

## 5. Biodiversity

### 5.1 Introduction

5.1.1 This chapter presents the preliminary assessment of the potentially<sup>1</sup> significant effects of the Project with respect to biodiversity, including terrestrial and aquatic ecology, and ornithology. The preliminary assessment is based on information obtained to date. It should be read in conjunction with the project description provided in **Chapter 2: The Project** and with respect to relevant parts of the following chapters:

- **Chapter 3: Approach to Preparing the PEIR** (which describes the EIA process followed and the approach to the assessment);
- **Chapter 7: Water Environment;**
- **Chapter 8: Landscape and Visual Amenity;**
- **Chapter 9: Air Quality;**
- **Chapter 10: Noise and Vibration;**
- **Chapter 11: Traffic and Transport;**
- **Chapter 12: Ground Conditions;**
- **Chapter 13: Agriculture and Soil Resources;**
- **Chapter 14: Land Use;**
- **Chapter 17: Climate Change - Greenhouse Gas Emissions; and**
- **Chapter 18: Climate Change Resilience.**

5.1.2 This chapter describes:

- The legislation, policy and technical guidance that has informed the assessment (**Section 5.2**);
- consultation and engagement that has been undertaken to date and how comments from consultees relating to biodiversity have been addressed (**Section 5.3**);
- the Study Area (**Section 5.4**);

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<sup>1</sup> NOTE – Other technical chapters use “likely significant effects” and “potential likely significant effects” to accord with the EIA Regulations (2017). Within the Biodiversity chapter the term “potentially significant effects” is used as it accords with CIEEM guidance to describe effects that have the potential to be significant prior to their assessment (i.e. until the end of the “scope of the assessment”), and the term “likely significant effects”, only once assessment has determined that they would indeed be significant. This is not to be confused with Likely Significant Effects (LSEs) when used in the context of the Habitats Regulations Assessment

- the methods used for baseline data gathering (**Section 5.5**);
- overall baseline (**Section 5.6**);
- embedded environmental measures relevant to biodiversity (**Section 5.7**);
- the scope of the assessment for biodiversity (**Section 5.8**);
- the Habitat Regulations Assessment (**Section 5.9**);
- the methodology applied for the assessment (**Section 5.10**);
- the preliminary assessment of biodiversity effects (**Section 5.11**);
- a summary of the preliminary significance conclusions (**Section 5.12**);
- additional measures proposed (**Section 5.13**); and
- an outline of further work to be undertaken for the Environmental Statement (ES) (**Section 5.14**).

5.1.3 This technical chapter has a structure that differs from others within this Preliminary Environmental Information Report (PEIR) to reflect Ecological Impact Assessment (EcIA) guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM)<sup>2</sup>.

5.1.4 A separate No Significant Effects Report (NSER) has been produced as part of the Habitats Regulation Assessment (HRA) process to determine whether the Project would have Likely Significant Effects (LSEs) on any European sites (see **Section 5.9** and **Appendix 5B**).

## Limitations and assumptions

5.1.5 The information provided in this PEIR is preliminary, the final assessment of potentially significant effects will be reported in the ES. The PEIR has been produced to fulfil the Applicant's consultation duties and enable consultees to develop an informed view of the potentially significant effects of the Project, and comment on this during statutory consultation before the design of the Project is finalised and taken forward to submission of the application for development consent.

5.1.6 The assessment within this chapter is based on surveys and data gathered to the point of writing<sup>3</sup>, and as such, it cannot be taken as a complete picture of the potential presence and significance of important<sup>4</sup> ecological features<sup>5</sup> that could be

<sup>2</sup> CIEEM (2018, updated 2019). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. Second Edition v1.1.

<sup>3</sup> To date extended Phase 1 habitat surveys have been carried out across an estimated 55% of land within the Preliminary Order Limits.

<sup>4</sup> Ecological features can be important for a variety of reasons related for example to the quality or extent of designated sites or habitat, to habitat/species rarity, or to the extent to which they are threatened throughout their range, or to their rate of decline.

<sup>5</sup> Ecological feature is the term used in this chapter to describe terrestrial/aquatic ecology and nature conservation receptors. This is to maintain consistency of terms between this assessment and the EcIA guidance provided by CIEEM (CIEEM, 2018, updated 2019).

affected by the Project. The baseline information and assessment will subsequently be updated as further baseline surveys are undertaken and the design is refined. All the data gathered to the point of submission will be provided in full within the ES. However, the information and assessments undertaken for this PEIR are considered sufficient to provide an informed view of the potentially significant effects of the Project on biodiversity and on which to base the remaining survey and assessment works.

- 5.1.7 As indicated in the baseline sections (within **Sections 5.5 – 5.6**, and **Table 5.10**), it is intended to conduct surveys for important features in 2022 and early 2023. These surveys are to allow for further design development, to complete sufficient habitat and species-specific baseline data collection, and consequently allow for further assessment of the potential effects of the Project in the ES. Should data be outstanding at that point in order to undertake a sufficient assessment e.g., due to a lack of access or survey conditions, a worst-case scenario would be assessed in the ES in line with best practice, precedent, and in consultation with relevant stakeholders. In that scenario limited surveys may need to be completed following the submission of the DCO in Q1 2023 to ensure any necessary outstanding data is available to complete the assessment.
- 5.1.8 The decision as to whether to carry out further surveys is influenced by two factors: the potential presence of important features considered likely to be present in the zone of influence (ZoI), and the possibility for potentially significant effects to arise as a result of the Project. Further surveys may need to be carried out:
- Where data sets are incomplete to date, due to amended or extended Preliminary Order Limits, land access constraints, or seasonal timing of surveys; and
  - to inform proposals for site-specific design and the development of embedded environmental measures and additional mitigation in advance of the application for development consent being submitted.
- 5.1.9 There remains a risk that site access may be refused in a limited number of locations prior to submission of the Development Consent Order (DCO) application. Where gaps in biodiversity baseline survey data remain, and where access remains unattainable, an alternative approach to data gathering and assessment will be discussed with relevant stakeholders. This will be designed to ensure that those assessments undertaken are robust enough to provide a sufficiently informed view of the potentially significant effects of the Project on biodiversity.
- 5.1.10 For this PEIR, a “worst case scenario” has been assumed for the purposes of the assessment. It is considered that the implementation of embedded environmental measures (see **Section 5.7**) and where relevant, any further, detailed mitigation outlined within this Chapter, would prevent any significant effects to the integrity or favourable conservation status of features (either habitat or species), and prevent breaches of legislation. This is discussed in the relevant ecological features section, as applicable.
- 5.1.11 The specific details of construction activities, effects and thus embedded environmental measures are subject to change and will be updated in the ES. The

evaluation of effects on ecological features has been carried out based on the methods and approaches to the delivery of construction works typical of this Project as presented in **Chapter 2: The Project**, which are considered to represent a reasonable worst case. Thus, at this point, embedded environmental measures are limited to those described in **Section 5.7**.

- 5.1.12 The evaluation of effects and significance for scoped features will be examined and assessed in the ES on data available at that stage, once environmental changes, effects and embedded environmental measures specific to the final design of the Project are available.
- 5.1.13 Further to the preliminary stage of the data gathering and assessment, there are no limitations relating to biodiversity that affect the robustness of the preliminary assessment of the potentially significant effects of the Project.

## 5.2 Relevant legislation, planning policy and technical guidance

- 5.2.1 This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to biodiversity. Further information on policies relevant to the Project is provided in **Chapter 4: Legislation and policy overview**.

## Legislation

5.2.2 A summary of the relevant legislation is given in **Table 5.1**.

**Table 5.1 Legislation relevant to the biodiversity assessment**

| Legislation                                                                               | Legislative context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>The Environment Act 2021<sup>6</sup></b>                                               | <p>The Environment Act (passed in November 2021) translates aspects of the government's "A Green Future: Our 25 Year Plan to Improve the Environment" -year plan into legislation. The Environment Act will make it mandatory, once the relevant secondary legislation is passed pursuant to the Act, for the vast majority of development projects to deliver a 10% Biodiversity Net Gain (BNG) as a requirement of their consent. This will become mandatory for Nationally Significant Infrastructure Projects (NSIPs) from November 2025.</p> <p>Once this legislation is passed, NSIPs consented under the Planning Act 2008 (as amended) will also need to deliver a biodiversity gain commitment. However, the percentage increase set will be controlled by the relevant Secretary of State either through individual National Policy Statements or by separately published statements.</p> |
| <b>Natural Environment and Rural Communities (NERC) Act 2006 (as amended)<sup>7</sup></b> | <p>Section 40 states "<i>every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.</i>"</p> <p>The NERC Act also places a duty on the Secretary of State to maintain lists of species and habitats which are regarded as being of principal importance for the conservation of biodiversity in England. These Habitats of Principal Importance (HPI) and Species of Principal</p>                                                                                                                                                                                                                                                                                                                                                                                      |

<sup>6</sup> UK Government (2021). Environment Act 2021, c. 30. (Online) Available at: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>. (Accessed 01 July 2022).

<sup>7</sup> UK Government (2006). Natural Environment and Rural Communities Act 2006, c.16. (online) Available at: <https://www.legislation.gov.uk/ukpga/2006/16/contents>. (Accessed 01 July 2022).

| Legislation                                                                               | Legislative context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <b>The Conservation of Habitats and Species Regulations 2017 (as amended)<sup>8</sup></b> | <p>Importance (SPI) are used to guide decision makers in implementing their duties to have regard to the conservation of biodiversity in England when carrying out their normal functions.</p> <p>The Conservation of Habitats and Species Regulations 2017 (as amended) transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") and elements of Directive 2009/147/EC on the conservation of wild birds ("the Birds Directive") in England.</p> <p>These aim to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora. The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites. Under the Regulations, competent authorities have a general duty to have regard to the EC Habitats Directive.</p> <p>Provides legal protection of animals listed on schedule two and plants on schedule five of the legislation.</p> <p>The Regulations are amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019<sup>9</sup> following the United Kingdom's withdrawal from the EU. These changes, allow for new administrative and regulatory arrangements and the creation of a national site network comprising the protected sites already designated under the Nature Directives, and any further sites designated under these Regulations.</p> |
| <b>Convention on Wetlands of International Importance 1972<sup>10</sup></b>               | <p>The UK Government is a signatory to the Convention on Wetlands of International Importance 1972 ("the Ramsar Convention"). The Ramsar Convention provides for the listing of wetlands</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

<sup>8</sup> UK Government (2017). The Conservation of Habitats and Species Regulations 2017 (No. 1012). (online) Available from <https://www.legislation.gov.uk/ukxi/2017/1012/contents>. (Accessed 01 July 2022).

<sup>9</sup> UK Government (2019). The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. (Online) Available at: <https://www.legislation.gov.uk/ukdsi/2019/9780111176573> (Accessed 01 July 2022).

<sup>10</sup> United Nations. Convention on Wetlands of International Importance especially as Waterfowl Habitat. 1994. (Online) Available from: [https://www.ramsar.org/sites/default/files/documents/library/current\\_convention\\_text\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/current_convention_text_e.pdf) (Accessed 01 July 2022).

| Legislation                                                                 | Legislative context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                                                                             | of international importance. UK Government policy is to give sites listed under this convention ("Ramsar Sites") the same protection as European sites and the new national site network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Wildlife and Countryside Act (WCA) 1981 (as amended)<sup>11</sup></b>    | <p>The WCA Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in England. This legislation is the mechanism by which the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (which transposed the EU European Union Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/EEC) to ensure the legislation still operates effectively following the United Kingdom's withdrawal from the EU) are implemented in England.</p> <p>The Act affords various levels of protection to species of plants and animals listed on Schedules one, five, six and eight of the Act, with Schedule nine listing species which it is an offence to allow to spread in the wild.</p> |
| <b>Badger Act 1992<sup>12</sup></b>                                         | Provides legal protection for badgers by making it illegal to kill or injure a badger, disturb a badger while occupying a sett, or to damage or obstruct a badger sett.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Countryside and Rights of Way Act 2000 ('the CRoW Act')<sup>13</sup></b> | This CRoW Act, amongst other elements, details further measures for the management and protection of Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

<sup>11</sup> UK Government (1981). Wildlife and Countryside Act 1981, c.69. (online) Available from <https://www.legislation.gov.uk/ukpga/1981/69/contents> (Accessed 01 July 2022).

<sup>12</sup> UK Government (1992). Badger Act 1992, c.51. (online) Available from <https://www.legislation.gov.uk/ukpga/1992/51/contents> (Accessed 23 01 July 2022).

<sup>13</sup> UK Government (2000). Countryside and Rights of Way Act 2000, c.37. (online) Available from <https://www.legislation.gov.uk/ukpga/2000/37/contents> (Accessed 01 July 2022).

| Legislation                                                                                                                                                                                         | Legislative context                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <b>The Hedgerow Regulations 1997<sup>14</sup></b>                                                                                                                                                   | Legislation that protects ‘important’ hedgerows from damage or destruction.                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>The European Union (EU) Water Framework Directive (2000/60/EC) (WFD) as enacted into domestic law by the Water Environment WFD (England and Wales) (Amendment) Regulations 2017<sup>15</sup></b> | <p>The WFD originates from the EU but has been retained in UK law in domestic legislation following the United Kingdom’s withdrawal from the EU as set out in the European Union (Withdrawal) Act 2018.</p> <p>A fundamental requirement of the WFD is to attain ‘<i>Good Ecological Status</i>’, or ‘<i>Good Ecological Potential</i>’ within each defined water body, by December 2027 at the latest and to ensure that any deterioration in status is prevented.</p> |
| <b>Salmon and Freshwater Fisheries Act 1975<sup>16</sup></b>                                                                                                                                        | Includes provisions that legally protect spawning fish, fish spawn, spawning areas and juvenile fish from harm/disturbance. Also includes provisions that make it an offence to impede/obstruct fish migration. The Act mainly relates to salmon and trout, also affording more limited protections to eels, lamprey, shad, smelt and freshwater fish.                                                                                                                  |
| <b>The Eel (England and Wales) Regulations 2009<sup>17</sup></b>                                                                                                                                    | Includes legal provisions to avoid actions that impede/obstruct eel migration/passage.                                                                                                                                                                                                                                                                                                                                                                                  |

## Planning policy

5.2.3 A summary of the relevant national and local planning policy is given in **Table 5.2**.

<sup>14</sup> UK Government (1997). The Hedgerows Regulations 1997 (No.1160). (online) Available from <https://www.legislation.gov.uk/ukxi/1997/1160/contents/made> (Accessed 01 July 2022).

<sup>15</sup> UK Government (2017). The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. (online) Available from [https://www.legislation.gov.uk/ukxi/2017/407/pdfs/ukxi\\_20170407\\_en.pdf](https://www.legislation.gov.uk/ukxi/2017/407/pdfs/ukxi_20170407_en.pdf) (Accessed 01 July 2022).

<sup>16</sup> UK Government (1975). Salmon and Freshwater Fisheries Act 1975, c.51. (online) Available at: <https://www.legislation.gov.uk/ukpga/1975/51/contents> (Accessed 01 July 2022).

<sup>17</sup> UK Government (2009). The Eels (England and Wales) Regulations 2009 (No. 3344). (online) Available from <https://www.legislation.gov.uk/ukxi/2009/3344/made> (Accessed 01 July 2022).

