaken by JBA Consulting in consultation with the relevant statutory consultees, including the Environment Agency, Severn Trent Water and neighbouring local planning authorities.

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<sup>73</sup> Environment Agency (2025), Environmental Capacity in Industrial Clusters Project, Executive Summary (July 2025). Available at <https://www.gov.uk/government/publications/environmental-capacity-for-industrial-clusters-project-summary> [Date accessed: 15/05/26].

<sup>74</sup> UK Government. Nd. Severn Estuary SAC and SPA. Available at: [https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://assets.publishing.service.gov.uk/media/5dc1525ded915d1cfe538e44/Severn\\_Estuary\\_SAC\\_and\\_SPA\\_Factsheet.pdf&ved=2ahUKEwju\\_b2NubKGAXVJQUEAHS8sB0YQFnoECBIQAQ&usq=AOvVaw1C6EHSU86RzAz-fz2HUWY](https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://assets.publishing.service.gov.uk/media/5dc1525ded915d1cfe538e44/Severn_Estuary_SAC_and_SPA_Factsheet.pdf&ved=2ahUKEwju_b2NubKGAXVJQUEAHS8sB0YQFnoECBIQAQ&usq=AOvVaw1C6EHSU86RzAz-fz2HUWY) [Accessed 29.05.24]

- 5.4.2 Increased development has the potential to affect the water quality of internationally designated sites through increased treated effluent discharges from wastewater treatment works (WwTWs) and through polluted surface water runoff. Under the requirements of the Water Framework Directive (WFD), water bodies should not deteriorate in status, either in terms of their overall classification or the status of individual physico-chemical quality elements.
- 5.4.3 Discharges from WwTWs are regulated by the Environment Agency through the Environmental Permitting regime. Environmental permits specify discharge limits to ensure that receiving watercourses are able to meet their environmental objectives, including achievement of Good Ecological Status (GES) or Potential under the WFD.
- 5.4.4 The Environment Agency operational instructions on water quality planning and no-deterioration are currently being reviewed. The Phase 2 WCS indicates that previous operational instructions (now withdrawn) set out a hierarchy for how the no-deterioration requirements of the WFD should be implemented on inland waters. The potential impact of development should be assessed in relation to the following objectives (objectives extracted from the Phase 2 WCS):
- *‘Could the development cause a greater than 10% deterioration in water quality? This objective ensures that all the environmental capacity is not taken up by one stage of development and there is sufficient capacity for future growth.*
  - *Could the development cause a deterioration in WFD class of any element assessed? This is a requirement of the Water Framework Directive to prevent a deterioration in class of individual contaminants. The "Weser Ruling" (European Court of Justice, 2015) by the European Court of Justice in 2015 specified that individual projects should not be permitted where they may cause a deterioration of the status of a water body. If a water body is already at the lowest status ("bad"), any impairment of a quality element was considered to be a deterioration. Emerging practice is that a 3% limit of deterioration is applied.*
  - *Could the development alone prevent the receiving watercourse from reaching Good Ecological Status (GES) or Potential? Is GES possible with current technology or is GES technically possible after development with any potential WwTW upgrades.*
- 5.4.5 The Phase 2 WCS notes that overall WFD classification of a water body is based on a wide range of ecological and chemical classifications. The WCS water quality assessment therefore assessed three physico-chemical quality elements; Biochemical Oxygen Demand (BOD), Ammonia, and Phosphate.
- 5.4.6 To assess the potential effects of the SWLP, the Phase 2 WCS used the Environment Agency's SIMCAT water quality model<sup>75</sup>. The model compares a baseline scenario, incorporating current wastewater flows, with a future scenario reflecting the additional flows associated with planned housing and employment growth to 2050.

<sup>75</sup> SIMCAT model has been developed by the Environment Agency. Further details on modelling are provided in the JBA Phase 2 WCS.

