

# **HRA Template – Phosphorous Affected Development**

## **Habitats Regulations Assessment (HRA) Report**



Photographs show:

The Somerset Levels and Moors, obtained from the RSPB Source:  
<https://www.rspb.org.uk/our-work/conservation/landscape-scale-conservation/sites/somerset-levels-and-moors/>

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# HRA Template – Phosphorous Affected Development

## 1 Introduction

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This document is a Habitats Regulation Assessment (HRA) template report in compliance with the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended); hereafter referred to as the ‘Habitats Regulations’.

This document has been prepared to assess the potential for effects from nutrient changes caused by the proposed plan or project on the Somerset Levels and Moors Ramsar Site as required by Regulation 63 of the Habitats Regulations.

This HRA template has been developed for use by applicants of plans or projects that meet the definition of a ‘typical development’ (as defined in Appendix A). The plans and projects should be located within the Somerset West and Taunton Council area and have the potential to affect only the Somerset Levels and Moors Ramsar Site through risk of discharging phosphorous into its catchment area.

Appendix A contains important background information and guidance on completing an HRA using this template and **must be read in full** before using this document.

The Somerset Levels and Moors Ramsar Site is vulnerable to nutrient loading and is located within the Somerset West and Taunton Council catchment area. The site is protected by the Habitats Regulations and any proposals that could affect it requires an HRA.

This document is to be submitted to Natural England (NE) as the statutory advisor for designated nature conservation sites in England to formally request their views on the assessment under Regulation 76 of the Habitats Regulations, and specifically whether they can concur with the conclusions.

### 1.1 The HRA Process

Regulation 63 of the Habitats Regulations requires a competent authority to make an ‘Appropriate Assessment’ of the implications of the plan or project for that site in view of its Conservation Objectives, before deciding to undertake or give consent for a plan or project which (a) is likely to have a significant effect on a European Site (either alone or in-combination with other plans or project), and (b) is not directly connected with or necessary to the management of that site. In light of the conclusions of the assessment, the competent authority may proceed with or consent to the plan or project only after having ascertained that it will not adversely affect the integrity of the European Site.

All plans and projects should identify any possible effects early in the process and then either alter the plan or project to avoid them or introduce mitigation measures to the point where no adverse effects remain. The ‘competent authority’ shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned, and if appropriate, having obtained the opinion of the general public.

The assessment of a project under the Habitats Regulations can be split into four stages as shown in Table 1. This template covers Screening (Stage 1) and Appropriate Assessment (Stage 2).

Table 1: Stages of HRA

Stage	Description
<b>Screening (Stage 1)</b>	Assessment of the likelihood of a plan or project, alone or in-combination, having a significant effect on a European Site or its features. If a significant effect is likely, an Appropriate Assessment is required as set out in Regulation 63(1).
<b>Appropriate Assessment (Stage 2)</b>	<p>A detailed consideration of the potential effects of the plan or project in relation to the Conservation Objectives for the European Site(s) to determine if there is likely to be an adverse effect on the integrity of the site (i.e. an effect that would compromise the site meeting its Conservation Objectives).</p> <p>If it can be demonstrated that with appropriate mitigation measures the plan or project would not give rise to an adverse effect on the integrity of a European Site, the plan or project can proceed.</p>
<b>Assessment of Alternative Solutions (Stage 3)</b>  <u>not covered in this template</u>	Where it cannot be demonstrated that there is no adverse effect, or there is uncertainty, the assessment would then need to consider if there were any other alternatives to the plan or project that would not give rise to adverse effects on the integrity of the European Site.
<b>Assessment where no alternative solutions exist and where adverse impacts remain (Stage 4)</b>  <u>not covered in this template</u>	If adverse effects are still likely then the competent authority would then consider if there are any Imperative Reasons of Overriding Public Interest (IROPI), only at this stage can Compensatory Measures be considered. It is very unusual for plans or projects to be considered in Stages 3 or 4.

## 2 Guidance and policy when assessing the potential effects of a plan or project

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The following guidance and policy must be followed when assessing the potential effects of the plan or project:

- The Habitats Regulations Assessment Handbook, DTA Publications Ltd<sup>1</sup>; which includes analysis of relevant recent caselaw, and
- Gov.uk website<sup>2</sup>;

Professional advice should be sought when required in order to ensure a thorough and scientific assessment of the plan or project and its potential effects on a European Site.

In addition to the guidance noted above, a number of websites can be used to gather information on the European Sites in order to inform the assessment, in particular, the Management Plans for European Sites and Regulation 37 information. This is not an exhaustive list, however commonly used websites used include:

- Natural England (NE) website<sup>3</sup>;
- MAGIC (Multi-Agency Geographic Information for the Countryside) website<sup>4</sup>; and
- Joint Nature Conservation Committee (JNCC) website<sup>5</sup>.

### 2.1 A note on case law regarding the consideration of mitigation

With regards to recent case law (Coillte vs People Over Wind<sup>6</sup>) the inclusion of plainly established and uncontroversial mitigation during Stage 1 is no longer considered appropriate. Mitigation, as considered by the Centre Européen de Coopération Juridique (CECJ) in regard to the case law, is interpreted to mean measures that are intended to avoid or reduce the harmful effects of the envisaged plan or project on the site concerned.

Consequently, any plan or project which identifies an impact on a European Site and where avoidance and mitigation is applicable will need to address these measures during Stage 2 Appropriate Assessment.

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<sup>1</sup> Tyldesley, D. and Chapman, C. (2013) The Habitats Regulations Assessment Handbook. Nov 2019 edition. UK, DTA Publications Ltd <https://www.dtapublications.co.uk/>

<sup>2</sup> <https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site>

<sup>3</sup> Natural England Access to Evidence <http://publications.naturalengland.org.uk/>

<sup>4</sup> MAGIC. Magic interactive Mapping Application. <http://www.magic.gov.uk/MagicMap.aspx>

<sup>5</sup> JNCC Website <https://jncc.gov.uk/>

<sup>6</sup> People over Wind, Case C323/17 European Court of Justice, 12<sup>th</sup> April 2018.

## 3 Details of the plan or project

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### 3.1 Overview

Table 2: Project or Plan Details

Application reference number	if applicable	Date	dd/mm/yyyy
Applicant details	name address email telephone number	Document prepared by/ and on behalf of	by on behalf of
Plan or Project Name*	Plan or project name		
Plan or Project Location	name and grid reference	European Site(s) potentially affected	Somerset Levels and Moors Ramsar
Component SSSI(s):	any SSSI(s) within or adjacent to the site, or hydraulically connected.		

### 3.2 Plan or Project site location

- Describe the location of site in relation to its surroundings.
- Provide a location plan/site boundary in Appendix C.

### 3.3 Environmental baseline

- Describe the habits present at the site. As applicable include the results of the ecological desk study, Preliminary Ecological Appraisal, and any Phase 1 surveys and maps.
- Describe any hydraulic connectivity to the Somerset Levels and Moors Ramsar Site
- Include any information relevant to the inputs for the Somerset West and Taunton Phosphorous Budget Calculator for example the defined current land use etc.
- List any relevant supporting documents here and provide them in Appendix D.

## 3.4 Plan or Project description

- Describe the plan or project in detail including so that its potential impacts can be determined.
- Drawings of the plan or project are to be provided in Appendix E.
- List any other relevant supporting documents here and provide them in Appendix E.