Table 5.2 Planning policy relevant to the biodiversity assessment

| Policy                                                                      | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| <b>National planning policy</b>                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Overarching National Policy Statement for Energy (EN-1)<sup>18</sup></b> | <p>Section 4.3.1: Notes that prior to an order to grant development consent, due consideration must be given by the IPC (now the Secretary of State) as to whether the project may have a significant effect on a European site, or on any site to which the same protection is applied as a matter of policy, either alone or in combination with other plans or projects in respect of the Habitats and Species Regulations.</p> <p>Section 5.3: Discusses the generic biodiversity and geological conservation effects associated with energy infrastructure, recognising the need to protect the most important biodiversity and geological conservation interests. It states that the applicant should ensure the ES clearly sets out any effects on internationally, nationally and locally designated sites of ecological importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity.</p> <p><i>International Sites</i>: most important sites for biodiversity identified through international conventions and European Directives. The Habitats Regulations provide statutory protection for these sites. Listed Ramsar Sites should also receive the same protection.</p> <p><i>Sites of Special Scientific Interest (SSSIs)</i>: for development considered likely to have an adverse effect on an SSSI consent should not normally be granted. For adverse effects after mitigation, consent should only be made where the benefits clearly outweigh the impact on features of the site and the national network of SSSIs.</p> <p><i>Regional/Local sites</i>: given the need for new infrastructure, these should not be used in themselves to refuse consent.</p> |

<sup>18</sup> Department of Energy and Climate Change (2011), Overarching National Policy Statement for Energy (EN-1). (online) Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/47854/1938-overarching-nps-for-energy-en1.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf) (Accessed 01 July 2022).

| Policy                                                        | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <b>National Planning Policy Framework (NPPF)<sup>19</sup></b> | <p><i>Ancient woodland</i>: consent should not be granted that results in loss/damage unless outweighed by the benefits. The loss of aged/veteran trees outside of areas of ancient woodland should be avoided and where affected all reasonable alternatives considered prior.</p> <p><i>Species of Principal Importance (SPI) and Habitats of Principal Importance (HPI)</i>: important for the conservation of biodiversity in England and therefore should be protected from adverse effects.</p> <p>Section 15: Focuses on the natural environment. It requires planning policies and decisions to contribute to and enhance the natural and local environment by protecting and enhancing sites of biodiversity proportionately to statutory status or identified quality; recognising wider benefits from natural capital and ecosystem services; and minimising impacts on and providing net gains for biodiversity (paragraph 174).</p> <p>Plans should identify, map and safeguard biodiversity interest and networks, including wildlife corridors, the hierarchy of designated sites, and areas identified by national and local, partnerships. They should also promote conservation, restoration and enhancement including HPI and SPI, as well as securing measurable net gain (paragraph 174).</p> <p>If significant harm to biodiversity will result from a development that cannot be avoided, mitigated, or compensated for, permission will be refused unless the benefits of development outweigh impacts, or exceptional reasons and compensation apply, and opportunities to improve biodiversity should be in their design, especially where this can secure measurable net gains or enhance public access (paragraph 180).</p> <p>Potential, possible, listed or proposed sites, and those that are an identified compensatory measure, are to be protected as the equivalent designation (paragraph 181).</p> <p>Potential impacts on sites requiring appropriate assessment will be considered ahead of the presumption for sustainable development (paragraph 182).</p> |

<sup>19</sup> Ministry of Housing, Communities and Local Government (2021). The National Planning Policy Framework (NPPF). (online) Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1004408/NPPF\\_JULY\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004408/NPPF_JULY_2021.pdf) (Accessed 01 July 2022).

| Policy                                                                 | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <b>Local planning policy</b>                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Cheshire East Local Plan Strategy 2010-2030 (2017)<sup>20</sup></b> | <p>Policy SE3: seeks to protect and enhance areas of high biodiversity and geodiversity value. It requires all development to positively contribute to the conservation and enhancement of biodiversity and geodiversity and should not negatively affect these interests Where any residual harm following mitigation/ compensation is provided to address adverse impacts of the proposed development, or where any harm following mitigation/ compensation, along with any other harm, is clearly outweighed by the benefits of the development.</p> <p>Policy SE5: Development proposals which will result in the loss of, or threat to, the continued health and life expectancy of trees, hedgerows or woodlands that provide a significant contribution to the amenity, biodiversity, landscape character or historic character of the surrounding area, will not normally be permitted, except where there are clear overriding reasons for allowing the development and there are no suitable alternatives. Where such impacts are unavoidable, development proposals must satisfactorily demonstrate a net environmental gain by appropriate mitigation, compensation, or offsetting. The council will seek to ensure:</p> <ol style="list-style-type: none"> <li>1. The sustainable management of trees, woodland and hedgerows including provision of new planting within the infrastructure of new development proposals</li> <li>2. The planting and sustainable growth of large trees within new development as part of a structured landscape scheme in order to retain and improve tree canopy cover within the borough as a whole.</li> </ol> <p>Policy ENV4: Sites will be protected from loss or damage taking account of hierarchy of designations, the irreplaceability of habitats, sites and/or features and contribution to the borough's ecological network of sites and features, and impact on priority habitats and protected/priority species.</p> |

<sup>20</sup> Cheshire East Council (2017). Cheshire East Local Plan (Online) Available at: [https://www.cheshireeast.gov.uk/planning/spatial-planning/cheshire\\_east\\_local\\_plan/cheshire\\_east\\_local\\_plan.aspx](https://www.cheshireeast.gov.uk/planning/spatial-planning/cheshire_east_local_plan/cheshire_east_local_plan.aspx) (Accessed February 2022)

| Policy                                                                                                                           | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                                                                                                                  | Development should not result in any net loss of natural assets and should seek to provide net gains. Mitigation and compensation will be required to ensure there is no net loss of environmental value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Cheshire East Local Plan Revised Publication Draft Site Allocations and Development Policies Document (2020)<sup>21</sup></b> | <p>Policy ENV 1: In line with Local Plan Strategy policy SE3, development proposals should seek to improve the connectivity, resilience and the functioning of the ecological network throughout Cheshire East.</p> <p>Policy ENV2: In line with Local Plan Strategy policy SE3, development proposals must deliver an overall net gain for biodiversity and must be supported by a biodiversity metric calculation to ensure the delivery of a biodiversity measurable net gain.</p> <p>Policy ENV4: Development proposals must make sure that river corridors are protected, and opportunities should be taken to enhance them as important natural landscape features.</p> <p>Policy ENV6: Developments should avoid impacting ancient woodland; ancient or veteran trees; and hedgerows deemed to be 'important'. They should also seek to avoid trees, woodland and hedgerows. Where this is not possible, replacement of these habitats should be integrated into the development scheme.</p> |
| <b>Macclesfield Borough Local Plan (2004)<sup>22</sup></b>                                                                       | <p>Policy NE11-14: The borough council will seek to conserve, enhance and interpret nature conservation interests. Development which would adversely affect nature conservation interests will not normally be permitted. These include SSSIs and sites of regional or local value.</p> <p>Policy NE17: In major developments in the countryside, the Borough Council will seek improvements for nature conservation, tree planting and landscaping and will negotiate</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

<sup>21</sup> Cheshire East Council (2022). Site Allocations and Development Policies Document (Online) Available at: [https://www.cheshireeast.gov.uk/planning/spatial-planning/cheshire\\_east\\_local\\_plan/site-allocations-and-policies/site\\_allocations\\_and\\_policies.aspx](https://www.cheshireeast.gov.uk/planning/spatial-planning/cheshire_east_local_plan/site-allocations-and-policies/site_allocations_and_policies.aspx) (Accessed 15 July 2022)

<sup>22</sup> Borough of Macclesfield (2004). Macclesfield Borough Local Plan (Online) Available at: [https://www.cheshireeast.gov.uk/planning/spatial-planning/saved\\_and\\_other\\_policies/macclesfield\\_local\\_plan/macclesfield\\_local\\_plan.aspx](https://www.cheshireeast.gov.uk/planning/spatial-planning/saved_and_other_policies/macclesfield_local_plan/macclesfield_local_plan.aspx) (Accessed 15 July 2022)

| Policy                                                                                                            | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                                                                                                   | appropriate legal agreements to secure the implementation of these improvements by the developer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Cheshire West &amp; Chester Council Local Plan (Part 1) Strategic Policies (2015)<sup>23</sup></b>             | <p>Policy ENV3: Supports the creation, enhancement, protection and management of a network of high quality multi-functional Green Infrastructure, by requiring development to incorporate new and/or enhanced green infrastructure of an appropriate type, standard and size or contributing to alternative provision elsewhere, and increased planting of trees and woodlands, particularly in urban areas and urban fringe.</p> <p>Policy ENV4: Sites will be protected from loss or damage taking account of hierarchy of designations, the irreplaceability of habitats, sites and/or features and contribution to the borough's ecological network of sites and features, and Impact on priority habitats and protected/priority species.</p> <p>Development should not result in any net loss of natural assets and should seek to provide net gains. Mitigation and compensation will be required to ensure there is no net loss of environmental value.</p> |
| <b>Cheshire West &amp; Chester Local Plan (Part 2) Land Allocations and Detailed Policies (2019)<sup>24</sup></b> | <p>Policy DM44: In line with Local Plan (Part One) policy ENV 4, development will be supported where there is no net loss of natural assets and, wherever possible, it delivers net gains within the borough.</p> <p>Development likely to have an impact on protected sites (statutory and non-statutory), protected/priority species, priority habitats or geological sites must be accompanied by an Ecological Assessment that complies with industry best practice and guidance.</p> <p>DM45: In line with Local Plan (Part One) policies ENV 3 and ENV 4, development will be supported where it conserves, manages and, wherever possible, enhances existing trees,</p>                                                                                                                                                                                                                                                                                      |

<sup>23</sup> Cheshire West and Chester Council (2014) Cheshire West and Chester Local Plan (Part One) Strategic Policies (Online) Available at: [http://consult.cheshirewestandchester.gov.uk/portal/cwc\\_ldf/adopted\\_cwac\\_lp/lp\\_1\\_adopted?tab=files](http://consult.cheshirewestandchester.gov.uk/portal/cwc_ldf/adopted_cwac_lp/lp_1_adopted?tab=files) (Accessed July 2022).

<sup>24</sup> Cheshire West and Chester Council (2014) Cheshire West and Chester Local Plan (Part Two) Land Allocations and Detailed Policies (Online) Available at: [https://consult.cheshirewestandchester.gov.uk/portal/cwc\\_ldf/adopted\\_cwac\\_lp/parttwo\\_adopted](https://consult.cheshirewestandchester.gov.uk/portal/cwc_ldf/adopted_cwac_lp/parttwo_adopted) (Accessed July 2022).

| Policy                                                                | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Halton Delivery and Allocations Local Plan (2022)<sup>25</sup></b> | <p>woodlands, traditional orchards, and hedgerows. All significant healthy trees, woodlands, traditional orchards, and hedgerows should be integrated into the development scheme. Where possible, existing significant trees should be incorporated within public open space.</p> <p>Policy HE1: Sets out a hierarchy for consideration of development which may affect a designated asset, of avoidance, minimisation, mitigation and compensation. Development which may adversely affect the integrity of internationally important sites will only be permitted where there are no alternative solutions and there are imperative reasons of overriding public interest.</p> <p>The policy sets out when and how development which may cause significant harm will be permitted for Sites of Local Importance, Sites of National Importance, Priority habitats, Priority Species and Protected Species.</p> <p>Mitigation, replacement or compensatory measures may be required.</p> <p>The policy also considers non-designated sites and habitats, ecological networks, and high-quality agricultural land.</p> <p>Policy HE5: Sets out guidance in relation to the protection, management and mitigation measures in relation to woodland, trees and hedgerows, and landscaping</p> |
| <b>St Helens Local Plan Core Strategy (2012)<sup>26</sup></b>         | <p>Policy CQL2: Sets out how the multi-purpose value of trees, woodlands and hedgerows will be protected and enhanced.</p> <p>Policy CQL3: Sets out in detail how the council will protect and manage species and habitats, as well as enhancing and creating linkages between them. It requires developers to incorporate habitat features into their developments, ensure suitable mitigation measures, reduce habitat fragmentation, and basing development on ecological assessments where</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

<sup>25</sup> Halton Borough Council (2022). Planning Policies/Plans. (Online) Available at: <https://www3.halton.gov.uk/Pages/planning/policyguidance/planningplans.aspx> (Accessed February 2022)

<sup>26</sup> St Helens Borough Council (2017). Adopted Plans and Policies. (Online) Available at: <https://www.sthelens.gov.uk/article/3775/Adopted-plans-and-policies> (Accessed February 2022)

| Policy                                                             | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                    | appropriate. Development affecting important sites or species must give evidence that it outweighs the conservation interest.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>St Helens 1998 Unitary Development Plan (1998)<sup>26</sup></b> | <p>Policy ENV 1: This policy seeks to ensure the protection of the open spaces within the area. Open spaces that have a use cannot be lost to development.</p> <p>Policy ENV 4: Affords protection to the SSSIs of the area and their character and setting.</p> <p>Policy ENV 5: Affords protection to the Sites of Community Wildlife Interest and Local Nature Reserves of the area and their character and setting.</p> <p>Policy ENV 11: Establishes that developments on a location with existing trees must carry out appropriate tree surveys.</p> <p>Policy ENV 12A: Requires developments to not result in a significant loss of trees and ensure they replace any trees that are lost.</p> |
| <b>Bold Forest Park Area Action Plan (2017)<sup>26</sup></b>       | <p>Policy BFP1: In developing the Forest Park infrastructure and attractions, the Council will work with its partners to seek an economic focus balanced with environmental sustainability, in order to meet the needs of the community.</p> <p>Policy BFP ENV 2: Complimenting wildlife protection measures set out in Core Strategy</p> <p>Policy CQL3 St. Helens Council and its project partners will, within a woodland and farming framework, enhance biodiversity in Bold Forest Park by developing an ecological network, which reduces habitat fragmentation and increases the resilience of wildlife in Bold Forest Park.</p>                                                               |
| <b>St Helens Borough Local Plan up to 2037 (2022)<sup>27</sup></b> | <p>Policy LPC06: Seeks to ensure the protection of and enhancement of St Helen's biodiversity assets. Ecological assessments should be undertaken where appropriate. Development affecting important sites or species must give evidence that it outweighs the conservation interest. Development that would cause significant harm to a SSSI, LWS, LNR, Local, Priority</p>                                                                                                                                                                                                                                                                                                                          |

<sup>27</sup> St Helens Borough Council (2022). St Helens Borough Local Plan. (Online) Available at: <https://www.sthelens.gov.uk/localplan> (Accessed July 2022)

| Policy                                                                                         | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                | Habitat, legally protected species and/or priority species, without adequate mitigation, will be refused.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Trafford Local Plan: Core Strategy (2012)<sup>28</sup></b>                                  | Policy R2: Requires developers to demonstrate through a supporting statement how their proposal will protect and enhance the landscape character, biodiversity, geodiversity and conservation value of its natural urban and countryside assets, and protect the natural environment throughout the construction process. Where the council considers it necessary developers will be required to provide an appropriate ecological assessment report.                                                                                                                                                                          |
| <b>The Warrington Local Plan Core Strategy (2014)<sup>29</sup></b>                             | Policy QE5: Development adversely effecting designated sites will not be permitted unless the reasons for the development outweigh the need. Proposals affecting protected sites, wildlife corridors, key habitats or priority species should be accompanied by information proportionate to their nature conservation value including; a site survey; an assessment of the likely impacts of the proposed development; an assessment of whether the reasons for the development clearly outweigh the nature conservation value of the site, area or species; and proposals for compensating for features damaged or destroyed. |
| <b>Warrington Updated Proposed Submission Version Local Plan 2021-2038 (2021)<sup>30</sup></b> | Policy DC4: The policy seeks to conserve, restore and enhance biodiversity as well as securing a measurable net gain across the Plan area. Sites will be protected and developments should seek to avoid, mitigate or compensate for any adverse impacts. Impacts on priority habitat and protected/notable species should also be avoided wherever possible.                                                                                                                                                                                                                                                                   |