- 5.4.7 Two principal scenarios were assessed using the SWLP information. The first considered the effects of planned growth on receiving watercourses, while the second tested the extent to which any deterioration could be mitigated through upgrades to WwTWs to the technically achievable limits (TAL).
- 5.4.8 In accordance with standard WCS methodology, a change was considered significant where modelling predicted either a deterioration of 10% or more in a parameter concentration, or a reduction in WFD classification.
- 5.4.9 The modelling identified a single significant deterioration for phosphate (at Lighthorne WwTW), comprising an 18% increase in concentration at one location. However, the water quality modelling showed that this deterioration could be fully mitigated through upgrades to the treatment processes at this WwTW (to TAL) and it is therefore considered that there will not be an adverse impact from phosphate upon the quality of water in functionally linked watercourses associated with the Severn and Humber Estuaries.
- 5.4.10 For BOD, predicted changes were minor, with a maximum deterioration of approximately 2%. Coventry Finham WwTW is currently operating below TAL for BOD and as such a 1% deterioration is predicted in the watercourse adjacent to the WwTW outfall in the TAL scenario, but this is a modelling anomaly and not considered in the WCS to be an issue of concern. No changes in WFD classification were identified downstream of any WwTW and therefore it is concluded that growth will not have an adverse impact upon the quality of water from BOD at functionally linked watercourses associated with the Severn and Humber Estuaries.
- 5.4.11 For ammonia, larger percentage increases were predicted in a small number of headwater watercourses receiving discharges from Napton WwTW, Itchen Bank WwTW, Lighthorne WwTW, Gaydon WwTW and Wellesbourne WwTW. In each case, the receiving watercourses are currently classified as having 'High' WFD status for ammonia and the WwTWs are operating at, or better than, their TAL and there is no headroom for additional improvement. As a result, although percentage increases in ammonia concentration were predicted (outside the 10% limit), no deterioration in WFD status was forecast and it remains 'High' status for ammonia.
- 5.4.12 The WCS also noted that flows from development currently assumed to drain to the Lighthorne and Gaydon catchments may alternatively be accommodated at nearby treatment works with available capacity, further reducing potential effects.
- 5.4.13 At Napton WwTW, a 43% increase in ammonia concentration was predicted associated with employment development at Brooklands Paddock, Folly Lane. Notwithstanding this percentage increase, the receiving watercourse would remain at High WFD status and there would be no reduction in water quality class. Similarly, at Itchen Bank WwTW, which is expected to serve approximately 7,400 dwellings and associated employment development, a 32% increase in ammonia concentration was predicted. However, High WFD status would be maintained and the effect dissipates downstream, with no measurable deterioration at the confluence with the River Itchen. Given this conclusion it is concluded that growth will not have an adverse impact upon the quality of water from ammonia at functionally linked watercourses associated with the Severn and Humber Estuaries.

- 5.4.14 From an HRA perspective, the WCS water quality modelling concludes that no downstream internationally designated sites would be adversely affected by the forecast changes in water quality. In all cases relevant to hydrologically connected protected sites, any deterioration could either be prevented through wastewater treatment upgrades or was not sufficient to result in a reduction in WFD class.
- 5.4.15 The WCS therefore concludes that the level of growth proposed in the South Warwickshire Local Plan is not expected to cause significant deterioration in water quality, would not prevent the achievement of WFD objectives, and would not adversely affect functionally linked watercourses and therefore the integrity of the Humber Estuary SAC, Humber Estuary Ramsar Site, Severn Estuary SAC or Severn Estuary Ramsar Site, either alone or in combination with other plans and projects.
- 5.4.16 Policies set out in **Section 5.2** will ensure water discharges from new development set out in the SWLP are managed to ensure no deterioration in water quality from surface water run-off. The high level strategic water policy framework, such as the RBMP and WRMP as set out in **Sections 3.5** and **5.1**, will also contribute to the protection of water quality in functionally linked watercourses. In addition, water quality modelling undertaken as part of the WCS has indicated that there will be no significant deterioration downstream of any European site or associated functionally linked watercourse.

## 5.5 Conclusion

- 5.5.1 Taking into consideration the protection that SWLP policies give to water quality and the outputs of the water quality modelling, it can be concluded that there will be no adverse impact on site integrity as a result of the SWLP either alone or in-combination on the Humber Estuary SAC, Humber Estuary Ramsar, Severn Estuary SAC or Severn Estuary Ramsar.

## 6 Next Steps

### 6.1 Conclusions

6.1.1 The SWLP 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 SWLP has the potential to affect the following European sites:

- Humber Estuary SAC – water quality LSE on functionally linked watercourses;
- Humber Estuary Ramsar – water quality LSE on functionally linked watercourses;
- Severn Estuary SAC – water quality LSE on functionally linked watercourses; and
- Severn Estuary Ramsar – water quality LSE on functionally linked watercourses.

6.1.2 The HRA therefore progressed to the next stage of the HRA process: Appropriate Assessment. The AA explored impacts on water quality associated with increased levels of built development in more detail against the conservation objectives of each of the above European sites.

6.1.3 The AA of water quality took into consideration the water quality modelling outputs contained in the Phase 2 WCS. The AA also took into consideration protective policies set out in the SWLP, alongside existing protection measures in existing high level strategic frameworks aimed at protecting water.

6.1.4 The AA concludes that there will be no adverse impacts on site integrity at any European site, either alone or in-combination

### 6.2 Next Steps

6.2.1 The purpose of this report is to inform the HRA of the SWLP using best available information.

6.2.2 Stratford-on-Avon District Council and Warwick District Council, as the Competent Authorities, have responsibility to make the Integrity Test, which can be undertaken in light of the conclusions set out in this report.

6.2.3 This report will be submitted to Natural England, the statutory nature conservation body, for formal consultation. The Councils 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.

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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