## 3.5 Construction methodology and programme

- Briefly summarise the construction techniques to be used and when the plan or project will be constructed or implemented (if known).
- If construction is not relevant due to the nature of the plan or project then state 'N/A' under this heading and move to Section 3.6 'Operation'
- If any methods are proposed with potential pathways for effect to the European Site (for example pollution through silt run off, over-pumping of sewage or slurry during construction, noise disturbance etc) then describe these here, particularly non-standard methods.
- List any relevant supporting documents here and provide them in Appendix F.

## 3.6 Operation

### 3.6.1 Operational phosphorous outputs

#### 3.6.1.1 Before mitigation

- Describe how the proposed plan or project will operate before mitigation.
- Describe the phosphorous output (how often will it be produced, over what duration, and in what quantities) of the plan or project before any mitigation, conditions or restrictions are put in place. Use the most recent version of the Somerset West and Taunton Phosphorous Budget Calculator<sup>7</sup> to calculate the phosphorous output for the plan or project before mitigation. Input this value into the box below.

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<sup>7</sup> Somerset Authorities Phosphorous Budget Calculator available at:  
[https://ssccust1.spreadsheethosting.com/1/3d/08e177701b0026/Copy%20of%20P%20budget%20Calc\\_V3.1%20developer%20version/Copy%20of%20P%20budget%20Calc\\_V3.1%20developer%20version.htm](https://ssccust1.spreadsheethosting.com/1/3d/08e177701b0026/Copy%20of%20P%20budget%20Calc_V3.1%20developer%20version/Copy%20of%20P%20budget%20Calc_V3.1%20developer%20version.htm)



Total Phosphorous produced by the plan or project before mitigation = X kg/yr (or use other more appropriate unit)

- Provide supporting summary tables or statements to show the phosphorous output before any mitigation, using figures from the Phosphorous Budget Calculator<sup>7</sup>Error! Bookmark not defined.. The table structure will depend on what is relevant for your scale and type of plan or project.
- List any relevant supporting documents here and provide them Appendix G.

### 3.6.1.2 After mitigation

- Describe how the proposed plan or project will operate after mitigation. Describe the mitigation measures that will be used to prevent, or to reduce phosphorous getting into the Ramsar Site; include any evidence and supporting documents in Appendix G.
- Mitigation measures must be underpinned by deliverable and achievable actions. Examples could include (but are not limited to):
  - on-site and off-site land use changes or nature-based solutions (e.g. constructed wetlands)
  - Sustainable Urban Drainage Systems designed to reduce nutrient levels of on-site surface water run-off.
  - the upgrade of existing treatment of phosphorous sources (e.g. upgrading package treatment works)
  - biological or chemical treatment
  - filtration recovery, etc.
  - purchase of phosphorous credits from Somerset West and Taunton Council
  - A Construction Environmental Management Plan (CEMP) including specific measures to ensure that retained habitats are protected during the construction phase
  - A Landscape and Ecological Management Plan (LEMP) that includes specific actions to ensure that retained habitats and phosphorous are mitigated and managed appropriately for the lifetime of the development

If any mitigation arrangements are still to be secured, make this clear and include actions proposed to get these secured/agreed.

- Describe the phosphorous output of the plan or project after mitigation, conditions or restrictions are put in place. Use the most recent version of the Somerset West and Taunton Phosphorous Budget Calculator<sup>7</sup> to calculate the

phosphorous output for the plan or project after this mitigation. Input this value into the box below.

Total Phosphorous produced by the plan or project after mitigation = X kg/yr (or use other more appropriate unit)

- Provide supporting summary tables or statements to show the phosphorous output after any mitigation, using figures from the Phosphorous Budget Calculator<sup>7</sup>. The table structure will depend on what is relevant for your scale and type of plan or project.
- Include the full output from the Phosphorous Budget Calculator<sup>7</sup>Error! Bookmark not defined. in Appendix G.
- List any other relevant supporting documents here and provide them in Appendix G.

## Maintenance and monitoring

- Include details of any maintenance and monitoring that will be in place to ensure that the mitigation remains in place and effective in perpetuity. Full details should be included in Appendix G.

### 3.6.1.3 Limitations

The Phosphorous Budget Calculator<sup>7</sup> used to calculate phosphorous outputs for the plan or project follows a generic 'board-brush' approach and therefore cannot be tailored to meet each specific sites or situations. This is detailed in the calculator information page which states, "The tool has been designed so that the user is able to update the data and methods in light of any new research or understanding" and "The information supplied in this tool is for guidance purposes only and is not intended to provide an exact budget calculation due to the limitations and assumptions of the model. The user is responsible for ensuring the accuracy and completeness of all data entered, be it manually or automatically, and used by this tool."

- Describe any additional limitations here, for example limitations to the information available, uncertainties on the ground conditions, limitations within any survey data, any uncertainty on the efficacy of mitigation measures, etc.

## 4 Information about the Somerset Levels and Moors Ramsar Site

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### 4.1 Identifying sites

European Sites that are located close to the plan or project or are linked by pathways such as hydrological connections must be identified. This template is for plans or projects potentially affecting the Somerset Levels and Moors Ramsar Site via nutrient change.

Please note that if European Sites other than the Somerset Levels and Moors Ramsar Site are identified as being linked to the project, this template alone may not be suitable, and further professional advice should be sought.

### 4.2 European Site conservation objectives and qualifying features

Distance of the Plan or Project from Somerset Levels and Moors Ramsar European Site\* = **state distance and direction**

\*distance and direction are measured as a straight line from the closest edge of the plan or project to the closest edge of the European Site.

The features and the conservation objectives of the Somerset Levels and Moors Ramsar Site and the potential vulnerability of the features to any effects that might arise from the plan or project are summarised in Table 3.

#### Somerset Levels and Moors Ramsar Site

Table 3: Characteristics of the Somerset Levels and Moors Ramsar Site (refer to Information Sheet on Ramsar Wetlands (RIS)<sup>8</sup> and Natural England Advice Note<sup>9</sup> for further information)

<b>Name of European Site and its EU Code</b>	Somerset Levels and Moors Ramsar EU Site Code UK11064 (914)
<b>European Site size</b>	6,388 ha

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<sup>8</sup> Ramsar Sites Information Service <https://rsis.ramsar.org/ris/914>

<sup>9</sup> Natural England Advice Note <https://www.somersetwestandtaunton.gov.uk/media/2434/natural-england-advice-to-lpas-on-nutrients-in-the-somerset-levels-and-moors.pdf>

**Description of European Site**

The Somerset Levels and Moors Ramsar is one of the largest and richest areas of traditionally managed wet grassland and fen habitats in lowland UK. The majority of the site is only a few metres above mean sea level and drains through a network of ditches, rhynes, drains and rivers, between numerous small, low-lying fields and meadows. Many of the meadows have a diverse flora. Large numbers of wintering birds visit and feed on the moors during the winter months as well as significant numbers of passage waterfowl. The hydrological value of the site lies in flood water storage / desynchronisation of flood peaks and maintenance of water quality (removal of nutrients).