<sup>28</sup> Trafford Council (2012). Core Strategy. (Online) Available at: <https://www.trafford.gov.uk/planning/strategic-planning/local-plan/core-strategy.aspx> (Accessed February 2022)

<sup>29</sup> Warrington Borough Council (2014). Adopted Local Plan 2014. (Online) Available at: <https://www.warrington.gov.uk/adopted-local-plan-2014> (Accessed February 2022)

<sup>30</sup> Warrington Borough Council (2022). Warrington updated proposed submission version local plan (Online) Available at: [https://www.warrington.gov.uk/sites/default/files/2021-09/warrington\\_updated\\_proposed\\_submission\\_version\\_local\\_plan\\_upsvlp\\_2021-2038\\_-\\_september\\_2021.pdf](https://www.warrington.gov.uk/sites/default/files/2021-09/warrington_updated_proposed_submission_version_local_plan_upsvlp_2021-2038_-_september_2021.pdf) (Accessed July 2022)

## Technical guidance

5.2.4 A summary of the technical guidance for biodiversity is given in **Table 5.3**.

**Table 5.3 Technical guidance relevant to the biodiversity assessment**

| Technical guidance document                                                                                                                                               | Context                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CIEEM (2018, updated 2019) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. Second Edition v1.1<sup>2</sup></b> | Provides guidance that is relevant to the assessment of potentially significant effects on biodiversity.                                                                                                                                                                      |
| <b>IEMA<sup>31</sup> (1995) Guidelines for Baseline Ecological Assessment (1995)<sup>32</sup></b>                                                                         |                                                                                                                                                                                                                                                                               |
| <b>Guidelines for Preliminary Ecological Appraisal: Second Edition (2017)<sup>33</sup></b>                                                                                |                                                                                                                                                                                                                                                                               |
| <b>BS 42020 Biodiversity: Code of Practice for Planning and Development<sup>34</sup></b>                                                                                  | British Standard 42020 “gives recommendations and guidance for those in the planning and development and land use sectors whose work might affect or have implications for the conservation or enhancement of biodiversity. As such it is applicable to professionals working |

<sup>31</sup> The Institute of Environmental Assessment merged with The Institute of Environmental Management and the Environmental Auditor's Registration Association to form the Institute of Environmental Management and Assessment

<sup>32</sup> Institute of Environmental Assessment (IEA) (1995). Guidelines for Baseline Ecological Assessment. E & FN Spon, London.

<sup>33</sup> CIEEM (2017). Guidelines for Preliminary Ecological Appraisal: Second Edition. CIEEM, Winchester.

<sup>34</sup> British Standards Institute (2013). BS 42020 – a code of practice for biodiversity in planning and development - Smart guide to biodiversity in planning and development. (online) Available from <https://www.bsigroup.com/LocalFiles/en-GB/biodiversity/BS-42020-Smart-Guide.pdf> (Accessed 01 July 2022).

**Technical guidance document****Context**

in the fields of ecology, land use planning, land management, architecture, civil engineering, landscape architecture, forestry, arboriculture, surveying, building and construction.” It provides guidance on how to produce ecological information to accompany planning applications. It recommends that ecological impacts should be assessed and recommendations for mitigation, compensation and enhancement should be made in accordance with the Guidelines for Ecological Impact Assessment<sup>2</sup>, and provides guidance on the mitigation hierarchy.

## 5.3 Consultation and engagement

### Overview

- 5.3.1 The assessment has been informed by consultation responses and ongoing statutory and technical engagement. An overview of the approach to consultation is provided in **Section 3.4 of Chapter 3: Approach to Preparing the PEIR**.

### Scoping Opinion

- 5.3.2 A Scoping Opinion was adopted by the Secretary of State, administered by the Planning Inspectorate, on 08 March 2022. A summary of the relevant responses received in the Scoping Opinion in relation to biodiversity and confirmation of how these have been addressed within the assessment to date is presented in **Table 5.4**.
- 5.3.3 The information provided in the PEIR is preliminary and not all the Scoping Opinion comments have been addressed at this stage, however all comments will be addressed within the ES.

Table 5.4 Summary of EIA Scoping Opinion responses for biodiversity

| Consultee                    | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | How addressed in this PEIR                                                                                                                                                                                      |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Planning Inspectorate</b> | <p>Paragraph 5.6.16<br/>Midland Meres and Mosses Phase 1 Ramsar</p> <p>The Applicant proposes to scope out effects on this designated site on the basis that there are no ornithological features designated as part of the Ramsar, and there is no hydrological connectivity between the site and the Proposed Development. The Inspectorate considers that effects on this designated site can be scoped out on this basis.</p>                                                                                                                                                                                                                                              | Noted, no action required.                                                                                                                                                                                      |
| <b>Planning Inspectorate</b> | <p>Paragraph 5.6.16<br/>Dee Estuary Special Protection Area (SPA) and Ramsar</p> <p>The Applicant proposes to scope out effects on these designated sites on the basis that the sites qualifying features are unlikely to forage within the proposed site boundary or a 500m buffer, given the distance from the Proposed Development (c. 13.5 km west) and the lack of hydrological connectivity between the Proposed Development and Ramsar site. The Inspectorate considers that if it can be demonstrated there is no potential effect pathway between the Proposed Development and these designated sites, then the Inspectorate agrees that these can be scoped out.</p> | Potential indirect impacts, including pathways for effects on this designated site and its qualifying features is assessed within this PEIR ( <b>Section 5.11</b> ) and supporting NSER ( <b>Appendix 5B</b> ). |
| <b>Planning Inspectorate</b> | <p>Paragraph 5.6.16<br/>Mersey Narrows and North Wirral Foreshore SPA and Ramsar</p> <p>The Applicant proposes to scope out effects on these designated sites on the basis that the sites qualifying features are unlikely to forage within the proposed site boundary or 500m buffer, given the distance from the Proposed Development (c. 18.2 km northwest) and the lack of hydrological connectivity between the Proposed Development and Ramsar site. The Inspectorate considers that insufficient evidence has</p>                                                                                                                                                       | Noted. Potential indirect impacts, including pathways for effects on this designated site and its qualifying features are assessed within this PEIR ( <b>Section 5.8</b> ) and NSER ( <b>Appendix 5B</b> ).     |

| Consultee                    | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | How addressed in this PEIR                                                                                                                                                                                                                                              |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | been submitted to demonstrate that the Proposed Development will not impact on functionally linked land. The ES should identify the potential for bird species associated with the designated sites to be present and assess any likely significant effects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                         |
| <b>Planning Inspectorate</b> | <p>Paragraph 5.6.16</p> <p>Ribble and Alt Estuaries SPA and Ramsar</p> <p>The Applicant proposes to scope out effects on these designated sites on the basis that the sites qualifying features are unlikely to forage within the proposed site boundary or 500m buffer, given the distance from the Proposed Development (c. 18.5 km northwest) and the lack of hydrological connectivity between the Proposed Development and Ramsar site. The Applicant highlights that the upper limit of pink footed goose (a qualifying feature of the SPA) foraging activity from winter roost sites is 15-20 km with farmland the principal foraging habitat in winter and states that given the amount of grassland habitat within the wider area, impacts on this species are considered negligible. The Inspectorate considers that if it can be demonstrated there is no potential effect pathway between the Proposed Development and these designated sites, then the Inspectorate agrees that these can be scoped out.</p> | <p>Potential indirect impacts, including pathways for effects on this designated site and its qualifying features are assessed within this PEIR (<b>Section 5.8</b>) (see <b>Appendix 5A</b> and NSER <b>Appendix 5B</b> for further reasoning).</p>                    |
| <b>Planning Inspectorate</b> | <p>Paragraph 5.6.16</p> <p>The Applicant proposes to scope breeding bird surveys targeted at non-Schedule 1 species out of the assessment on the basis that any effects upon active nests of breeding birds can be mitigated via the embedded environmental measures listed in Table 5.5 of the Scoping Report (e.g., timing of vegetation clearance works outside the breeding bird season) and where this is not possible, through carrying out preconstruction nest checks and where a nest is found, through implementing measures such</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>Noted. As discussed with the Planning Inspectorate on 20 June 2022, the appropriate mitigation, including timings and methodology for non-Schedule 1 breeding birds will be described in the Biodiversity Mitigation Strategy which will be secured via the DCO.</p> |

| Consultee                    | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | How addressed in this PEIR                                                                                                                                                                                                                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | as protective buffers and ecological monitoring. Subject to demonstrating that the timing of works will avoid impacts to breeding birds and that this is secured through the DCO or other legal mechanism, the Inspectorate is content that this matter can be scoped out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                      |
| <b>Planning Inspectorate</b> | Paragraph 5.6.16<br>The Applicant proposes to scope out the potential for significant effects on dormice due to the location of the Proposed Development and the lack of suitable connective habitat to the nearest known population. The Inspectorate considers that an assessment of effects on dormice can be scoped out on the basis of the arguments presented. However, should the further studies and surveys proposed to inform the impact assessment identify possible presence of this species, the ES should include an assessment of impacts on dormice.                                                                                                                                                                                                                                                        | Noted. Should further studies identify the possible presence of the species, additional surveys will be completed and an assessment of effects on dormice will be included in the ES.                                                                                                |
| <b>Planning Inspectorate</b> | Paragraph 5.6.16<br>The Applicant proposes to scope out the potential for significant effects on reptiles due to the location of the Proposed Development, the limited footprint located within predominantly sub-optimal agricultural landscape along with the employment of embedded environmental measures included within Table 5.5, which the Applicant states would avoid significant effects on reptiles. In the absence of the detailed routing information, the Inspectorate does not consider there is sufficient information to reasonably conclude that there will be no likely significant effects on reptiles. Accordingly, the ES should include an assessment of these matters, or information demonstrating agreement with the relevant consultation bodies and the absence of likely significant effects. | Noted. If there is insufficient evidence to conclude that there will be no likely significant effects on reptiles, or unless agreed with relevant consultation bodies in the interim, an assessment of the potential for significant effects on reptiles will be included in the ES. |
| <b>Planning Inspectorate</b> | Paragraph 5.6.6<br>With the exception of species receiving specific legal protection, or those                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | As discussed with the Planning Inspectorate on 20 June 2022, Ecological                                                                                                                                                                                                              |

| Consultee                    | Consideration                                                                                                                                                                                                                                                                                                                                        | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | subject to legal control, the Applicant proposes to scope out all ecological features determined to be important at negligible level from the assessment. The Inspectorate remains concerned about the proposal to scope out species of negligible importance and advises that this should only be done with the agreement of relevant stakeholders. | features of negligible importance are scoped out at this stage they are sufficiently widespread, unthreatened or will not be significantly affected. This is in line with IEMA, EIA and CIEEM guidance, to provide a proportionate assessment of effects. Justification for doing so in respect of features of negligible importance is provided, where applicable. This is in accordance with CIEEM's Guidelines for Ecological Impact Assessment in the UK and Ireland, IEMA proportionate EIA strategy (2017) and the EIA regulations (2017). Following the initial surveys and review of data gathered during the desk study, a review of ecological features will be undertaken to determine which are taken forward for further assessment following this guidance. Agreement with consultees will be sought should the approach vary from this guidance. |
| <b>Planning Inspectorate</b> | Paragraph 5.7.15<br>The Inspectorate notes that BNG proposals are currently being considered by the Applicant. The assessment of BNG reported in the ES should be based on an appropriate metric that allows clear understanding of how gains and losses have been calculated. The ES                                                                | The latest biodiversity metric (V3.1) <sup>35</sup> will be used to calculate gains and losses and methods used will be summarised within the ES. The ES/supporting BNG documentation will clearly set out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

<sup>35</sup> Natural England (2021). Biodiversity Metric V3.1 (online) Available at: <http://publications.naturalengland.org.uk/publication/6049804846366720> (Accessed 6 August 2022).

| Consultee                    | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | should clearly distinguish between mitigation for significant adverse effects on biodiversity from wider enhancement measures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | mitigation measures for significant adverse effects on biodiversity and for wider enhancement as appropriate.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Planning Inspectorate</b> | Table 5.7<br>Table 5.7 of the Scoping Report identifies potentially significant effects from noise and physical activities leading to disturbance of SPA qualifying features and Site of Special Scientific Interest (SSSI) designated species using functionally linked land. The ES should also consider the impacts that any direct loss of functionally linked land may have on relevant European and nationally designated sites.                                                                                                                                                                                                                                                                                                                                | Any potential impacts on qualifying or notified features of internationally and nationally designated sites respectively, will be assessed within the ES and/or NSER ( <b>Appendix 5B</b> , with respect to those internationally designated sites e.g., SPA/SAC/Ramsar site).                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Planning Inspectorate</b> | Table 5.9 of the Scoping Report states that winter bird survey methods will involve walking a number of transects, will be undertaken in two key areas within the scoping red line boundary and will focus on detecting qualifying features of the Mersey Estuary SPA using functionally linked land within the Zone of Influence of the designated site. It is unclear how the two key areas have been identified or why these are representative of the effects of the Proposed Development on wintering birds. The baseline survey data contained within the ES should be representative of the full effects of the scheme. The ES should include evidence that the extent, location and methodology of surveys has been agreed with relevant consultation bodies. | The winter bird survey approach was based on the preferred pipeline routes outlined in the HyNet Phase 2 Feasibility Report - North West England Hydrogen Pipeline Network (Saith Limited, 2020) and the CO2 and H2 Pipeline Enabling Works – Wintering Bird Survey Methodology (WSP, 2021). Survey areas were amended or extended to ensure all Functionally Linked Land (FLL) within 500 m potentially impacted by alternative routing options were suitably covered (FLL was assessed on the basis of the following NE commissioned report: " <i>Review and analysis of changes in waterbird use of the Mersey Estuary SPA, Mersey Narrows &amp; North Wirral Foreshore pSPA and Ribble &amp; Alt Estuaries SPA (NECR173)</i> ". Wintering |

| Consultee                    | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | How addressed in this PEIR                                                                                                                                                                                                                                                                                                       |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | bird survey results are presented in paragraphs 5.6.25-5.6.26 of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> .<br>It is intended to employ the same survey approach for the Project and inform Natural England of the approach.                                                                   |
| <b>Planning Inspectorate</b> | Paragraph 7.6.7 and Table 5.7<br>The Scoping Report states that direct effects on fish populations such as disturbance from artificial light, noise or vibration, and habitat removal, loss, or damage during construction will be assessed within the ES. The ES should also consider the potential impacts from construction and operational activities on migratory fish transiting the area e.g., to/from the Mersey Estuary.                                                                                                                                                                                                                                                                  | Noted. Where there is potential for significant effects to arise, the ES will consider the potential impacts from construction and operational activities on migratory fish transiting the area.                                                                                                                                 |
| <b>Canal and River Trust</b> | The Trust agree that ecology should be scoped into the Environmental Statement. The waterways potentially support rich ecology and biodiversity, and the development could have an adverse impact on the ecology of the waterway. As detailed below water quality must be protected during and post works, with consideration given to protecting the wildlife corridors along and to the canal from, water pollution, air pollution and light pollution during construction and during the operation of the development. The potential impacts on the waterway corridor should be fully considered within the environmental statement and should detail appropriate and proportionate mitigation. | Noted. Where there is potential for significant effects to arise on biodiversity related to waterways, these will be presented within the ES and appropriate mitigation outlined.<br>The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> . |
| <b>Canal and River Trust</b> | According to our records and based on the broad corridors it does not appear that any of the proposed routes fall within a SSSI or European Protected site that the Trust has responsibility for. It does appear that a                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Desk study findings are summarised in <b>Section 5.6</b> of this PEIR. <b>Figures 5.1</b> and <b>5.2</b> to the PEIR illustrate designated sites                                                                                                                                                                                 |

| Consultee                    | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | number of the routes will fall within areas where our waterways are County Wildlife Site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | in relation to the Preliminary Order Limits. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with potentially significant effects assessed in <b>Section 5.11</b> .                                                                                                                                                            |
| <b>Canal and River Trust</b> | The Ecological chapter of the scoping document appears to include all the surveys and impacts reviews and assessments of everything that we would expect to see within this chapter including protected species, protected sites, invasive species, habitats and species of concern, trees & fishery.                                                                                                                                                                                                                                                                                                   | Noted, no action required.                                                                                                                                                                                                                                                                                                                               |
| <b>Canal and River Trust</b> | With regards to bats, waterway corridors often form dark havens for bats where they can forage and roost without disturbance from light, which should be protected. The existing trees and hedgerows within the corridor of works also play an important role for bat foraging and commuting as well as potentially for bat roosts. Bats would also be particularly sensitive to the lighting that might be provided within the scheme, especially during the construction phase. Regard would also need to be given to nesting birds and other protected species which may be present along the route. | Surveys for bats will be conducted where potential for significant effects on them exists. The impacts of the works on these species will be assessed at the ES stage and appropriate mitigation determined. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> . |
| <b>Canal and River Trust</b> | An assessment of the presence of Invasive non-native species will be required on the finalised route corridors and measures must be in place to ensure there is no spread of them during construction or routine maintenance of the pipeline and associated infrastructure. Any invasive species found along the routes would also need to be considered and treated/remediated/removed accordingly to prevent them spreading.                                                                                                                                                                          | Surveys for invasive non-native species are being undertaken as part of the habitat assessments. The impacts of the works on these species will be assessed at the ES stage and appropriate mitigation determined. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with                                                        |

| Consultee                    | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | likely significant effects assessed in <b>Section 5.11.</b>                                                                                                                                                                                                                                                                                                                                              |
| <b>Canal and River Trust</b> | In terms of mitigation and biodiversity net gain there may be potential to consider compensatory planting along our waterways on Trust land in the vicinity of the crossings.                                                                                                                                                                                                                                                                                                                                                                                                                                          | Noted. To be considered within the ES if necessary.                                                                                                                                                                                                                                                                                                                                                      |
| <b>Cheshire East Council</b> | Botanical/Habitat Surveys<br>UKHAB surveys should be undertaken of all habitats potentially affected by the route. It is suggested that this in addition to or instead of the proposed Phase One Habitat Surveys. All habitats affected by the route or subject to enhancements as means of providing compensation as part of the scheme should be subject to a condition assessment in accordance with the Natural England Version 3 biodiversity metric methodology. The results of the UKHAB and Conditions assessment would inform the assessment of the schemes likelihood of delivering a Biodiversity Net gain. | Surveys are currently being undertaken using the UK Habitat classification system. All habitats within the survey area will be subject to a condition assessment and this information will be used to inform BNG calculations (using the latest metric v3.1). The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11.</b> |
| <b>Cheshire East Council</b> | Desk Study<br>As part of the data gathering exercise undertaken to inform the desk study Cheshire and Wirral Ornithology Society should be contacted for bird data and Cheshire Wildlife Trust for Local Wildlife Site data.                                                                                                                                                                                                                                                                                                                                                                                           | Noted. Bird data has been requested from the British Trust for Ornithology (BTO), Cheshire and Wirral Ornithological Society (CAWOS) and Raptor Study Groups – Cheshire/Wirral and South Manchester (RSG) to inform the baseline and assessment process within the ES.                                                                                                                                   |
| <b>Cheshire East Council</b> | Assessment of County Importance Receptors<br>Cheshire and Wirral LWS selection criteria must be used to identify habitats and species assemblages of County Importance.                                                                                                                                                                                                                                                                                                                                                                                                                                                | Noted. Cheshire and Wirral LWS selection criteria will be used to identify habitats and species assemblages of County Importance.                                                                                                                                                                                                                                                                        |

| Consultee                        | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Cheshire East Council</b>     | Breeding Birds<br>No surveys for non-schedule 1 bird species are currently proposed. This is only acceptable if no habitats considered likely to support important bird assemblages are likely to be affected by proposed route. If there is a loss of habitat with significant potential to support important assemblages of breeding birds (such as woodland, wetland, scrub etc.) then detailed bird surveys should be included within the scope of the EIA process.                                                                                | See PINS response to Paragraph 5.6.16 above. Where potential remains for a potentially significant effect to arise, this will be assessed in the ES.                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Cheshire East Council</b>     | Biodiversity Net Gain<br>In order to assess the overall loss/gains of biodiversity an assessment undertaken in accordance with the Defra Biodiversity 'Metric' version 3 must be undertaken and incorporated into the ES. If additional habitat creation measures are required to ensure the site achieves a net gain for biodiversity consideration should be given to the creation of additional ponds and species rich grassland. Offsite habitat creation may be required if an appropriate level of habitat creation cannot be delivered on site. | The BNG metric has been updated and thus we will be using V3.1 to calculate gains and losses, and methods used will be summarised within the ES. The ES/supporting BNG documentation will clearly set out mitigation measures for significant adverse effects on biodiversity and for wider enhancement as appropriate. Creation of additional ponds and species rich grassland will be considered to achieve Biodiversity Net Gain. Offsite habitat creation will also be considered if BNG cannot be achieved onsite. |
| <b>Cheshire West and Chester</b> | Midlands Meres and Mosses Phase 1 Ramsar: Due to the potential for dust/air pollution associated with the development, and without any further information on the impacts, owing to its proximity it is advised that Midlands Meres and Mosses should be scoped into any assessment. It                                                                                                                                                                                                                                                                | See earlier PINS response.<br>As detailed in the site citations <sup>36</sup> , Midlands Meres and Mosses Phase 1 Ramsar Site does not support nationally important                                                                                                                                                                                                                                                                                                                                                     |

<sup>36</sup> JNCC (2008). Information Sheet on Ramsar Wetlands. (online) Available at: Phase 1: <https://jncc.gov.uk/jncc-assets/RIS/UK11043.pdf> and Phase 2: <https://jncc.gov.uk/jncc-assets/RIS/UK11080.pdf> (Accessed August 2022)

| Consultee                                        | Consideration                                                                                                                                                                                                                                                                                                                                                                         | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                       |
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| <b>Borough Council</b>                           | is also noted that cormorant, gadwall, pochard and shoveler occur at levels of national importance at this site. Due to relatively short distance between the development and Ramsar, it is recommended that consideration is given to the effects of the development upon these populations e.g., noise during construction.                                                         | numbers of cormorant, gadwall, pochard and shoveler but Midlands Meres and Mosses Phase 2 Ramsar Site does support nationally important numbers of shoveler, cormorant, bittern and water rail. The Phase 1 and 2 Ramsar Sites are both scoped out of the assessment (see <b>Appendix 5A</b> and NSER <b>Appendix 5B</b> for further reasoning). |
| <b>Cheshire West and Chester Borough Council</b> | Dee Estuary SPA and Ramsar: It is agreed that due to the distance of the works and the lack of hydrological connection, it is not expected that the development will adversely affect habitats or species/populations for which the Dee Estuary Ramsar and SPA is designated. Natural England's Functionally Linked Land map of land supporting the Dee Estuary have been referenced. | See earlier PINS response.                                                                                                                                                                                                                                                                                                                       |
| <b>Cheshire West and Chester Borough Council</b> | Mersey Narrows and North Wirral Foreshore SPA and Ramsar: Whilst these sites fall outside of Cheshire West and Chester, areas of proposed works fall within Functionally Linked Land adjacent to the Mersey Estuary in CWaC. The Mersey Estuary is also directly linked these sites. For these to be scoped out of any assessment further justification would be required.            | See earlier PINS response.                                                                                                                                                                                                                                                                                                                       |
| <b>Cheshire West and Chester Borough Council</b> | Non-schedule 1 nesting birds: Where only vegetation is to be cleared and no structures/buildings are to be demolished, best practice measures are sufficient.                                                                                                                                                                                                                         | Noted; no response required.                                                                                                                                                                                                                                                                                                                     |

| Consultee                                 | Consideration                                                                                                                                                                                                              | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Cheshire West and Chester Borough Council | Dormouse: It is agreed that it is reasonably unlikely that dormouse would be present in the development area.                                                                                                              | Noted, no response required.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Cheshire West and Chester Borough Council | Reptiles: Scoping out of reptiles is accepted provided best practice measures are in place e.g., sensitive clearance of work areas.                                                                                        | Noted, no response required.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Cheshire West and Chester Borough Council | It is advised that the assessment should specifically refer to trees, woodlands, traditional orchards and hedgerows including reference to any Tree Preservation Orders (TPOs), within the baseline, scope and evaluation. | Surveys for woodlands, traditional orchards and hedgerows are underway. An assessment of the potential for significant effects will be included in the ES and appropriate mitigation determined. TPOs are not scoped in as important features for biodiversity in their own right and are assessed in <b>Chapter 8 Landscape and Visual</b> . The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> . |
| Cheshire West and Chester Borough Council | It is noted that the pipeline route falls within the area covered by the Mersey Forest, which should also be taken into account.                                                                                           | Noted. Impacts on Mersey Forest will be assessed within the ES where there is the potential for significant effects to arise on biodiversity features. The baseline environment is described in <b>Section 5.6</b> of                                                                                                                                                                                                                                                                     |

| Consultee                                        | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | this PEIR, with likely significant effects assessed in <b>Section 5.11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Cheshire West and Chester Borough Council</b> | The scoping report should also include reference to the ecological network for Cheshire West and Chester (CWaC), as set out in the Local Plan and referred to in policy DM 44. This identifies core areas, wildlife corridors and stepping stones, restoration areas and buffer zones – all of which are included within the potential pipeline area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | The ES will assess the likely impacts of the development on habitats identified as having biodiversity value including ecological networks. The metric V3.1 will be used to calculate biodiversity losses and gains. Networks such as the ecological network for CWaC would be considered in terms of strategic significance with respect to habitat loss/gain within the metric. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> . |
| <b>Cheshire West and Chester Borough Council</b> | The ecology chapter should specifically refer to trees, woodlands, traditional orchards and hedgerows within the baseline, scope and evaluation. The pipeline route falls within the area covered by the Mersey Forest, which should also be taken into account and policy DM 45 identifies that development affecting woodland should support the aims of the Mersey Forest Plan where relevant. The scope could also refer to trees with Tree Preservation Orders. The scoping report should include reference to the ecological network for Cheshire West and Chester (CWaC), as set out in the Local Plan and referred to in policy DM 44. This identifies core areas, wildlife corridors and stepping stones, restoration areas and buffer zones – all of which are included within the potential pipeline area. The location of the pipeline within these different | See above responses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Consultee                             | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | How addressed in this PEIR                                                                                                                                                                                                                                                                                 |
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|                                       | sections of the ecological network will influence biodiversity net gain calculations using the DEFRA metric.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                            |
| <b>Environment Agency</b>             | We generally concur with the contents of this chapter, however the impacts from construction vibration to migratory fish species during the migratory season should be considered if it cannot be avoided, especially where the pipeline will cross the Mersey. These comments are also applicable to Chapter 10. Noise and Vibration.                                                                                                                                                                                                                                                                                                                                                                       | Noted. The impacts of construction vibration on migratory fish species will be considered within the ES where potential for significant effects is identified. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> . |
| <b>Marine Management Organisation</b> | The MMO notes that the scoping report sufficiently identifies all the potential impacts of the project on ecological receptors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Noted, no further response required.                                                                                                                                                                                                                                                                       |
| <b>Marine Management Organisation</b> | The MMO is satisfied that there is a wide suite of embedded mitigation and management measures outlined which, in combination, will make a notable impact to the potential ecological impacts of the project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Noted, no further response required.                                                                                                                                                                                                                                                                       |
| <b>Marine Management Organisation</b> | It is evident that while the project may interact with a wide range of ecological receptors, these are principally terrestrial and the aquatic receptors that might be affected are generally freshwater. There is unlikely to be a significant effect of the project on marine benthic ecology features. The only pathway for marine ecology impacts is via potential impacts to the Mersey Estuary Special Protection Area (SPA) which lies circa 205m to the west at its closest point to the scoping red line boundary of the project. A Habitats Regulations Assessment (HRA) screening report will be prepared to address whether the project may potentially impact such National Site Network sites. | Noted, no further response required.                                                                                                                                                                                                                                                                       |

| Consultee                             | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | How addressed in this PEIR                                                                                                                                                                                                                                                                                 |
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| <b>Marine Management Organisation</b> | The MMO notes that although the information on fish ecology within the scoping report is somewhat high-level, the ecology assessment will consider potential impacts on freshwater receptors (including fish) and will use available desk-based resources and field survey data to support the assessment. In addition, relevant published evidence and technical engagement with specialist consultees (i.e., Environment Agency, Natural Resources Wales, Natural England) will be undertaken. The Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017) and Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2019) will be considered when determining measures to avoid, minimise or reduce negative impacts on ecological receptors. The MMO anticipate that these will provide a generally comprehensive description of the baseline environment. | Noted, no further response required.                                                                                                                                                                                                                                                                       |
| <b>Marine Management Organisation</b> | The Mersey Estuary is a triple designated area covering a SPA, a Site of Special Scientific Interest (SSSI) and a Ramsar site. The following fish species have been identified as species of conservation importance that occur within a number of watercourses that cross the scoping red line boundary; Atlantic salmon ( <i>Salmo salar</i> ), brown trout ( <i>Salmo trutta morpha fario</i> ), sea trout ( <i>Salmo trutta morpha trutta</i> ), river lamprey ( <i>Lampetra fluviatilis</i> ), brook lamprey ( <i>Lampetra planeri</i> ), bullhead ( <i>Cottus gobio</i> ) and European eel ( <i>Anguilla anguilla</i> ) all of which are Species of Principal Importance (SPI) and most of which have suffered population declines.                                                                                                                                                | An impact assessment on fish species of conservation importance that are likely to occur within the Preliminary Order Limits will be undertaken within the ES. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> . |
| <b>Marine Management Organisation</b> | Impacts which have potential to affect ecological receptors have been identified as follows; habitat loss or degradation, fragmentation of habitats, increase in noise and vibration, increased light levels, changes in ground water levels resulting in habitat change, and introduction of non-native species. Table 5.7 presents a high-level summary of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Noted, no further response required.                                                                                                                                                                                                                                                                       |