The Ramsar site is designated for its internationally important wetland features including floristic and invertebrate diversity and consists of a series of Sites of Special Scientific Interest (SSSIs)<sup>14</sup> within the largest area of lowland wet grassland and associated wetland habitat remaining in Britain. It covers about 35,000 ha in the flood plains of the Rivers Axe, Brue, Parrett, Tone and their tributaries. The site attracts internationally important numbers of wildfowl in winter and is one of the most important sites in southern Britain for breeding. The network of rhynes and ditches support an outstanding assemblage of aquatic invertebrates, particularly beetles. The designated invertebrate assemblage is outlined in the Table below.

**The designated invertebrate assemblage associated with the Somerset Levels and Moors Ramsar**

Scientific name	Common name	Habitat
<i>Hydrochara caraboides</i>	Lesser silver water beetle	Shallow water, generally less than 20cm deep. This could be as a separate temporary pool that completely dries up in the summer or as a wide, shallow shelf of an otherwise permanent pool.
<i>Bagous nodulosus</i>	Flowering rush weevil	It is understood to be a monophagous species closely associated with flowering-rush <i>Butomus umbellatus</i> .
<i>Odontomyia angulata</i>	Orange-horned green colonel (soldier fly species)	The amphibious larvae develop amongst the wet vegetation of pools. Adults fly from June until August.
<i>Oulema erichsoni</i>	Beetle species	Wet peat cuttings or trenches with little other vegetation.
<i>Valvata macrostoma</i>	A minute freshwater snail species	Range of freshwater ditches in long-established aquatic habitats.
<i>Odontomyia ornata</i>	Ornate brigadier (soldier fly species)	Grazing marsh species, larvae like slow-flowing ditches.
<i>Stethophyma grossum</i>	Large marsh grasshopper	Found in wet, marshy locations, typically quaking acidic bogs. It was formerly known from fenland habitat, wet meadows and riverside areas.
<i>Pteromicra leucopeza</i>	Snail-killing marsh fly species	Parasitic.
<i>Lejops vittata</i>	Sea club-rush hoverfly	Associated with stands of <i>Scirpus maritimus</i> in grazing marsh ditches.
<i>Cantharis fusca</i>	Soldier beetle species	Wet grassland.
<i>Paederus caligatus</i>	Beetle species	Both larvae and adults, inhabit ecotones of water-related habitats (e.g., peat bogs, ponds, slow-flowing waters, floodplain meadows).

	<i>Hydaticus transversalis</i>	Predatory water beetle species	Most frequently associated with ditches in grazing levels that are rich in emergent and submerged macrophyte vegetation.
	<i>Dytiscus dimidiatus</i>	Diving beetle species	Occurs in ponds, ditches and open fen, usually where there is plenty of submerged and emergent vegetation.
	<i>Hydrophilus piceus</i>	Great silver water beetle	Favours late succession grazing marsh ditches.
	<i>Limnebus aluta</i>	A small water beetle species	Typically occurs among moss and litter on wet mud or silt among marginal vegetation.
	<i>Laccornis oblongus</i>	Diving beetle species	Occurs mainly in standing waters of bog and marshes.
<b>Qualifying Features of the European Site</b>	<p><b>Ramsar criteria 2 - A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.</b></p> <ul style="list-style-type: none"> <li>Supports 17 species of Red Data Book invertebrates. The vascular plants <i>Wolffia arrhiza</i>, <i>Hydrocharis morsus-ranae</i> and <i>Peucedanum palustre</i> are considered vulnerable by the GB Red Book</li> </ul> <p><b>Ramsar criteria 5 - A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.</b></p> <ul style="list-style-type: none"> <li>Species with peak counts in winter: 97,155 waterfowl (5 year peak mean 1998/99-2002/2003)</li> </ul> <p><b>Ramsar criteria 6 - A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.</b></p> <ul style="list-style-type: none"> <li>Qualifying Species/populations (as identified at designation) Species with peak counts in winter: <ul style="list-style-type: none"> <li>Eurasian teal, <i>Anas crecca</i>, NW Europe 21,231 individuals, representing an average of 4.2% of the population (5 year peak mean 1998/9-2002/3)</li> <li>Northern lapwing, <i>Vanellus vanellus</i>, Europe - Breeding 36,580 individuals, representing an average of 1.8% of the population (5 year peak mean 1998/9-2002/3)</li> </ul> </li> <li>Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in winter: <ul style="list-style-type: none"> <li>Eurasian wigeon, <i>Anas penelope</i>, NW Europe 25,759 individuals, representing an average of 1.7% of the population (5 year peak mean 1998/9-2002/3)</li> <li>Mute swan, <i>Cygnus olor</i>, Britain 842 individuals, representing an average of 2.6% of the population (5 year peak mean 1998/9-2002/3)</li> <li>Northern pintail, <i>Anas acuta</i>, NW Europe 927 individuals, representing an average of 1.5% of the population (5 year peak mean 1998/9-2002/3)</li> <li>Northern shoveler, <i>Anas clypeata</i>, NW &amp; C Europe 1,094 individuals, representing an average of 2.7% of the population (5 year peak mean 1998/9-2002/3)</li> </ul> </li> </ul>		
<b>European Site</b>	Site specific conservation objectives for Ramsar sites have not been published. However, the following generic Conservation Objectives for all Ramsar sites have previously been signed off by Natural England:		

<p><b>Conservation Objectives<sup>10</sup></b></p>	<p><i>‘With regard to the Ramsar Site and the wetland habitats, individual species and/or groups of species for which the site has been listed (its ‘Qualifying Features’), and subject to natural change;</i></p> <p><i>Ensure that the integrity of the [Ramsar] site is maintained or restored as appropriate, and ensure that the site contributes to achieving the wise use of wetlands across the UK, by maintaining or restoring:</i></p> <ul style="list-style-type: none"> <li>• <i>The extent and distribution of qualifying habitats and habitats of qualifying species</i></li> <li>• <i>The structure and function of qualifying habitats and habitats of qualifying species</i></li> <li>• <i>The supporting processes on which qualifying habitats and habitats of qualifying species rely</i></li> <li>• <i>The populations of each qualifying species, and,</i></li> <li>• <i>The distribution of each qualifying species within the site’.</i></li> </ul> <p>The conservation objectives for the Ramsar Site are consistent with the published conservation objectives for the Somerset Levels and Moors SPA (refer to Table 7 in Appendix H for details).</p>
<p><b>Vulnerability of the European Site</b></p>	<p>The vast majority of the ditches within the Ramsar Site and the underpinning SSSI’s are classified as being in unfavourable condition, or at risk, from the effects of eutrophication caused by excessive phosphorous<sup>9</sup>.</p> <p><u>Aquatic invertebrate assemblage</u></p> <p>The designated invertebrate assemblage is sensitive to changes in water quality. Water beetles and large mouthed valve snails associated with the Ramsar are particularly dependent on the maintenance of water quality<sup>11</sup>. The interest features of the Ramsar are in unfavourable condition, or at risk, due to the effects of eutrophication caused by excessive phosphates.</p> <p>Phosphorus levels are frequently 2-3 times higher than the target for total phosphorus set out within the Conservation Objectives underpinning the Ramsar. There is widespread evidence of biological harm linked to eutrophication, which in lowland ditch systems such as the Somerset Levels and Moors, are in the form of excessive filamentous algae growth (forming large mats on the water surface) and increasing blooms of <i>Lemna</i> species. This can adversely affect the ditch invertebrate and plant communities through a variety of mechanisms including shading, smothering and anoxia, leading to a dominance of plant species better able to deal with these conditions, with negative competitive effects on others. This can lead to a significant negative shift in habitat quality and structure, which in turn threatens the integrity of the invertebrate communities that should be specially protected under the Ramsar designation.</p> <p>High risk activities include:</p> <ul style="list-style-type: none"> <li>• Sewage effluent from both single dwellings (i.e. Package Treatment Plants, septic tanks) and mains Sewage Treatment Works (STW);</li> <li>• Changes in land use that increase the risk of pollution run-off (maize, increase in herd size etc.);</li> <li>• Use of fertilisers, run-off from new roads and urban environments;</li> </ul>