| Consultee                             | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                   |
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|                                       | environmental impacts and the resulting potential effects on ecology which recognises that there is potential for aquatic and fish habitats to be affected during the construction and operational phases of the project. Although this section is somewhat brief, the MMO agree that at this stage, given the extent of works within the marine environment is not fully known, the potential impacts on fish receptors identified by the Applicant are appropriate. The MMO recognises that direct effects on fish populations such as disturbance from artificial light and noise or vibration, and habitat removal/ loss/damage during construction will be further assessed in the EIA, which we agree is appropriate.                                                                      |                                                                                                                                                                                                                                                                                                                                              |
| <b>Marine Management Organisation</b> | The MMO advises that migratory fish species should be included in the assessment and the various conservation statuses of these species should also be considered. Potential impacts from construction and operational activities should be adequately assessed in relation to migratory fish transiting the area e.g., to/from the Mersey Estuary.                                                                                                                                                                                                                                                                                                                                                                                                                                              | Likely impacts on migratory fish species will be assessed within the ES. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> .                                                                                                                         |
| <b>Marine Management Organisation</b> | At this stage the information presented on fish receptors is high-level, and although the MMO agree that the data sources and evidence proposed by the Applicant are appropriate, additional relevant research and data sources that could be used to inform the desk-based assessment on fish ecology include:<br>The Environmental Agency Transitional and Coastal Waters (TraC) data base is a recommended source from which data on fish species in the Mersey can be acquired.<br>Cefas spawning maps (Coull <i>et al.</i> , 1998 and Ellis <i>et al.</i> , 2012) present a synthesis of the English Near West Coast Beam trawl surveys (BTS) and English Celtic and Irish Sea groundfish surveys (GFS) that may provide useful information for the EIA, especially as the west coast is an | The additional sources noted by the MMO will be used to identify potential fish species present within the Preliminary Order Limits and will be used to inform the desk study at the PEIR stage. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> . |

| Consultee                             | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | How addressed in this PEIR                                                                                                                                                                       |
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|                                       | <p>important spawning and nursery ground for species such as thornback ray, cod, whiting, sole, plaice, sand eel and herring. According to Coull <i>et al.</i> (1998) and Ellis <i>et al.</i> (2012), nursery and spawning grounds for several marine fish may extend into the Mersey Estuary.</p> <p>The Fish Atlas of the Celtic Sea, North Sea and Baltic Sea (Heessen <i>et al.</i>, 2015) provides an overview of 40 years of information collected from internationally coordinated and national surveys and presents data and information on the recent distribution and biology of demersal and small pelagic fish in these ecoregions. It may provide the Applicant with a useful resource of information on fish receptors in the wider Mersey estuary.</p> |                                                                                                                                                                                                  |
| <b>Marine Management Organisation</b> | Potts and Swaby (1993) contains a summary of fish in the Mersey Estuary from a range of published and unpublished literature. Also, Langston <i>et al.</i> (2006) produced a characterisation of the Mersey Estuary Special Protection Area, which contains information about fish present in the Mersey Estuary.                                                                                                                                                                                                                                                                                                                                                                                                                                                     | The additional sources noted by the MMO will be used to identify potential fish species present within the Preliminary Order Limits and will be used to inform the desk study at the PEIR stage. |
| <b>Marine Management Organisation</b> | The MMO note that a watercourse survey (including fish surveys if deemed necessary), will be undertaken to map/record fish characterisation. It is anticipated that larger waterbodies will be avoided, and surveys of these waterbodies are not currently planned. Given the existing data sources available the MMO agree that site-specific fish surveys might not be necessary. However, if fisheries surveys are not undertaken, the MMO recommend that the limitations of the data sources used (e.g., gear selectivity and the timing of surveys) are acknowledged within the ES.                                                                                                                                                                              | Noted, no further response required.                                                                                                                                                             |

| Consultee                             | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                        |
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| <b>Marine Management Organisation</b> | The MMO are satisfied that a number of embedded/good practice environmental mitigation measures are proposed to reduce the likelihood of potential impacts on ecology receptors. However, no mitigation measures have been proposed in the context of fish. Given that detailed information on the project is not yet available, it is not possible to determine what mitigation measures (if any) would be appropriate or warranted for the project. The MMO would expect appropriate mitigation measures (if required) to be discussed / adopted for the project once a detailed assessment has been undertaken during the EIA. | Following review of the detailed project scope and completion of any necessary fish surveys if potential for significant effects is identified, appropriate mitigation will be determined and detailed within the ES. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> . |
| <b>Natural England</b>                | The potential impact of the proposal upon sites and features of nature conservation interest and opportunities for nature recovery and biodiversity net gain should be included in the assessment.                                                                                                                                                                                                                                                                                                                                                                                                                                | Impacts on designated sites and features of nature conservation interest will be assessed within the ES. Opportunities for nature recovery and BNG (as described above) will also be included within the assessment. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> .  |
| <b>Natural England</b>                | Ecological Impact Assessment (EcIA) is the process of identifying, quantifying, and evaluating the potential impacts of defined actions on ecosystems or their components. EcIA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal. Guidelines have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM).                                                                                                                                                                                                                      | Noted, no response required. We will be undertaking the assessment in line with the CIEEM guidelines.                                                                                                                                                                                                                                                             |
| <b>Natural England</b>                | Designated nature conservation sites - International and European sites<br>The development site may impact on the following European/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Noted. Potential indirect impacts, including pathways for effects on this designated site and its qualifying features will be assessed                                                                                                                                                                                                                            |

| Consultee              | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | How addressed in this PEIR                                                                                                                                                                                                                      |
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|                        | internationally designated nature conservation site(s): Mersey Estuary Special Protection Area (SPA) and Ramsar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | within the ES. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> and the NSER ( <b>Appendix 5B</b> ). We agree on the site cited in respect of impacts. |
| <b>Natural England</b> | The ES should thoroughly assess the potential for the proposal to affect nationally and internationally designated sites of nature conservation importance, including marine sites where relevant. European sites (Special Areas of Conservation (SAC) and Special Protection Areas (SPA) fall within the scope of the Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations'). In addition paragraph 181 of the National Planning Policy Framework (NPPF) requires that potential SPAs, possible SAC, listed or proposed Ramsar sites, and any site identified or required as compensatory measures for adverse effects on habitat (European) sites, potential SPAs, possible SACs and listed or proposed Ramsar sites have the same protection as classified sites (NB. sites falling within the scope of regulation 8 of the Conservation of Habitats and Species Regulations 2017 are defined as 'habitats sites' in the NPPF). Under Regulation 63 of the Habitats Regulations, an appropriate assessment must be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site. The consideration of likely significant effects should include any functionally linked land outside the designated site. These areas may provide important habitat for mobile species populations that are qualifying features of the site, for example birds and bats. This can also include areas which have a critical function to a habitat feature within a | HRA Screening has been undertaken within the NSER ( <b>Appendix 5B</b> ). Potential impacts on designated sites or qualifying features will be assessed within the ES.                                                                          |

| Consultee              | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                        | designated site, for example by being linked hydrologically or geomorphologically.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Natural England</b> | It should be noted that the proposed development may impact habitats functionally linked to the Mersey Estuary SPA/Ramsar. It is advised a comprehensive desk-based study and bird surveys are undertaken to identify and map the locations of functionally linked habitats likely to be affected by the proposed development. It is advised that the direct loss of functionally linked habitats and/or potential offsite impacts are considered in assessing what, if any, potential impacts the proposal may have on European sites. We note paragraph 5.4.6 refers to the information sources included in the desk-based study, we advise local bird clubs are also contacted, for example the Cheshire and Wirral Ornithological Society (CAWOS). | A desk-based study will be undertaken as part of the PEIR and wintering bird surveys focussing on FLL have been undertaken in winter 2021/22. Any potential impacts on designated sites will be assessed within the ES and NSER has also be undertaken, It is proposed that bird data is requested from the BTO, CAWOS and RSG in order to inform the baseline (and desk-based study) and assessment process within the ES. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> . |
| <b>Natural England</b> | This should also take into account any agreed strategic mitigation solution that may be being developed or implemented in the area to address recreational disturbance, nutrients, or other impacts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Noted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Natural England</b> | Designated nature conservation sites – Nationally designated sites<br>The development site may impact on the following Site of Special Scientific Interest: <ul style="list-style-type: none"> <li>• Mersey Estuary;</li> <li>• Woolston Eyes;</li> <li>• Hatton's Hey Wood, Whittle's Corner and Bank Rough;</li> <li>• Brookheys Covert;</li> <li>• Pettypool Brook Valley;</li> </ul>                                                                                                                                                                                                                                                                                                                                                               | Noted, no response required. These sites will be considered where appropriate in the PEIR and ES. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> .                                                                                                                                                                                                                                                                                                                  |

| Consultee              | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|                        | <ul style="list-style-type: none"> <li>• Plumley Lime Beds;</li> <li>• Tabley Mere;</li> <li>• Witton Lime Beds;</li> <li>• Warburton's Wood &amp; Well Wood; and</li> <li>• Beechmill Wood &amp; Pasture.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Natural England</b> | <p>The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSI and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects. The consideration of likely significant effects should include any functionally linked land outside the designated site. These areas may provide important habitat for mobile species populations that are interest features of the SSSI, for example birds and bats. This can also include areas which have a critical function to a habitat feature within a site, for example by being linked hydrologically or geomorphologically.</p> | <p>Both direct and indirect effects of the development on any identified SSSIs will be assessed within the ES. Consideration will also be given to qualifying features that have the potential to use functionally linked land within the Zone of Influence of the designated sites. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b>.</p>                     |
| <b>Natural England</b> | <p><b>Regionally and Locally Important Sites</b></p> <p>The ES should consider any impacts upon local wildlife and geological sites, including local nature reserves. Local Sites are identified by the local wildlife trust, geoconservation group or another local group and protected under the NPPF (paragraph 174 and 175). The ES should set out proposals for mitigation of any impacts and if appropriate, compensation measures and opportunities for enhancement and improving connectivity with wider ecological networks. Contact the relevant local body for further information.</p>                                                                                                                              | <p>Local site information has been obtained from the relevant local record centres/wildlife trust. Where there is potential for significant effects to arise, the impacts of the development will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b>.</p> |

| Consultee       | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| Natural England | The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats). Natural England does not hold comprehensive information regarding the locations of species protected by law. Records of protected species should be obtained from appropriate local biological record centres, nature conservation organisations and local groups. Consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area. | The ES will assess the impact of the development on protected species likely to be present within the Preliminary Order Limits, where significant effects could result. Protected species records have been obtained from the relevant local record centres, wildlife trusts and local groups. Consideration to the wider context of the site i.e., habitat linkages and protected species populations in the wider area will be given. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> . |
| Natural England | The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.                                                                                                                                                                 | Noted, no response required. Surveys would all be conducted in line with best practice guidance by competent ecologists.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Natural England | Natural England has adopted standing advice for protected species, which includes guidance on survey and mitigation measures. A separate protected species licence from Natural England or Defra may also be required.                                                                                                                                                                                                                                                                                                                                                                                             | Noted. The SAN for each relevant species likely affected will be employed as required unless otherwise stated. No response required.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Natural England | District Level Licensing for Great Crested Newts<br>District Level Licensing (DLL) is a type of strategic mitigation licence for                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Noted. Natural England's DLL unit has been consulted and will be employed for                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Consultee       | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                              |
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|                 | great crested newts (GCN) granted in certain areas at a local authority or wider scale. A DLL scheme for GCN may be in place at the location of the development site. If a DLL scheme is in place, developers can make a financial contribution to strategic, off-site habitat compensation instead of applying for a separate licence or carrying out individual detailed surveys. By demonstrating that DLL will be used, impacts on GCN can be scoped out of detailed assessment in the Environmental Statement. | the Project for all areas with the exception of St Helens (currently not taking part in the scheme).                                                                                                                                                                                                                                                                                    |
| Natural England | Consideration should be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land. Sites can be checked against the (draft) national Open Mosaic Habitat (OMH) inventory published by Natural England and freely available to download. Further information is also available here.                                                                                                                                                                     | The OMH inventory will be reviewed at the PEIR stage and will be assessed within the ES. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> .                                                                                                                                           |
| Natural England | An appropriate level habitat survey should be carried out on the site, to identify any important habitats present. In addition, ornithological, botanical, and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present.                                                                                                                                                                                                        | Habitat surveys are currently underway. Protected species surveys will be undertaken if legal or potential significant effects are identified because of the development that could be subject to potentially significant effects. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> . |
| Natural England | The Environmental Statement should include details of: <ul style="list-style-type: none"> <li>Any historical data for the site affected by the proposal (e.g., from previous surveys);</li> <li>Additional surveys carried out as part of this proposal;</li> <li>The habitats and species present;</li> </ul>                                                                                                                                                                                                      | Noted, these will be detailed within the PEIR and/or ES.                                                                                                                                                                                                                                                                                                                                |

| Consultee              | Consideration                                                                                                                                                                                                                                                                                                                                                                                   | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                |
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|                        | <ul style="list-style-type: none"> <li>The status of these habitats and species (e.g., whether priority species or habitat);</li> <li>The direct and indirect effects of the development upon those habitats and species;</li> <li>Full details of any mitigation or compensation measures; and</li> <li>Opportunities for biodiversity net gain or other environmental enhancement.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                           |
| <b>Natural England</b> | Natural England maintains the Ancient Woodland Inventory which can help identify ancient woodland. The wood pasture and parkland inventory sets out information on wood pasture and parkland.                                                                                                                                                                                                   | The Ancient Woodland Inventory and wood pasture and parkland inventory will be reviewed, and any impacts will be assessed within the PEIR and ES. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> .                                                    |
| <b>Natural England</b> | The ES should assess the impacts of the proposal on the ancient woodland and any ancient and veteran trees, and the scope to avoid and mitigate for adverse impacts. It should also consider opportunities for enhancement.                                                                                                                                                                     | The Ancient Woodland Inventory and wood pasture and parkland inventory will be reviewed, and any impacts will be assessed within the PEIR and ES, supported by the Arboricultural Impact Assessment. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> . |
| <b>Natural England</b> | The ES should use an appropriate biodiversity metric such as Biodiversity Metric 3.0 together with ecological advice to calculate the change in biodiversity resulting from proposed development and                                                                                                                                                                                            | Noted. Metric v3.1 will be used to calculate gains/losses and methods used will be summarised within the ES. The                                                                                                                                                                                                                                          |

| Consultee              | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | How addressed in this PEIR                                                                                                                                                                                                  |
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|                        | <p>demonstrate how proposals can achieve a net gain. The metric should be used to:</p> <ul style="list-style-type: none"> <li>• assess or audit the biodiversity unit value of land within the application area.</li> <li>• calculate the losses and gains in biodiversity unit value resulting from proposed development.</li> <li>• demonstrate that the required percentage biodiversity net gain will be achieved.</li> </ul>                                                                         | ES/supporting documentation will clearly set out mitigation measures for significant adverse effects on biodiversity and for wider enhancement as appropriate.                                                              |
| <b>Natural England</b> | Biodiversity Net Gain outcomes can be achieved on site, off-site or through a combination of both. On-site provision should be considered first. Delivery should create or enhance habitats of equal or higher value. When delivering net gain, opportunities should be sought to link delivery to relevant plans or strategies e.g., Green Infrastructure Strategies or Local Nature Recovery Strategies                                                                                                 | Habitat creation and enhancement will be addressed within the ES to achieve BNG in line with the mitigation hierarchy. Opportunities to link delivery to relevant local plans and strategies will be sought where possible. |
| <b>Natural England</b> | Opportunities for wider environmental gains should also be considered.                                                                                                                                                                                                                                                                                                                                                                                                                                    | Opportunities for wider environmental gains will be considered when identifying suitable areas for habitat creation and enhancement.                                                                                        |
| <b>Natural England</b> | The ES should consider the contribution the development could make to relevant local environmental initiatives and priorities to enhance the environmental quality of the development and deliver wider environmental gains. This should include considering proposals set out in relevant local strategies or supplementary planning documents including landscape strategies, green infrastructure strategies, tree and woodland strategies, biodiversity strategies or biodiversity opportunity areas. | The ES will consider the contribution that the development could make to relevant local environmental initiatives to achieve BNG.                                                                                           |

| Consultee                        | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | How addressed in this PEIR   |
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| <b>St Helens Borough Council</b> | The scoping report states that the ecology assessment will consider the potentially significant effects on terrestrial and freshwater ecological receptors, as well as ornithological receptors, that may arise from the construction and operation of the Project. This approach is accepted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Noted, no response required. |
| <b>St Helens Borough Council</b> | MEAS advise that the scope of the desk study undertaken to date is acceptable. The scoping report states that a full desk study will be completed as part of the ES and will detail non-statutory site information (e.g., Local Wildlife Sites) and records of legally protected species requested from record, Greater Manchester Record Centre and Merseyside Biobank. They advise that in addition the respective County Bird Recorders for North Merseyside and Cheshire should be contacted for non-breeding bird records. Non-breeding bird surveys were also undertaken in support of the Halton Local Plan and may be of use for the assessment (these can be found at <a href="https://www3.halton.gov.uk/Pages/planning/policyguidance/eip.aspx">https://www3.halton.gov.uk/Pages/planning/policyguidance/eip.aspx</a> ). | Noted, no response required. |
| <b>St Helens Borough Council</b> | Habitat Regulations Assessment (HRA)<br>The EIA scoping report states that a HRA Screening Report will be prepared to determine whether the Project will have LSEs on any European sites. The HRA will include the Mersey Estuary SPA and Ramsar Site. The report further states that LSEs are expected to be screened out within the HRA Screening Report, however some may remain. In this instance, sufficient information will be provided to allow the relevant competent authority to determine whether there will be a resulting adverse effect on the integrity of European sites. This approach is accepted.                                                                                                                                                                                                               | Noted, no response required. |

| Consultee                        | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | How addressed in this PEIR                                                                                                                                                                                                                                                     |
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| <b>St Helens Borough Council</b> | Ecological Network<br>The EIA scoping report does not reference the Liverpool City Region Ecological Network. The LCR ecological network includes Nature Improvement Areas (NIAs) and Priority Habitats. The ES should address how impacts on the Ecological Network will be avoided or minimised. Further information can be found here - <a href="http://lcreconet.uk/">http://lcreconet.uk/</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Noted. Data in relation to the LCR Ecological Network will be obtained from Merseyside Biobank. Impacts of the development on the ecological network will be assessed within the ES as well as opportunities for environmental gain that such a strategic network may provide. |
| <b>St Helens Borough Council</b> | Assessment Methodology<br>The EIA scoping report states that the ecology assessment methodology will be aligned with the standard industry guidance provided by CIEEM. For each scoped-in ecological feature, effects both during construction and operation will be assessed against the predicted future baseline conditions (equivalent to the current baseline which will be confirmed following completion of extended Phase 1 habitat survey and protected species surveys) for that ecological feature. Throughout the assessment process, findings about potentially significant effects will be used to inform the definition of requirements for additional baseline data collection and the identification of embedded environmental measures to avoid or reduce adverse effects or to deliver enhancements. Measures to comply with relevant policies and legislation will also be included. The results of the assessment will reflect the final Project design (i.e., incorporating the embedded environmental measures). This approach is accepted. | Noted, no response required.                                                                                                                                                                                                                                                   |
| <b>St Helens Borough Council</b> | Significance of effects will be based on the extent, magnitude, duration, frequency, timing, and reversibility. Significance will be assessed from negligible to High. This approach is accepted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Noted, no response required.                                                                                                                                                                                                                                                   |

| Consultee                 | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | How addressed in this PEIR                                                                                                                                                                                                                                                                                                      |
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| St Helens Borough Council | <p>The following ecological features have been scoped out of further assessment:</p> <ul style="list-style-type: none"> <li>Dee Estuary SPA and Ramsar site – this is accepted;</li> <li>Mersey Narrows and North Wirral Foreshore SPA and Ramsar site is -this is accepted; and</li> <li>Ribble and Alt Estuaries SPA and Ramsar site – this accepted.</li> </ul>                                                                                                                                | Noted, no response required.                                                                                                                                                                                                                                                                                                    |
| St Helens Borough Council | Non-Schedule 1 nesting birds – breeding bird surveys targeted at non-Schedule 1 species have been scoped out of the assessment as it is considered that any effects upon active nests of breeding birds can be mitigated by best practice embedded environmental measures – this is accepted                                                                                                                                                                                                      | Noted, no response required.                                                                                                                                                                                                                                                                                                    |
| St Helens Borough Council | Reptiles – the potential for significant effects on reptiles has been scoped out of the assessment in view of the geographical location of the Project, the limited project footprint located within predominantly sub-optimal agricultural landscape and the employment of embedded environmental measures – this is not accepted, until the final route and specific habitats that will be impacted by the proposals are known I do not believe reptiles should be scoped out of the assessment | See above for response.                                                                                                                                                                                                                                                                                                         |
| St Helens Borough Council | <p>Wintering Bird Surveys<br/>Scope of Proposed Ecological Surveys</p> <p>The EIA scoping report states that the following surveys will commence in 2022 to inform the assessment of potentially significant effects on ecological features:</p> <ul style="list-style-type: none"> <li>Extended phase one habitat survey.</li> <li>Badger survey.</li> <li>Great crested newt surveys of ponds with suitability for GCN.</li> </ul>                                                              | <p>Habitat surveys are currently underway. Protected species surveys will be undertaken if potential significant effects are identified as a result of the development. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b>.</p> |

| Consultee                        | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | How addressed in this PEIR                                                                                                                                                                                                                                             |
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|                                  | <ul style="list-style-type: none"> <li>Bat surveys of mature trees that will be impacted by the proposals.</li> <li>Otter and water vole surveys of affected watercourses.</li> <li>Invertebrate surveys, where the extended phase one survey identifies habitats with potential to support important assemblages or species.</li> <li>Schedule 1 breeding bird surveys.</li> <li>Hedgerow Regulation assessment surveys.</li> <li>NVC surveys, where the extended phase one survey identified valuable habitats.</li> <li>Watercourse surveys.</li> </ul> <p>The above survey scope is accepted; however, I would advise that reptile surveys should also be included if high quality habitat for these species is identified during the extended phase one survey.</p> |                                                                                                                                                                                                                                                                        |
| <b>St Helens Borough Council</b> | <p>MEAS advise that the following additional embedded mitigation measures/revisions are required:</p> <ul style="list-style-type: none"> <li>Inclusion of avoidance of disturbance to functionally linked land of qualifying bird species of the Mersey Estuary SPA/Ramsar during the non-breeding bird season (September to March inclusive) as an embedded mitigation measure.</li> <li>The breeding bird season should be defined as March to August (not mid-March to July as stated in the EIA scoping report).</li> <li>Timing restrictions and precautionary measures in respect of breeding birds should also consider the potential for ground nesting farmland bird species such as lapwing (<i>Vanellus vanellus</i>).</li> </ul>                             | <p>Any impacts on qualifying bird species of Mersey Estuary SPA/Ramsar Site are assessed in the NSER, <b>Appendix 5B</b>. The breeding bird season will be amended to March to August. Mitigation in respect of breeding birds will be included where appropriate.</p> |

| Consultee                        | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| <b>St Helens Borough Council</b> | <p>Additional Mitigation</p> <p>The EIA scoping report states that mitigation will be devised to avoid any significant impacts associated with the construction and operation of the proposed development on ecological features. This approach is accepted. I advise that the mitigation hierarchy should be adopted – Avoid, Mitigate, Compensate:</p> <ul style="list-style-type: none"> <li>Avoidance is the key first stage and designs must show that they have avoided important features possible. In this instance higher value habitat features that should where possible be avoided include the woodland areas to the south of the site, the existing hedgerows, and the Bridgwater Canal corridor to the west.</li> <li>Mitigation is measures taken to reduce the duration, intensity and or extent of impacts that cannot be completely avoided, for example through revised site layouts or timing of works.</li> <li>Compensation is measures taken to compensate for any ‘residual impacts’ that cannot be avoided or minimised. This may include enhancing existing ecological features of the site or new habitat creation, Compensation will only be appropriate where there are clearly no alternatives.</li> </ul> | <p>The mitigation hierarchy is being following through the design and assessment process and seeks to avoid all important features. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b>.</p> |
| <b>St Helens Borough Council</b> | <p>Biodiversity Net Gain (BNG)</p> <p>There is reference to further work being carried out but no details within this document. This will be fundamentally important with any applications submitted. If before November 2023, when the Environment Bill comes into force applicants will still need to provide completed DEFRA Biodiversity Net Gain metrics (Version 3) and show how there will be no Net loss of biodiversity because of this development proposal. Thus, should include amendment of proposals to reduce net losses. After November 2022 then applicants will need to fully comply with the Environment Bill legislation (including demonstrating 10% Biodiversity</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>The latest metric (V3.1) will be used to calculate gains and losses and methods used will be summarised within the ES. The ES/supporting BNG documentation will clearly set out mitigation measures for significant adverse effects on biodiversity and for wider enhancement as appropriate. BNG is set to become a requirement for TCPA planning applications from November 2023 and for DCOs from</p>                                                                                   |

| Consultee               | Consideration                                                                                                                                                                                                                                                                                                                                      | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                               |
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|                         | Net gain). In both cases schemes must be demonstrate how the design is minimising losses. Off-site mitigation can be considered but only as a matter of last resort and evidence is provided that there are no other options for onsite mitigation. Off-site mitigation details would also be required as part of any mitigation/compensation.     | November 2025, however, the Applicant is committed to including BNG on this project prior to the mandatory condition being in place.                                                                                                                                                                                                                                                     |
| <b>Trafford Council</b> | The nearest sensitive area is Brookheys Covert Site of Special Scientific Interest (SSSI) approximately 250m east of the scoping boundary. Dunham Park SSSI is approximately 1 km southeast of the scoping boundary.                                                                                                                               | Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> .                                   |
| <b>Trafford Council</b> | There are two Special Areas of Conservation (SAC) (Rixton Clay Pits and Manchester Mosses) to the west of the site, both outside the Trafford boundary and approximately 2.8 km and 3.1 km from the scoping boundary respectively. Rixton Clay Pits is also a SSSI and Holcroft Moss and Risley Moss SSSI's are part of the Manchester Mosses SAC. | Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> and the <b>NSER (Appendix 5B)</b> . |
| <b>Trafford Council</b> | Sites of Biological Importance (SBI's) are not individually identified in the Scoping Report. The following SBI's within Trafford are within the scoping boundary:                                                                                                                                                                                 | Where there is potential for significant effects to arise, the impacts of the development will be assessed within the                                                                                                                                                                                                                                                                    |

| Consultee               | Consideration                                                                                                                                                                                              | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|                         | <ul style="list-style-type: none"> <li>• Moss Wood SBI.</li> <li>• Sinderland Green Wood SBI.</li> <li>• Broadoak Wood SBI.</li> <li>• Partington Nature Reserve SBI.</li> </ul>                           | ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> . Based on the current Preliminary Order Limits, Moss Wood SBI, Broadoak Wood SBI and Partington Nature Reserve SBI are now situated outside the Preliminary Order Limits.                                                                     |
| <b>Trafford Council</b> | <p>The following SBI's are adjacent to or in close proximity to the scoping boundary:</p> <ul style="list-style-type: none"> <li>• Brookheys Covert SBI.</li> <li>• Fox Covert and Meadows SBI.</li> </ul> | Where there is potential for significant effects to arise on SBIs, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> . Brookheys Covert SBI is 0.78km and Fox Covert and Meadows SBI is 0.80km from the current Preliminary Order Limits. |
| <b>Trafford Council</b> | The scoping boundary extends through three Wildlife Corridors and at least seven Sites of Importance for Nature Conservation designated on the Local Plan Policies Map.                                    | Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in                                                                                                                                                                                                                                        |

| Consultee               | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> .                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Trafford Council</b> | I note that an extended Phase 1 habitat survey and protected species surveys will be undertaken, including surveys for great crested newt, bats, otter and water vole, badger, invertebrate, Schedule 1 breeding birds and winter birds.                                                                                                                                                                                                                                                                                                                                                                                                                                               | Noted, no further action required.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Trafford Council</b> | Construction of the pipeline is likely to result in the loss of trees, hedgerows, vegetation and other habitats, which may include statutory and non-statutory nature conservation sites or priority habitats. The route should seek to avoid such features and habitats wherever possible and where this is unavoidable, the ES and DCO will need to set out proposed mitigation to replace or compensate for the loss of these features. In line with the NPPF the expectation would be to avoid significant harm to biodiversity resulting from the development and if significant harm cannot be avoided it should be adequately mitigated, or, as a last resort, compensated for. | The mitigation hierarchy is being followed through the design and assessment process, and seeks to avoid all important features. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on features assessed in <b>Section 5.11</b> . |
| <b>Trafford Council</b> | The proposed development would be expected to deliver biodiversity net gain (BNG), as sought by the NPPF and as a requirement of the Environment Act 2021 (with the statutory requirement for 10% BNG anticipated to be in place by the time the DCO is submitted).                                                                                                                                                                                                                                                                                                                                                                                                                    | The latest biodiversity metric (V3.1) will be used to calculate gains and losses and methods used will be summarised within the ES. The ES/supporting BNG documentation will clearly set out mitigation measures for significant adverse effects on biodiversity and for wider enhancement as appropriate. BNG for                                                                                                                                                                         |

| Consultee                         | Consideration                                                                                                                                                                                                                                                                                                                                                                                                           | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                        |
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|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         | NSIP projects is not yet statutory. It is set to become a requirement for DCOs from November 2025, however, the Applicant is committed to including BNG on the Project prior to the mandatory condition being in place. As for comparable schemes of this scale, at submission of the DCO, that would be a confirmation of what BNG was already secured and how the remainder would be fulfilled. |
| <b>Trafford Council</b>           | No comments have been received from the Greater Manchester Ecology Unit at the time of preparing this response. In the event a response is subsequently received which raises any issues relevant to the scope and level of detail of the information to be provided in the ES we will forward these comments.                                                                                                          | Noted, no further action required.                                                                                                                                                                                                                                                                                                                                                                |
| <b>Trafford Council</b>           | Natural England will need to be consulted on the Scoping Opinion and on the application for a DCO.                                                                                                                                                                                                                                                                                                                      | Natural England is a prescribed consultee.                                                                                                                                                                                                                                                                                                                                                        |
| <b>Warrington Borough Council</b> | The Scoping Report confirms that comprehensive surveys and assessments of the effects of the proposed development on the natural environment will be undertaken. It is confirmed that these surveys and assessments will be undertaken in accordance with established professional practice and will involve the consultation of appropriate sources of information (including the Cheshire biological records centre). | Noted, no response required.                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Warrington Borough Council</b> | In broad agreement with the Scope of ecological surveys and assessments described in the report, and would not consider that any of the surveys and assessments described are unnecessary, but it is                                                                                                                                                                                                                    | Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and                                                                                                                                                                                                                                                                          |