<sup>10</sup> Natural England website ‘European Site Conservation Objectives for Somerset Levels & Moors SPA’ (includes Somerset Levels and Moors SPA Conservation Objectives Supplementary Advice 2019/03/12, Somerset Levels and Moors Conservation Objectives 2019/02/14, and Somerset Levels and Moors SPA Citation 2014/09/26). <http://publications.naturalengland.org.uk/publication/4598158654963712>

<sup>11</sup> Foster, G. & Eyre, M. 1993. Classification and Ranking of Water Beetle Communities. *Journal of Animal Ecology*, 62: 216-217. Also see: <http://www.environment-agency.gov.uk/yourenv/eff/1190084/wildlife/970605/?version=1&lang=e>.

	<ul style="list-style-type: none"> <li>• Animal waste and slurries;</li> <li>• Industrial sources such as dairy processing plants;</li> <li>• Processes involving decomposition and leachate;</li> <li>• Peat workings; and</li> <li>• Processing involving the release of large volumes of tap water to the environment</li> </ul> <p>Due to the unfavourable condition of the Somerset Levels and Moors Ramsar resulting from excessive phosphates, if new development is identified as giving rise to additional phosphates within the hydrological catchment and left unmitigated, the development would result in a Likely Significant Effect upon the Ramsar. Therefore, developments giving rise to additional phosphates must demonstrate 'nutrient neutrality' to be permitted.</p> <p><u>Migratory/wintering birds</u></p> <p>The availability of an abundant food supply is critically important for adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which could affect the distribution, abundance and availability of prey and hence adversely affect species' populations.</p> <p>The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. This includes increased recreational pressure.</p>
<p><b>Identified ways in which the Qualifying Features of the European Site could be affected by the plan or project</b></p>	<p><u>There are several main identified ways by which the qualifying features of the European Site could be affected. These are noted below.</u></p> <p><u>Aquatic invertebrate assemblage</u></p> <p>The main factors considered to potentially cause loss or decline in the aquatic invertebrate assemblage of the Ramsar include:</p> <ul style="list-style-type: none"> <li>• Degradation or changes to water quality resulting from increased nutrients entering watercourses which are hydrologically linked to the Ramsar. In freshwater habitats it is often the case that the abundance of nutrients, especially phosphorus, is a key limiting factor of excessive primary productivity, particularly algae, which in turn affects habitats on which aquatic invertebrates depend. The key sources of phosphorous, commonly assessed in the form of phosphates, derive from diffuse water pollution (such as agricultural leaching) and point discharges (such as from sewage effluent) within the catchment.</li> <li>• Loss or degradation of ecologically supporting habitat outside the designated site due to development.</li> </ul> <p><u>Migratory/wintering birds</u></p> <p>The main factors considered to potentially cause loss or decline in the migratory/wintering birds of the Ramsar/SPA include:</p> <ul style="list-style-type: none"> <li>• Increased disturbance arising directly from development outside the designated site due to human activity, noise and introduced/increased levels of lighting. This includes recreational disturbance from increased visitor access. Birds respond to disturbance by engaging in activity that is energetically expensive (e.g. flying) or behaviour is affected in a way to reduce food intake (e.g. moving to a less preferred and less profitable feeding site; losing time loafing before</li> </ul>

	<p>resuming feeding). A number of studies have measured these costs and show that they sometimes can be considerable<sup>12</sup>.</p> <ul style="list-style-type: none"><li>• Loss or degradation of ecologically supporting habitat outside the designated site due to development.</li></ul>
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<sup>12</sup> Goss-Custard, J. 2005. *National Cycle Network – Exe Estuary Proposals: Assessment of the Anticipated Effects on the Exe Estuary Special Protection Area*. Exeter: Devon County Council.



## 5 Stage 1 - Screening of the plan or project

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### 5.1 Likelihood of Significant Effects alone

Stage 1 of the HRA, the screening, is a test of Likely Significant Effect (LSE) to determine whether an Appropriate Assessment is required against all impact pathways identified. The screening is done considering the proposal in isolation and therefore not in-combination with any other plans or projects. It is also done in the absence of avoidance or other mitigation measures. Note that the assessment is made with awareness of the conservation objectives for the features of the European Site, however the actual assessment of the plan or project against the conservation objectives is not required until the Appropriate Assessment (Stage 2).

#### Potential Impact Pathways

List all impact pathways that are relevant to each designated feature in Table 4, column 3.

Consider all potential impact pathways that could result from the plan or project (all stages including construction and operation), that may have an impact on the Somerset Levels and Moors Ramsar Site features.

Impact pathways will be specific to your plan or project, however some examples of impact pathways that could apply to a typical project are below (but are not limited to):

- The proposed development will result in an increase in phosphate loading within the hydrological catchment of the Ramsar, through the production of wastewater/slurry during construction or operation, potentially leading to degradation of habitat or changes in water quality.
- The proposed development could result in species mortalities and injuries e.g. through pollution incidents during wet weather to the adjacent watercourse. The increased phosphorous input could lead to eutrophication of the watercourse and connected waterbodies during construction or operation.

#### Likely Significant Effects

State the Likely Significant Effect of the project alone in Table 4, column 4 against each impact pathway. Insert the relevant colour coded statements.

- **There is no impact pathway from the proposal to the designated feature**
- **There is an impact pathway and significant effects cannot be ruled out**

In the assessment of Likely Significance Effects, professional judgement should be sought and applied using the following criteria if there is ever insufficient information about the elements and interests available:

- The vulnerability/sensitivity of the receiving environment/features of interest;
- When the risk of effects are likely to occur (e.g. construction and/or operation);
- The likely geographical extent of the effects; and
- Likelihood of significant effects (e.g. those above negligible in magnitude) occurring based on previous experience with similar elements, where available.

Where there is not enough information about the risk of qualifying interest being present, or of the risk of effects, the assessment should use the precautionary principle to inform the judgement. The precautionary principle is applied to ensure that any assessment errs on the side of caution, without being overly cautious. This principle means that the conservation objectives should prevail where there is uncertainty or that harmful effects will be assumed in the absence of evidence to the contrary.

Note that if there is a net gain of phosphorous due to the plan or project, with an impact pathway to the Ramsar Site then there will be a Likely Significant Effect on the Ramsar site integrity. This is due to the current position of Natural England on the unfavourable condition of the Somerset Levels and Moors Ramsar Site (refer to Appendix A for more information).

Table 4: Potential effects of the plan or project alone on the Somerset Levels and Moors Ramsar Site and its qualifying features

Qualifying Feature*	Relevant conservation objectives	Potential impact pathway	Likely Significant Effect alone
1	2	3	4
<b>European Site: Somerset Levels and Moors Ramsar</b>			
<p><b>Ramsar criteria 2 - A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.</b></p> <ul style="list-style-type: none"> <li>• Supports 17 species of Red Data Book invertebrates. The vascular plants <i>Wolffia arrhiza</i>, <i>Hydrocharis morsus-ranae</i> and <i>Peucedanum</i></li> </ul>	<p>Reference the relevant conservation objectives from Table 3 i.e.:</p> <p>Ensure that the integrity of the Ramsar site is maintained or restored as appropriate, and ensure that the site contributes to achieving the wise use of wetlands across the UK, by maintaining or restoring;</p> <ul style="list-style-type: none"> <li>• The extent and distribution of qualifying habitats and habitats of qualifying species</li> </ul>	<p>Short explanation of the potential impact pathway. Create a new row for each impact pathway for example:</p> <p>The proposed development will result in an increase in phosphate loading within the hydrological catchment of the Ramsar, through the production of wastewater/slurry during operation, potentially leading to degradation</p>	<p>Choose from the following, for each impact pathway. Keep colour coding for ease of reference:</p> <p><b>There is an impact pathway and significant effects cannot be ruled out</b></p> <p><b>There is no impact pathway from the proposal to the designated feature</b></p>

<p><i>palustre</i> are considered vulnerable by the GB Red Book</p>	<ul style="list-style-type: none"> <li>• The structure and function of qualifying habitats and habitats of qualifying species</li> <li>• The supporting processes on which qualifying habitats and habitats of qualifying species rely</li> <li>• The populations of each qualifying species, and,</li> <li>• The distribution of each qualifying species within the site</li> </ul>	<p>of habitat or changes in water quality.</p>	
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*\* Note that criteria 2 is the one most directly impacted by phosphorous however if other criteria (5 and 6) are relevant for the plan or project then please insert additional rows. This is because based on current understanding, Natural England is satisfied that additional nutrients from typical new developments<sup>13</sup> are unlikely, either alone or in-combination, to have a likely significant effect on the internationally important bird communities for which the site is designated (and the bird communities come under criteria 5 and 6). Refer to Appendix A for more information.*

### Screening Decision of the Plan or Project Alone

Select from one of the following statements, and delete those that do not apply:

- If all rows in column 4 are green 'The plan or project is not likely to have a significant effect on the Somerset Levels and Moors Ramsar Site because there is no impact pathway from the plan or project to its qualifying features, and therefore no further consideration under the Habitats Directive/Regulations is required in order to determine the application.' (Insert 'N/A' under the heading for Section 6 'Stage 2 – Appropriate Assessment' and delete all text within this Section. Then go to Section 7 'Conclusions on Site Integrity')

or

- If there are any red rows in column 4 'The risk of Likely Significant Effects on the Somerset Levels and Moors Ramsar Site from the plan or project alone cannot be ruled out, and therefore an Appropriate Assessment (Stage 2) is required'. (Go to Section 6 'Stage 2 – Appropriate Assessment')

### Limitations

State any limitations to the data provided or decisions made on screening here.

Note that within the HRA process it would be normal to carry out an in-combination assessment at screening stage, should a conclusion of no Likely Significant Effect be reached. However, the position adopted by Natural England means that if there is an increase in phosphorous due to the project, then a conclusion of no Likely Significant Effect should not be reached.

<sup>13</sup> Refer to Somerset West and Taunton Council website for definition of a 'typical new development' <https://www.somersetwestandtaunton.gov.uk/planning/phosphates-on-the-somerset-levels-and-moors/>

## 6 Stage 2 - Appropriate Assessment

### 6.1 Appropriate Assessment of the plan or project alone

Where screening in Table 4 has determined that the plan or project may have a likely significant effect on the Somerset Levels and Moors Ramsar Site alone, an Appropriate Assessment is required. The Appropriate Assessment is detailed in Table 5 and Table 6.

Only include impact pathways where a Likely Significant Effect could not be ruled out from Table 4 i.e. those rows in **red** - 'There is an impact pathway and significant effects cannot be ruled out'. Any impacts that are **green** in Table 4 do not need to be considered further.

#### 6.1.1 Assessment of potentially adverse effects without additional mitigation measures

Complete Table 5 for the plan or project without any additional mitigation measures, conditions or restrictions taken to reduce the output of phosphorous. Note that if phosphorous is produced, then there will be an adverse effect on the Ramsar site integrity.

The Somerset West and Taunton Phosphorous Budget Calculator<sup>7</sup> should be used to calculate the total quantity of phosphorous that is expected to be produced by the plan or project; insert this figure into the last row of the table as indicated (as calculated in Section 3.6.1.1).

Table 5: Appropriate Assessment of the plan or project alone and in the absence of any mitigation measures

Qualifying Feature	Impact pathway	Description of impacts and adverse effects	Assessment of adverse effects in relation to conservation objectives	Can adverse effect on Somerset Levels and Moors Ramsar Site integrity be ruled out? Yes or No
<b>European Site: Somerset Levels and Moors Ramsar</b>				
<b>Ramsar criteria 2 - A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened</b>	Insert impact pathway in <b>red</b> from Table 4 where significant effects could not be ruled out.	Describe impacts and adverse effects from each relevant impact pathway, for example:  The wastewater produced by the project will be piped to the	Describe for each impact pathway how any adverse effects could impact the conservation objectives for the site which are listed	State whether an adverse effect on the Ramsar site can be ruled out or not. Note that if there is a net gain of phosphorous in the absence of mitigation then

<p><b>ecological communities.</b></p> <ul style="list-style-type: none"> <li>Supports 17 species of Red Data Book invertebrates. The vascular plants <i>Wolffia arrhiza</i>, <i>Hydrocharis morsus-ranae</i> and <i>Peucedanum palustre</i> are considered vulnerable by the GB Red Book</li> </ul>	<p>Create a new row for each impact pathway.</p> <p>For example:</p> <p>The proposed development will result in an increase in phosphate loading within the hydrological catchment of the Ramsar, through the production of wastewater during operation, potentially leading to degradation of habitat or changes in water quality.</p>	<p>treatment works at X. This will result in an increase in phosphorous (x/kg/yr) that will be treated in the catchment and ultimately discharged into the Ramsar Site. Due to the sensitivity of the Ramsar to any increase in phosphorous, this increase could cause further degradation or changes to water quality to the waterbodies which support the aquatic invertebrate assemblage and vascular plants named under criteria 2.</p>	<p>in Table 4, column 2.</p> <p>For example:</p> <p>The increase in phosphorous could adversely affect all of the conservation objectives listed for the site; it will contribute to eutrophication of water bodies and changes to water chemistry within the site, thus making it unfavourable to aquatic invertebrates, affecting the structure and function of the habitats that support both them and vascular plants named under criteria 2.</p>	<p>there will be an adverse effect on the Ramsar Site integrity.</p>
<p>Total Phosphorous produced by the plan or project <u>in the absence</u> of mitigation (as calculated in Section 3.6.1.1) = X kg/yr (or use other more appropriate unit)</p>				

## 6.1.2 Assessment of potentially adverse effects with additional mitigation measures

Where adverse effects on the Somerset Levels and Moors Ramsar Site integrity cannot be ruled out (i.e. for any rows stating 'No' in the final column of Table 5), mitigation must be provided. Bring forward any rows stating 'No' into Table 6. Any rows stating 'Yes' do not need to be considered further.