| Consultee                         | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                                   | <p>recommended that the following additional issues need to be considered further in any resulting Environmental Statement:</p> <ul style="list-style-type: none"> <li>If new traffic routes need to be created to facilitate access to the pipeline route and works compounds, or if existing roads need to be widened or otherwise improved to accommodate large-scale traffic movements, the ecological impacts of these measures will need to be fully assessed in the ES.</li> <li>the applicant has correctly identified the need for a Habitats Regulations Assessment of the project to be carried out. It is agreed that the Mersey Estuary SPA should be in the proposed HRA, and would also agree that there will be a need to assess parts of the route for their potential to act as functionally linked to the SPA. It is also recommended that air pollution effects arising from the operation of construction traffic and of large-scale generators on construction sites should also be Screened in to the HRA as a potential impact of the scheme on designated sites.</li> </ul> | <p>appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on features assessed in <b>Section 5.11</b>. Potential indirect impacts, including pathways for effects on this designated site and its qualifying features are assessed within this PEIR (<b>Section 5.8</b>) and NSER (<b>Appendix 5B</b>).</p> |
| <b>Warrington Borough Council</b> | <p>Great Crested Newts - the District Level Licensing Scheme for great crested newts is now in operation in Warrington. Entering into this Scheme would potentially remove the need for surveying for great crested newts along the length of the pipeline routes, and for providing mitigation for great crested newts along the route. Early engagement with Natural England, who administer the DLL Scheme nationally, is encouraged in this matter.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>Natural England's DLL unit has been consulted and will be employed for the Project for all areas except for St Helens (currently not taking part in the scheme).</p>                                                                                                                                                                                                                                                                 |
| <b>Warrington Borough Council</b> | <p>Biodiversity Net Gain - There is little discussion in the Scoping report of the need for the project to provide a Net Gain in biodiversity, in accord with the provisions of the NPPF and of the new Environment Act. The applicant is encouraged to engage with the biodiversity net gain agenda at an early stage of project development, so that provision for habitat</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>The latest metric (V3.1) will be used to calculate gains and losses and methods used will be summarised within the ES. The ES/supporting BNG documentation will clearly set out mitigation measures for</p>                                                                                                                                                                                                                          |

| Consultee                         | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                                   | creation, repair and enhancement can be built into project development from the start of the design process. Any gains must be meaningful and should contribute to the creation of a Local Nature Recovery Strategy wherever possible.                                                                                                                                                                                                                                                              | significant adverse effects on biodiversity and for wider enhancement as appropriate, taking into account strategic opportunities (such as the LNR Strategy).                                                                                                                                                                                                                                                                                                                           |
| <b>Warrington Borough Council</b> | The Scoping report states that “Where practical, sensitive sites will be avoided by the temporary construction compounds and permanent Project elements” [GMEU’s italics]. Harmful impacts on sensitive and designated sites should be avoided as a matter of course, and if impacts are considered to be absolutely unavoidable, comprehensive justification for these decisions will need to be provided, together with full details of mitigation and compensation for any harm which is caused. | The mitigation hierarchy is being followed through the design and assessment process, and seeks to avoid all important features. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> . |
| <b>Warrington Borough Council</b> | Before a comprehensive Environmental Statement is submitted for appraisal, as much certainly as possible needs to be provided concerning the ecological impacts of the scheme, so that compensation, mitigation and net gain measures can be fully and properly assessed.                                                                                                                                                                                                                           | Habitat and protected species surveys are being undertaken. The mitigation hierarchy is being followed through the design and assessment process and seeks to avoid all important features. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with            |

| Consultee                         | Consideration                                                                                                                                                                                | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|                                   |                                                                                                                                                                                              | likely significant effects on sites assessed in <b>Section 5.11</b> .                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Warrington Borough Council</b> | Warrington Borough Council also holds records of all of the Local Wildlife Sites within the Warrington area, and these should be included within the maps as constraints.                    | Local site information has been obtained from the relevant local record centres/wildlife trust. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> . |
| <b>Warrington Borough Council</b> | A number of the Local Wildlife Sites within the Warrington area are considered to have a greater than local value and the value placed on them within the assessments needs to be increased. | Local site information has been obtained from the relevant local record centres/wildlife trust. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> . |
| <b>Warrington Borough Council</b> | It is requested that adequate mitigation is provided for any trees or hedgerows proposed to be removed and ratio for replacement should be included within the Environmental Statement.      | Surveys for woodlands, traditional orchards and hedgerows are underway. An assessment of the potential for significant                                                                                                                                                                                                                                                                                                                                 |

| Consultee                         | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                |
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|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | effects will be included in the ES and appropriate mitigation determined. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects assessed in <b>Section 5.11</b> . Further assessment of trees is found in <b>Chapter 8 Landscape and Visual-</b>                                                      |
| <b>Warrington Borough Council</b> | If new traffic routes need to be created to facilitate access to the pipeline route and works compounds, or if existing roads need to be widened or otherwise improved to accommodate large-scale traffic movements, the ecological impacts of these measures will need to be fully Assessed in the ES.                                                                                                                                                                                                                                                                                                 | Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on features assessed in <b>Section 5.11</b> . |
| <b>Warrington Borough Council</b> | The applicant has correctly identified the need for a Habitats Regulations Assessment of the project to be carried out. I would agree with the inclusion of the Mersey Estuary SPA in the proposed HRA and would also agree that there will be a need to assess parts of the route for their potential to act as functionally linked to the SPA. I would also recommend that air pollution effects arising from the operation of construction traffic and of largescale generators on construction sites should also be Screened in to the HRA as a potential impact of the scheme on designated sites. | Noted. The HRA screening has been undertaken in the NSER (see <b>Appendix 5B</b> ) and within <b>Appendix 5A</b> .                                                                                                                                                                                                                                        |

| Consultee                         | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <b>Warrington Borough Council</b> | I would point out to the applicants that the District Level Licensing Scheme for great crested newts is now in operation in Warrington. Entering into this Scheme would potentially remove the need for surveying for great crested newts along the length of the pipeline routes, and for providing mitigation for great crested newts along the route. Early engagement with Natural England, who administer the DLL Scheme nationally, is encouraged in this matter.                                                                                                                       | Natural England's DLL unit has been consulted and will be employed for the Project for all areas except for St Helens (currently not taking part in the scheme).                                                                                                                                                                                                                                                                                                                    |
| <b>Warrington Borough Council</b> | There is little discussion in the Scoping report of the need for the project to provide a Net Gain in biodiversity, in accord with the provisions of the NPPF and of the new Environment Act. I would encourage the applicants to engage with the biodiversity net gain agenda at an early stage of project development, so that provision for habitat creation, repair and enhancement can be built into project development from the start of the design process. Any gains must be meaningful and should contribute to the creation of a Local Nature Recovery Strategy wherever possible. | The latest metric (V3.1) will be used to calculate gains and losses and methods used will be summarised within the ES. The ES/supporting BNG documentation will clearly set out mitigation measures for significant adverse effects on biodiversity and for wider enhancement as appropriate. BNG is set to become a requirement for NSIPs from November 2025. However, the Applicant is committed to including BNG on the Project prior to that mandatory position being in place. |
| <b>Warrington Borough Council</b> | The Scoping report states that "Where practical, sensitive sites will be avoided by the temporary construction compounds and permanent Project elements" [my italics]. Harmful impacts on sensitive and designated sites should be avoided as a matter of course, and if impacts are considered to be absolutely unavoidable, comprehensive justification for these decisions will need to be provided, together with full details of mitigation and compensation for any harm which is caused.                                                                                               | The mitigation hierarchy is being followed through the design and assessment process, and seeks to avoid all important features. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in                                                                                                         |

| Consultee                         | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Section 5.6</b> of this PEIR, with likely significant effects on sites assessed in <b>Section 5.11</b> .                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Warrington Borough Council</b> | It is noted that the project is at an early design stage, that final routes have not yet been decided, and that main contractors for the scheme may not yet have been appointed. This means that there is considerable uncertainty at this stage as to the final impacts of the scheme. I would remind the applicants that before a comprehensive Environmental Statement is submitted for appraisal, as much certainty as possible needs to be provided concerning the ecological impacts of the scheme, so that compensation, mitigation and net gain measures can be fully and properly assessed. | The mitigation hierarchy is being followed through the design and assessment process, and seeks to avoid all important features. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. The baseline environment is described in <b>Section 5.6</b> of this PEIR, with likely significant effects on features assessed in <b>Section 5.11</b> . |
| 5.3.4                             | In September 2021, the Department of Business, Energy and Industrial Strategy (BEIS) consulted upon a review of energy National Policy Statements (NPS) with consultation closing on 29 November 2021. The energy NPS were reviewed to reflect the policies and broader strategic approach set out in the Energy white paper and ensure a planning framework was in place to support the infrastructure requirement for the transition to net zero.                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5.3.5                             | <b>Table 5.5</b> summarises those Draft NPSs which are considered relevant to the Project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

Table 5.5 Planning policy context for biodiversity: Draft National Policy Statements

| Policy                                                                            | Policy context                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>National planning policy</b>                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Draft Overarching National Policy Statement for Energy (EN-1)<sup>37</sup></b> | <p>Paragraph 4.5.2 of Draft EN-1 states: <i>“Although achieving biodiversity net gain is not an obligation for projects under the Planning Act 2008, energy NSIP proposals should seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity where possible. ....Biodiversity net gain should be applied in conjunction with the mitigation hierarchy and does not change or replace existing environmental obligations”.</i></p> <p>Paragraph 5.4.3 of Draft EN-1 states: <i>“Where the development is subject to EIA the applicant should ensure that the ES clearly sets out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity.”</i></p> <p>Paragraph 5.4.4 of Draft EN-1 states: <i>“The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests” and “The applicant is encouraged to consider how their proposal can contribute towards Biodiversity Net Gain in line with the ambition set out in the 25 Year Environment Plan”.</i></p> <p>Paragraph 5.4.8 of Draft EN-1 states: <i>“The Habitats Regulations set out sites for which an HRA will assess the implications of a plan or project, including Special Areas of Conservation and Special Protection Areas. As a matter of policy, the following should be given the same protection as sites covered by the Habitat’s Regulations: (a) potential Special Protection Areas</i></p> |

<sup>37</sup> Department for Business, Energy & Industrial Strategy (2021). Draft Overarching National Policy Statement for Energy (EN-1) (online). Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1015233/en-1-draft-for-consultation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf) (Accessed August 2022).

**Policy****Policy context**

*and possible Special Areas of Conservation; (b) listed or proposed Ramsar sites; and (c) sites identified, or required, as compensatory measures for adverse effects on other HRA sites”.*

Paragraph 5.4.10 of Draft EN1 states: *“Development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits (including need) of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSIs. The Secretary of State should use requirements and/or planning obligations to mitigate the harmful aspects of the development and, where possible, to ensure the conservation and enhancement of the site’s biodiversity or geological interest.”*

Paragraph 5.4.12 of Draft EN-1 states: *“National planning policy expects plans to identify and map Local Wildlife sites, and to include policies that not only secure their protection from harm or loss but also help to enhance them and their connection to wider ecological networks. The Secretary of State should give due consideration to such regional or local designations. However, given the need for new nationally significant infrastructure, these designations should not be used in themselves to refuse development consent.”*

Paragraph 5.4.13 of Draft EN-1 relates to ancient woodland which is an irreplaceable valued biodiversity resource and it states: *“The Secretary of State should not grant development consent for any development that would result in its loss or deterioration unless the benefits (including need) of the development, in that location clearly outweigh the loss of the woodland habitat. Aged or ‘veteran’ trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided. Where such trees would be affected by development proposals the applicant should set out proposals for their conservation or, where their loss is unavoidable, the reasons why. Applicants should provide a suitable compensation strategy in instances where proposals would result in the loss or deterioration of ancient woodland and ancient or veteran trees.”*

**Policy****Policy context**

Paragraph 5.4.16 of Draft EN-1 treated to other species and habitats have been identified as being of principal importance for conservation and it states: “The Secretary of State should ensure that these species and habitats are protected from the adverse effects of development by using requirements, planning obligations, or licence conditions. The Secretary of State should refuse consent where harm to the habitats or species and their habitats would result, unless the benefits (including need) of the development outweigh that harm. .... Consideration should be given to improvements to, and impacts on, habitats and species in, around and beyond developments, for wider ecosystem services and natural capital benefits, beyond those under protection and identified as being of principal importance. This may include considerations and opportunities identified through Local Nature Recovery Strategies, and national goals and targets set through the government’s strategy for nature for example.”

Paragraph 5.4.18 of Draft EN-1 states: “The applicant should include appropriate mitigation measures as an integral part of the proposed development.” Mitigation measures can include reducing work footprint to minimum, timing of works to limit disturbance to birds during breeding season, follow best practice guidance to minimise risk of disturbance or damage to species or habitats, restoration of habitats after works are complete, seek opportunities to enhance existing habitats rather than replace them and create new habitats of value within the site landscaping proposals.

Paragraph 5.4.19 of Draft EN-1 states “Applicants should consider producing and implementing a Biodiversity Management Strategy as part of their development proposals. This could include provision for biodiversity awareness training to employees and contractors so as to avoid unnecessary adverse impacts on biodiversity during the construction and operation stage.”

Paragraph 5.4.22 of Draft EN-1 states: “Any habitat creation or enhancement delivered for biodiversity net gain should generally be maintained for a minimum period of 30 years.”

## Technical engagement

- 5.3.6 Technical engagement with consultees in relation to biodiversity is ongoing. A summary of the technical engagement undertaken to date is outlined in **Table 5.6**.

**Table 5.6 Technical engagement on the environmental aspect assessment**

| Consultee                      | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <b>Cheshire Wildlife Trust</b> | <p>Initial discussion held 16 March 2022 following a non-statutory event (23 February 2022) which the Trust attended. They issued their response to the Scoping Report on 11 March 2022. The key points of this are as below:</p> <ul style="list-style-type: none"> <li>• The Project should result in a measurable net gain for biodiversity.</li> <li>• The HRA must give consideration to effects of all stages, including future stages of the wider scheme, alongside other large infrastructure projects and local plan allocations in the vicinity of the internationally designated Mersey Estuary. The HRA should also include an assessment of whether any land within the Preliminary Order Limits is deemed to be 'functionally linked' to any internationally designated sites.</li> <li>• Non-Schedule 1 breeding birds and reptiles should not be scoped out from the EIA assessment; and</li> <li>• Known important ecological features should be avoided including statutory designated sites; non-statutory designated sites; Cheshire Wildlife Trust Reserves; irreplaceable habitats and peatlands; priority and notable habitats; and ecological networks and wildlife corridors.</li> </ul> | <p>Surveys are currently being undertaken using the UK Habitat classification system. All habitats within the survey area will be subject to a conditions assessment and this information will be used to inform BNG calculations (using the latest metric v3.1).</p> <p>HRA Screening has been undertaken within the NSER (<b>Appendix 5B</b>). Any potential impacts on designated sites or qualifying features will be assessed within the ES.</p> <p>If there is insufficient evidence to conclude that there will be no likely significant effects on reptiles and non-Schedule 1 breeding birds, an assessment of the potential for significant effects will be included in the ES.</p> <p>The mitigation hierarchy is being following through the design and assessment process and seeks to avoid all important biodiversity features. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. Further assessment of peatland habitats is found in <b>Chapter 12 Ground Conditions</b>. A separate peat assessment, and Peat Management Plan will be prepared and included in the Desk Study to accompany the ES, and impacts on peat are addressed in <b>Chapter 13: Agriculture and Soil Resources</b>.</p> |

| Consultee              | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Data on the baseline environment is being gathered as per the scope defined and the methods outlined in <b>Section 5.5-5.9</b> of this PEIR, with likely significant effects on features assessed in <b>Section 5.11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Natural England</b> | <p>Natural England was contacted (7 March 2022) to engage in a DAS agreement to support technical engagement for the Project up to the point of DCO submission. At this stage, Natural England's local team has not been available for a technical meeting to discuss approach, scope, or assessment methodology, however we requested (10 March 2022) and obtained some peat data for assessment work (31 March 2022).</p> <p>The DLL team has engaged (26 May 2022) and been provided with data so that an initial estimate could be provided and calculated that costing; the Project will be pursuant of the DLL approach and will be in touch with the DLL team later in 2022 with a final design.</p> <p>We will continue to inform Natural England of our approach and any variations to standard guidance should that be required and hope to hold discussions as soon as they are able.</p> | <p>The mitigation hierarchy is being following through the design and assessment process and seeks to avoid all important biodiversity features. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. Data on the baseline environment is being gathered as per the scope defined and the methods outlined in <b>Section 5.5-5.9</b> of this PEIR, with likely significant effects on features assessed in <b>Section 5.11</b>. The NSER is in <b>Appendix 5B</b>. We trust that Natural England will thus be informed of our approach and will engage should they identify any material matters of concern.</p> |
| <b>RSPB</b>            | The RSPB were contacted on 12 April 2022 and have yet to provide comment on the Scoping Report (as of 25 July 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | N/A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Consultee                         | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | How addressed in this PEIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Friends of Carrington Moss</b> | The Friend of Carrington Moss were contacted (06 April 2022) to discuss the Project. Ross Harding of the Cheshire Wildlife Trust was also present. The Friends following up with a consultation response to the proposals. They outlined the key interests in the site and their concerns where they relate to biodiversity: to “ <i>disturbance of peat</i> ” and on “ <i>endangered wildlife and birds and reserves on Carrington and Warburton Moss</i> ”. They were keen to hold future discussions where they affected their interests. | The mitigation hierarchy is being following through the design and assessment process and seeks to avoid all important biodiversity features. Where there is potential for significant effects to arise, the impacts of the Project will be assessed within the ES and appropriate mitigation, compensation and enhancement measures presented. Further assessment of peatland habitats is found in <b>Chapter 12: Ground Conditions</b> . A separate peat assessment, and Peat Management Plan will be prepared to accompany the ES, and impacts on peat are addressed in <b>Chapter 13: Agriculture and Soil Resources</b> . |

## Planned future engagement

- 5.3.7 In respect of biodiversity specific engagement, as per **Table 5.5** above, we hope to meet with Natural England shortly. Meetings with Cheshire Wildlife Trust, Environment Agency, and potentially a further meeting with the MMO will be proposed.