Full descriptions and details of the mitigation measures proposed including how they will be secured and monitored are to be included in the 'After mitigation' section 3.6.1.2.

Note that if there is still a net gain of phosphorous after mitigation, then there will still be an adverse effect on the Ramsar site integrity.

The Somerset West and Taunton Phosphorous Budget Calculator<sup>7</sup> should be used to calculate the total quantity of phosphorous that is expected to be produced by the plan or project after mitigation measures are implemented; insert this figure into the last row of Table 6 as indicated (as calculated in Section 3.6.1.2).

Table 6: Appropriate assessment of the plan or project alone with any mitigation measures, conditions or restrictions

Qualifying Feature	Description of adverse effects	Can adverse effects be mitigated? Yes or No	Description of mitigation measures including how they would be applied	Can adverse effect on site integrity be ruled out? Yes or No
<b>European Site: Somerset Levels and Moors Ramsar</b>				
<p><b>Ramsar criteria 2 - A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.</b></p> <p>Supports 17 species of Red Data Book invertebrates. The vascular plants <i>Wolffia arrhiza</i>, <i>Hydrocharis morsus-ranae</i> and <i>Peucedanum palustre</i> are considered vulnerable by the GB Red Book</p>	<p>Describe impacts and adverse effects from each relevant impact pathway from Table 5.</p> <p>Create new rows for adverse effects as required</p>	<p>State Yes or No</p>	<p>Brief description of proposed mitigation measures which will prevent additional phosphorous or pollution from entering the Ramsar Site.</p> <p>Full details of mitigation measures and how they will be applied are to be provided in Section 3.6.1.2.</p>	<p>State Yes or No.</p> <p>Note that if there is still a net gain of phosphorous after mitigation, then there will still be an adverse effect on the Ramsar site integrity.</p>
<p>Total Phosphorous produced by the plan or project <u>with</u> mitigation (as calculated in Section 3.6.1.2)* = X kg/yr (or use other more appropriate unit)</p> <p>*Negative values show phosphorous removed from the catchment, '0' shows nutrient neutrality and positive values show that more mitigation is needed</p>				
<b>Concluding Statement of Appropriate Assessment Alone</b>				
<p>Select from one the following statements:</p> <ul style="list-style-type: none"> <li>- When considered alone, it has been determined that the proposal has no adverse effect on the integrity of the Somerset Levels and Moors Ramsar Site'. (Go to Section 6.2).</li> </ul> <p>or</p>				

- 'When considered alone, it has not been possible to determine that the proposal has no adverse effect on the integrity of the Somerset Levels and Moors Ramsar Site'. (Go to Section 6.2)

### Residual Effects

List any residual effects here, which are not significant on their own, but could become significant if considered in-combination with the effects of other plans and projects. If there are no residual effects, state N/A.

## 6.2 Likelihood of Adverse Effects on Site Integrity in-combination other plans and projects

### 6.2.1 Likelihood of adverse effects in-combination due to nutrients

If nutrient neutrality is demonstrated for the project alone with mitigation in place, then there will be no adverse effect on integrity of the Ramsar Site due to nutrients. Therefore, no in-combination assessment is required. If this is the case, state: 'Nutrient neutrality has been demonstrated for the project alone with mitigation in place and therefore there will be no adverse effect on integrity of the Ramsar Site due to nutrients. Therefore, no in-combination assessment is required'.

If this is not the case, adverse effect on integrity of the Ramsar Site from the project alone must be concluded and subsequent stages of HRA would be necessary (Stage 3 or 4 as described in Table 1) which are not included in this template. This due to the current position of Natural England on the unfavourable condition of the Somerset Levels and Moors Ramsar Site (refer to Appendix A for more information). If this is the case, state: 'Nutrient neutrality cannot be demonstrated for the project alone with mitigation in place and therefore there will be an adverse effect on the Ramsar Site due to nutrients. Therefore, subsequent stages of HRA are necessary that are not included in this template.'

## 7 Conclusions on site integrity

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### Concluding Statement on the Somerset Levels and Moors Ramsar Site Integrity

Select from one the following statements:

'It is concluded that the project will not adversely affect the integrity of the Somerset Levels and Moors Ramsar Site, either alone or in-combination with other plans or projects, subject to the mitigation identified in section 3.6.1.2 being secured in perpetuity'

or

It cannot be concluded that the project will not adversely affect the integrity of the Somerset Levels and Moors Ramsar Site, either alone or in-combination with other plans or projects'



## **Appendix A**

### **Background on phosphorous and planning applications in Somerset West and Taunton Council and Notes on use of the HRA Template**

## Background on phosphorous and planning applications in Somerset West and Taunton Council

### Background

In August 2020 Natural England issued an Advice Note<sup>14</sup> (see Appendix B) to Somerset West and Taunton Council regarding the implications of the Court of Justice of the European Union CJEU case known as the “Dutch N” in relation to planning applications than may affect the Somerset Levels and Moors Ramsar and Special Protected Area (SPA) European Sites.

The ruling has resulted in greater scrutiny of plans or projects that are likely to, either directly or indirectly, increase nutrient loads to internationally important sites (i.e. Special Areas of Conservation (SACs), Special Protection Areas and Ramsar Sites) where a reason for unfavourable condition is an excess of a specific pollutant.

Natural England advised that, in light of the unfavourable condition of the Somerset Levels and Moors Ramsar Site (due to high levels of phosphorous), before determining a planning application that may give rise to additional phosphorous within the catchment, competent authorities should undertake a Habitats Regulations Assessment (HRA) proceeding to an Appropriate Assessment where a likely significant effect cannot be ruled out, even where the development contains pollution mitigation provisions.

The Appropriate Assessment must rule out any reasonable doubt as to the likelihood of an adverse impact on the integrity of the site, having regard to its conservation objectives. Permission for the plan or project may only be given if the assessment allows you to ascertain that it will not have an adverse effect on the integrity of the site.

### Somerset Levels and Moors Protected Site(s)

The Somerset Levels and Moors are designated as an SPA under the Habitat Regulations 2017 and listed as a Ramsar Site under the Ramsar Convention. The Ramsar Site broadly covers the same area as the Somerset Levels and Moors SPA. While the SPA is designated for its international waterbird communities, the Ramsar Site is designated for its internationally important wetland features including the floristic and invertebrate diversity and species of its ditches, which is shared as a designated feature of the underpinning Sites of Special Scientific Interest (SSSIs). Further information relating to the unfavourable condition of the Ramsar Site and the underpinning SSSIs designated under the Wildlife & Countryside Act 1981 (as amended) is provided in Annex 1 of the Advice Note<sup>14</sup>.

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<sup>14</sup> Natural England Advice Note <https://www.somersetwestandtaunton.gov.uk/media/2434/natural-england-advice-to-lpas-on-nutrients-in-the-somerset-levels-and-moors.pdf>

In relation to the Somerset Levels and Moors SPA, based on current understanding, Natural England is satisfied that additional nutrients from typical new developments<sup>15</sup> (as described in the Advice Note) are unlikely, either alone or in-combination, to have a likely significant effect on the internationally important bird communities for which the site is designated. On this basis, Natural England is satisfied that the effects of additional nutrients from development on the SPA can normally be screened out of further assessment.

The types of development classed as 'typical' include:

- New residential units – including tourist accommodation, gypsy sites /pitches
- Commercial developments – where overnight accommodation is provided
- Agricultural Development – additional barns, slurry stores etc. where it is likely to lead to an increase in herd size
- Anaerobic Digesters
- Possibly some tourism attractions

However, the interest features of the Somerset Levels and Moors Ramsar Site are considered unfavourable, or at risk, from the effects of eutrophication caused by excessive phosphorous. The vast majority of the ditches within the Ramsar Site and the underpinning SSSIs are also classified as being in unfavourable condition due to excessive phosphorous and the resultant ecological response. Any plan or project which has the potential to affect the features of a European Site such as the Somerset Levels and Moors Ramsar Site is required to have an HRA.

Due to the number of applications for plans or projects being received by Somerset West and Taunton Council with phosphorous outputs, an HRA template was developed.

The purpose of the HRA template is to facilitate the HRA process for applicants and decision makers; a standardised approach will facilitate its review and the decision on whether the HRA can subsequently be adopted by the competent authority.

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<sup>15</sup> Refer to Somerset West and Taunton Council website for definition of a 'typical new development' <https://www.somersetwestandtaunton.gov.uk/planning/phosphates-on-the-somerset-levels-and-moors/>

## Notes on use of the HRA Template

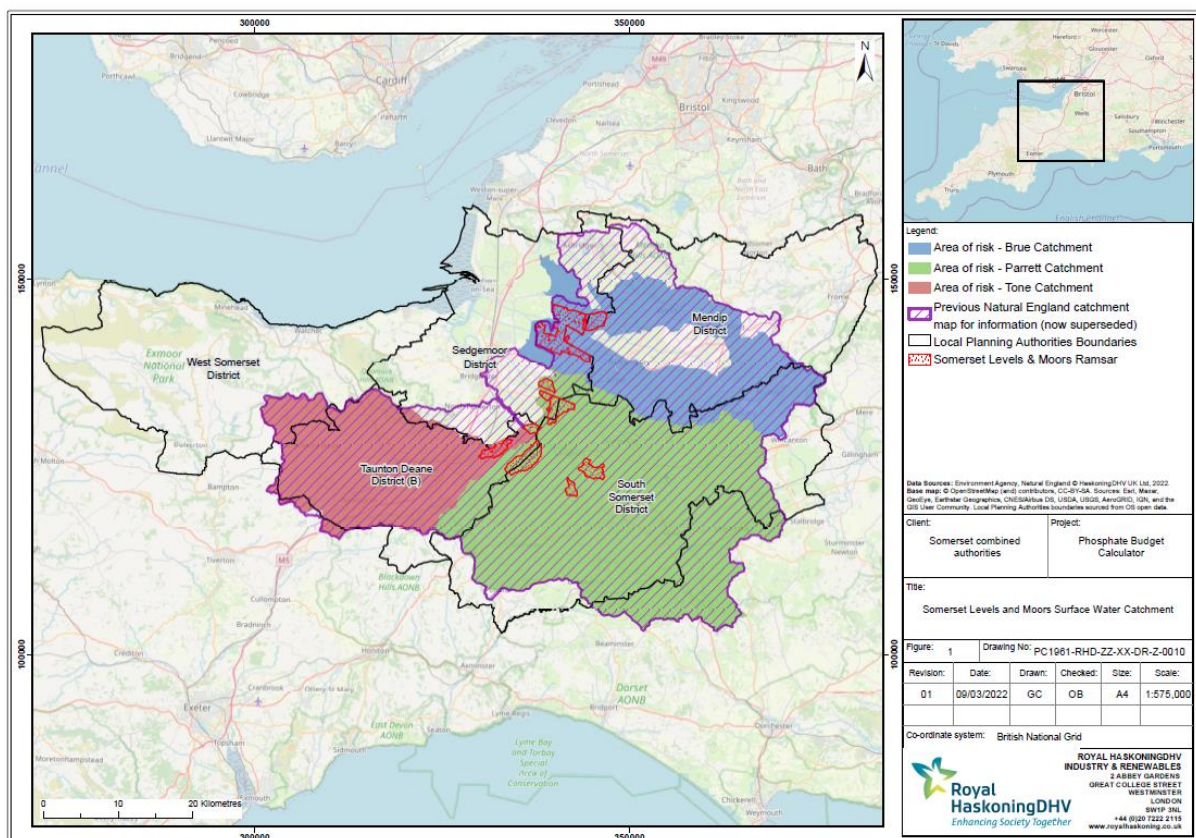
This HRA template has been developed for use by applicants of plans or projects that meet the definition of a 'typical development' (as defined in this document)\*. The plans and projects should be located within the Somerset West and Taunton Council area and have the potential to affect only the Somerset Levels and Moors Ramsar Site\*\* through risk of discharging phosphorous into its catchment area.

*\*Note: if the project does not fit under this classification, or is not considered straightforward, contact the Council for advice; a modified or extended version of this HRA may need to be carried out considering all European Sites.*

*\*\*Note: other European Sites are present throughout the Somerset West and Taunton Council area (for example the Severn Estuary Ramsar and SAC) and if these or any other European Site could be affected by the plan or project, a separate HRA should be prepared.*

A plan showing the boundary of the Somerset West and Taunton Council area and the Somerset Levels and Moors Ramsar Site is shown in Figure 1.

**Figure 1 Somerset West and Taunton Council area, river catchments and the Somerset Levels and Moors Ramsar Site**



Please note the following when completing this template:

- The applicant should read all of the information and guidance in this document including Sections 1 and 2 and then start filling in the template from Section 3.
- Guidance notes in each section are provided in green and should be deleted after use and before submitting the template to the Council.
- For any unused appendices state 'N/A' under the appendix heading
- The Somerset West and Taunton Phosphorous Budget Calculator<sup>16</sup> should be used to calculate phosphorous outputs. Refer to the Somerset West and Taunton Council website for further information on how to use it.
- Further subheadings may be created as appropriate under the existing sections to structure the information provided, but should not be numbered so as to preserve the existing section numbering
- When filling out tables, extra rows should be inserted as appropriate.
- Additional information may be referenced under the most relevant section and included in an Appendix (Appendices can be added as necessary as long as they are referenced in the text)
- If a section is not required, the numbered section heading should be preserved, but any guidance information and tables deleted and replaced with 'N/A'
- The template is provided for guidance purposes only, the applicant remains fully responsible for its content and for ensuring that it contains thorough, correct and scientifically accurate information.
- If the applicant is unsure of how to complete the HRA or does not possess the necessary skills and expertise to complete it accurately, they must seek professional advice.

When complete, the HRA is to be submitted to Somerset West and Taunton Council, as the competent authority under the Habitats Regulations. Natural England is the statutory nature conservation body and will be consulted at the appropriate assessment stage of the HRA process in line with statutory responsibilities<sup>17</sup>.

This template has been prepared using the guidance stated in Section 2 and has also drawn upon the HRA template available from Natural Resources Wales 'OGN 200 Form 1 Record of a Habitat Regulations Assessment of a project', Version 1.3, in particular using the same format of screening and appropriate assessment tables and the method of colour coding impact pathways for simplicity.<sup>18</sup>

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<sup>16</sup> Somerset Authorities Phosphorous Budget Calculator available at:

[https://ssccust1.spreadsheethosting.com/1/3d/08e177701b0026/Copy%20of%20P%20budget%20Calc\\_V3.1%20developer%20version/Copy%20of%20P%20budget%20Calc\\_V3.1%20developer%20version.htm](https://ssccust1.spreadsheethosting.com/1/3d/08e177701b0026/Copy%20of%20P%20budget%20Calc_V3.1%20developer%20version/Copy%20of%20P%20budget%20Calc_V3.1%20developer%20version.htm)

<sup>17</sup> See: <https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site>

<sup>18</sup> Natural Resources Wales 'OGN 200 Form 1, Record of a Habitat Regulations Assessment of a project' Version 1.3 <https://cdn.cyfoethnaturiol.cymru/media/690578/eng-habitat-regulations-assessment.pdf>

## **Appendix B**

### **Natural England Advice Note**

## **Appendix C**

### **Location Plan**

## **Appendix D**

### **Environmental Baseline**



## **Appendix E**

### **Plan or Project Details**

## **Appendix F**

### **Construction Methodology**

## **Appendix G**

### **Operational Methodology and Phosphorous Budget Calculator Output**

## **Appendix H**

### **Somerset Levels and Moors SPA Summary Characteristics**

## Somerset Levels and Moors SPA

Table 7: Summary characteristics of the Somerset Levels and Moors SPA (refer to Natural England website 'European Site Conservation Objectives for Somerset Levels & FA Moors SPA' for further information <sup>19</sup>)

<b>Name of European Site and its EU Code</b>	Somerset Levels and Moors SPA EU Site Code <b>UK9010031</b> (NB: The boundary of this site coincides with the Somerset Levels and Moors Ramsar Site)
<b>European Site size</b>	6,395 ha
<b>Description of European Site</b>	<p>The Somerset Levels and Moors contain the largest area of lowland wet grassland in England: 21% of the resource. Huge flocks of migratory waterfowl arrive in winter; more than at any other inland site in the UK. Its importance is year-round as it is one of the UK's most important breeding areas for Lapwing, Curlew, Redshank and Snipe: wading birds that depend on extensively grazed wet grassland. Meadows with more than 60 species in a single field and ditches supporting a unique assemblage of rare invertebrates add to its diversity.</p> <p>The floodplain's surviving biodiversity is recognised by a series of statutory designations. There are 17 Sites of Special Scientific Interest reflecting the national importance of 7,300 ha for lowland wet grassland, breeding wader populations and aquatic invertebrates. Twelve of the SSSIs, covering almost 6,400 ha, have been classified as important for wintering wildfowl and designated a Special Protection Area under the EC Birds Directive. The tiers of conservation designations are completed by recognition under the Ramsar Convention that the best habitats on the floodplain are notable for rare aquatic invertebrates and wintering waterbirds, making it one of the world's premier wetlands.</p> <p>The accumulation of designations makes it easy to lose sight of the fact that together they cover only 12% of the area of the floodplain. While they have helped attract limited investment to protect their biodiversity, little attention and few resources are given to the remainder, optimistically known as the "wider wetland". Much of the area outside the designated sites is a farmed grassland monoculture: too dry at critical times of the year to support wetland wildlife. This does not mean that it will always be of substantially lower value for wildlife. Promoting sustainable flood management and farming practices tailored to a wetland environment would rapidly reverse past losses and provide greater protection for the SPA.</p>
<b>Qualifying Features of the European Site</b>	<p>Qualifying individual species listed in Annex I of the Wild Birds Directive (article 4.1)</p> <p>Non-breeding (overwintering):</p> <ul style="list-style-type: none"> <li>• A037 <i>Cygnus columbianus bewickii</i>; Bewick's swan</li> <li>• A140 <i>Pluvialis apricaria</i>; European golden plover</li> </ul> <p>Qualifying individual species not listed in Annex I of the Wild Birds Directive (article 4.2)</p>

<sup>19</sup> Natural England website 'European Site Conservation Objectives for Somerset Levels & Moors SPA' (includes Somerset Levels and Moors SPA Conservation Objectives Supplementary Advice 2019/03/12, Somerset Levels and Moors Conservation Objectives 2019/02/14, and Somerset Levels and Moors SPA Citation 2014/09/26). <http://publications.naturalengland.org.uk/publication/4598158654963712>

	<p>Non-breeding (overwintering):</p> <ul style="list-style-type: none"> <li>• A052 <i>Anas crecca</i>; Eurasian teal</li> <li>• A142 <i>Vanellus vanellus</i>; Northern lapwing</li> </ul> <p>Qualifying assemblage of species (Article 4.2)</p> <ul style="list-style-type: none"> <li>• Waterbird assemblage (In addition to the Annex 1 and 2 species above the assemblage included Gadwall <i>Anas strepera</i>, Wigeon <i>Anas penelope</i>, Shoveler <i>Anas clypeata</i>, Pintail <i>Anas acuta</i>, Snipe <i>Gallinago gallinago</i> and Whimbrel <i>Numerius phaeopus</i>)</li> </ul> <p>NB: Since notification there has been a substantial increase in numbers. The representation of species exceeding national and international population thresholds in the assemblage has changed with eight species exceeding the international threshold (Golden Plover <i>Pluvialis apricaria</i>, Teal <i>Anas crecca</i>, Lapwing <i>Vanellus vanellus</i>, Gadwall <i>Anas strepera</i>, Wigeon <i>Anas penelope</i>, Shoveler <i>Anas clypeata</i>, Pintail <i>Anas acuta</i> and Mute Swan <i>Cygnus olor</i>), and five exceeding the national threshold (Bittern <i>Botaurus stellaris</i>, Little Egret <i>Egretta garzetta</i>, Ruff <i>Philomachus pugnax</i> and Green Sandpiper <i>Tringa ochropus</i>).</p> <p>Note: This SPA is ecologically linked to the Severn Estuary SPA with bird species notified as mobile qualifying features using either the inland or coastal European Sites as alternative winter feeding grounds according to the weather conditions</p>
<p><b>Names of component Site of Special Scientific Interest (SSSIs)</b></p>	<p>The SPA is comprised of 12 SSSIs located across the Somerset Levels and Moors floodplain.</p> <ul style="list-style-type: none"> <li>• Catcott Edington and Chilton Moors SSSI</li> <li>• Curry and Hay Moors SSSI</li> <li>• King's Sedgemoor SSSI</li> <li>• Moorlinch SSSI</li> <li>• Shapwick Heath SSSI</li> <li>• Southlake Moor SSSI</li> <li>• Tealham and Tadham Moors SSSI</li> <li>• West Moor SSSI</li> <li>• West Sedgemoor SSSI</li> <li>• Westhay Heath SSSI</li> <li>• Westhay Moor SSSI</li> <li>• Wet Moor SSSI</li> </ul>
<p><b>European Site Conservation Objectives</b></p>	<p>With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;</p> <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;</p> <ul style="list-style-type: none"> <li>• The extent and distribution of the habitats of the qualifying features</li> <li>• The structure and function of the habitats of the qualifying features</li> <li>• The supporting processes on which the habitats of the qualifying features rely</li> <li>• The population of each of the qualifying features, and,</li> <li>• The distribution of the qualifying features within the site</li> </ul>