## 5.4 Study Area

### Data gathering

- 5.4.1 The Study Area encompasses the area over which all desk-based and field data was gathered to inform the terrestrial and aquatic ecology, and ornithological assessments presented in this chapter. The Study Area, component search areas and field survey definitions described below are used throughout this chapter. Due to the presence of multiple ecological features and various potential effects, the level and type of data collection varies across the Study Area. The Study Area comprises:
- Land within the Preliminary Order Limits (as shown on **Figure 5.1**);
  - Land within the Preliminary Order Limits and surrounding buffer (known as “area of search”, see **Section 5.5**) for sites designated for their nature conservation interest at the international, European, national and local levels (as described in **Table 5.15**) dependent on the ecological feature for which the sites are designated;
  - The area of search for legally protected and notable biodiversity features;
  - The area of search for any legally controlled species; and
  - The Survey Area for field surveys.
- 5.4.2 The areas of search for the desk study used in this chapter (see **Section 5.5**) were determined based on best practice guidance (see **Table 5.9**) and a high-level overview of the types of features potentially present (see **Figure 5.1**), as well as the type and nature of likely works and the potential effects that could occur. The Study Area was defined on a precautionary basis to ensure that the ZOI relevant to all features were covered during baseline data collection activities. ZOIs are the areas within which a potentially significant effect associated with the Project may be identified for a particular ecological feature and vary from feature to feature.
- 5.4.3 The Study Area should be regarded as preliminary at this stage and will be reviewed and amended in response to the refinement of the project design, the identification of additional impact pathways and, where appropriate, in response to feedback from consultation. This will ensure that there is sufficient data on which to conduct the assessment. These refinements are expected to reduce the extent of the Study Area as the Project progresses, whilst still reflecting recognised good practice.

## Assessment

- 5.4.4 The spatial and temporal scope of the assessment, and the rationale behind each and the methodology employed are defined in **Section 5.8: Scope of the assessment**.

## 5.5 Data gathering methodology

### Desk study

- 5.5.1 An initial desk study was carried out in December 2021/January 2022 to inform the scoping process, when the Study Area was based on the Scoping Preliminary Order Limits. The Project design has been developed and refined since Scoping with the Scoping red line boundary replaced by the Preliminary Order Limits (see **Chapter 2: The Project**). A data-gathering exercise was undertaken to obtain existing information relating to relevant statutory and non-statutory biodiversity sites, habitats and species of principal importance (HPI and SPI)<sup>38</sup>, legally protected and controlled species and other conservation notable species and habitats<sup>39, 40</sup> that have been recorded over the previous ten years (2012 to 2022).
- 5.5.2 **Table 5.7** lists the data compiled within each area of search within the overall Study Area.
- 5.5.3 A summary of the organisations that have supplied data, together with the nature of that data is outlined in **Table 5.8**.

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<sup>38</sup> Habitats of Principal Importance and Species of Principal Importance (listed pursuant to the requirements of Section 41 of the Natural Environment and Rural Communities Act 2006) are referred to in this chapter as HPI and SPI respectively.

<sup>39</sup> A conservation notable species is one that has some form of conservation designation (for example it is present on a red list) but has no specific legal protection.

<sup>40</sup> A conservation notable habitat is one that is not listed as a Habitat of Principal Importance but is still a value to wildlife such as ancient woodland or those listed by the relevant LBAP.

**Table 5.7 Data gathered during the desk study to inform the biodiversity assessment**

| Biodiversity feature                                                                                                    | Example/definition                                                                                                                                                                                                                                                                  | Area of search                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Statutory biodiversity sites designated under international conventions or the Habitats Regulations<sup>41</sup></b> | Special Areas of Conservation (SAC), candidate SAC (cSAC), Special Protection Areas (SPA), Sites of Community Importance (SCI) and (in accordance with UK Government policy <sup>42</sup> ) potential SPAs (pSPA), possible SACs (pSAC) and Ramsar Sites and proposed Ramsar Sites. | Inside and within an area of search of 2km of the Preliminary Order Limits, extended to 10km for sites of bat interest, and 20km for sites of ornithological interest <sup>43</sup> . |
| <b>Statutory biodiversity sites designated under national legislation</b>                                               | SSSIs, National Nature Reserves (NNRs) and Local Nature Reserves (LNRs).                                                                                                                                                                                                            | Inside and within an area of search of 2km of the Preliminary Order Limits, extended to 10km for nationally important sites with bat <sup>44</sup> and ornithological interest.       |
| <b>Non-statutory locally designated sites</b>                                                                           | Local non-statutory designated biodiversity sites known as Local Wildlife Sites (LWSSs) in Cheshire and Merseyside and Sites of Biological Importance (SBIs) in Greater Manchester.                                                                                                 | Inside and within an area of search of 2km of the Preliminary Order Limits <sup>45</sup> .                                                                                            |
| <b>Legally protected species, SPIs and other</b>                                                                        | SPIs, species recorded on The IUCN Red List of Threatened Species and/or local Red Lists for the UK or relevant sub-units (e.g. regions or                                                                                                                                          | Inside and within an area of search of 2km of the Preliminary Order Limits <sup>45</sup> .                                                                                            |

<sup>41</sup> Sites (e.g., SPAs and SACs) that were formerly part of the Natura 2000 network and now form constituents of the national site network although they are still termed European sites within this chapter reflecting the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

<sup>42</sup> Paragraph 181 of the National Planning Policy Framework, MHCLG, 2021.

<sup>43</sup> The area of search reflects the potential for bird species which are qualifying features of a designated site to depend functionally linked land located a distance beyond the designated site boundary.

<sup>44</sup> The area of search reflects the potential for effects on mobile species which a site is designated for, for example reflecting the Core Sustainance Zones of bat species in line with guidance from the Bat Conservation Trust (Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidance (3rd edn)).

<sup>45</sup> A 2km area of search is in line with guidance from the Institute of Environmental Assessment (1995): Guidelines for Baseline Ecological Assessment.

| Biodiversity feature                            | Example/definition                                                                                                                                                                                                                                                                                                                                               | Area of search                                                                              |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <b>conservation-notable species</b>             | counties), other conservation-notable species <sup>46</sup> , and legally protected species include those listed on Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended), those included on Schedules 2 and 5 of the Habitats Regulations, and badger which is provided protection under the Protection of Badgers Act 1992. <sup>12</sup> |                                                                                             |
|                                                 | Existing granted European Protected Species Licence (EPSL) applications (excluding roosting bats – see below).                                                                                                                                                                                                                                                   | Inside and within an area of search of 2km of the Preliminary Order Limits <sup>45</sup> .  |
|                                                 | Great crested newt class licence returns (locations of great crested newt presence recorded during surveys by Natural England class licence holders).                                                                                                                                                                                                            | Inside and within an area of search of 500m of the Preliminary Order Limits <sup>47</sup> . |
| <b>Bat roosting locations</b>                   | Existing granted EPSL applications for bat roosts, in accordance with guidance, reflecting the distances that these mobile species can occur from their roost locations.                                                                                                                                                                                         | Inside and within an area of search of 5km of the Preliminary Order Limits <sup>48</sup> .  |
| <b>HPI, other conservation-notable habitats</b> | HPIs, ancient woodland, veteran trees, and hedgerows which are provided protection under the Hedgerows Regulations 1997.                                                                                                                                                                                                                                         | Inside and within an area of search of 2km of the Preliminary Order Limits <sup>49</sup> .  |

<sup>46</sup> Such as those listed by the relevant Local BAP; populations of birds comprising at least 1% of the relevant British breeding/wintering population (where data are available); and other species or assemblages such as large populations of animals considered uncommon or threatened in a wider context.

<sup>47</sup> The 500m area of search reflects the distance that great crested newts usually occur within surrounding a breeding pond, in line with English Nature (2001): Great Crested Newt Mitigation Guidelines.

<sup>48</sup> The area of search reflects the Core Sustenance Zones of bat species which could potentially occur in the area, in line with guidance from the Bat Conservation Trust (Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidance (3rd edn)).

<sup>49</sup> The area of search reflects the potential mechanisms for effects on habitats distant from the Project, such as fragmentation of habitat, pollution incidents and changes in air quality.

| Biodiversity feature              | Example/definition                                                                                                     | Area of search                                                                                                                                                                                                                                                                                   |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ornithological species</b>     | Records of SPA-listed, NERC S41 and BoCC5 <sup>50</sup> red/amber list species, and Schedule 1 species and nest sites. | Records of all SPA-listed, NERC S41 and BoCC5 red/amber list species: inside and within 500 m of the Preliminary Order Limits<br>Schedule 1 species nest sites: inside and within 2 km of the Preliminary Order Limits                                                                           |
|                                   | Wetland Bird Survey data for a range of potentially functionally linked sites with Mersey Estuary SPA.                 | Selected potentially functionally linked core count sites with the Mersey Estuary (Lordship Lane Fields, Frodsham Sludge Lagoons, Ince Marshes Fields, Weston Marshes, Weaver Estuary, and Weaver Estuary to Catton Hall). inside and within approximately 500m of the Preliminary Order Limits. |
| <b>Legally controlled species</b> | Legally controlled species include those listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).   | Inside and within an area of search of 2km of the Preliminary Order Limits <sup>45</sup> .                                                                                                                                                                                                       |
| <b>Water body locations</b>       | Water bodies may support species within the groups listed above (for example legally protected great crested newt).    | Inside and within an area of search of 250m of the Preliminary Order Limits <sup>51</sup>                                                                                                                                                                                                        |

<sup>50</sup> Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D. & Win, I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. In: *British Birds*, 114, p723–747.

<sup>51</sup> 250m is recognised as being towards the upper limit of the distance that most adult great crested newts typically disperse around breeding ponds (Langton et al., 2001).

**Table 5.8 Data sources used to inform the biodiversity assessment**

| Organisation                                                           | Data source                                                               | Date                  | Data provided                                                                                                                                                           |
|------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Multi Agency Geographic Information for the Countryside (MAGIC)</b> | <a href="http://www.magic.org.uk">www.magic.org.uk</a>                    | June 2022             | Statutory sites, ancient woodland, HPIs <sup>52</sup> , National Habitat Network enhancement and expansion zones, water body locations and EPS mitigation licence data. |
| <b>Google Earth</b>                                                    | A review of aerial imagery.                                               | January and June 2022 | Indicative habitat data and water body locations.                                                                                                                       |
| <b>Merseyside Biodiversity Group</b>                                   | North Merseyside Biodiversity Action Plan                                 | June 2022             | Habitats and species listed on local BAP.                                                                                                                               |
| <b>Greater Manchester Ecology Unit</b>                                 | Greater Manchester Biodiversity Action Plan                               | June 2022             | Habitats and species listed on local BAP.                                                                                                                               |
| <b>Cheshire Wildlife Trust</b>                                         | Cheshire Region Biodiversity Action Plan                                  | June 2022             | Habitats and species listed on local BAP.                                                                                                                               |
| <b>Merseyside Biobank</b>                                              | <a href="http://activenaturalist.org.uk">activenaturalist.org.uk</a>      | February 2022         | Non-statutory sites and protected and notable species records.                                                                                                          |
| <b>Greater Manchester Local Record Centre</b>                          | <a href="https://gmlrc.org/">https://gmlrc.org/</a>                       | February 2022         | Non-statutory sites and protected and notable species records.                                                                                                          |
| <b>RECORD</b>                                                          | <a href="https://www.record-lrc.co.uk/">https://www.record-lrc.co.uk/</a> | February 2022         | Non-statutory sites and protected and notable species records.                                                                                                          |
| <b>Cheshire Wildlife Trust</b>                                         | Non-statutory site data                                                   | April 2022            | Non-statutory sites boundaries and information                                                                                                                          |
| <b>Cheshire and Wirral</b>                                             | Birds in Cheshire and Wirral: A breeding and wintering atlas              | March 2022            | A report detailing distribution and population data of bird species in Cheshire and Wirral                                                                              |

<sup>52</sup> Magic.gov.uk hosts a range of datasets relating to HPIs and other potential priority habitats, including but not limited to the Priority Habitat Inventory, and the Open Mosaic Habitat (Draft) inventory.

| Organisation                                               | Data source                                                                                                                   | Date          | Data provided                                                                                                                 |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------|
| Ornithological Society (CAWOS)                             |                                                                                                                               |               | during the Atlas periods (focussing on 2007-11).                                                                              |
|                                                            | Species record data                                                                                                           | July 2022     | Records of SPA-listed, NERC S41 and BoCC5 <sup>53</sup> red/amber list species records and all Schedule 1 species nest sites. |
| British Trust for Ornithology (BTO)                        | Wetland Bird Survey data.                                                                                                     | July 2022     | Wetland Bird Survey data for a range of potentially functionally linked sites with Mersey Estuary SPA.                        |
|                                                            | The Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland (Balmer <i>et al.</i> , 2013 <sup>54</sup> ). | February 2022 | A report detailing bird distribution in Britain and Ireland during the Atlas periods (focussing on 2007-11).                  |
| Northern England Raptor Forum                              | Northern England Raptor Forum Annual Review 2020 (Smith <i>et al.</i> , 2021 <sup>55</sup> ).                                 | February 2022 | A report detailing the population data of raptor and owl species in Raptor Study Group recording areas in 2020.               |
| Raptor Study Groups (RSG) – Cheshire/Wirral and Manchester | Species record data.                                                                                                          | July 2022     | Schedule 1 raptor/owl species nest records.                                                                                   |

<sup>53</sup> Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D. & Win, I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. In: *British Birds*, 114, p723–747.

<sup>54</sup> Balmer, D.E, Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S. & Fuller, R.J. (2013). The Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland. BTO Books, Thetford, UK.

<sup>55</sup> Smith, A.J., Norman, W. & NERF *et al.* (2021). Northern England Raptor Forum Annual Review 2020.

| Organisation                | Data source                                                                                                           | Date      | Data provided                                                       |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------|
| <b>Environmental Agency</b> | Transitional and Coastal Waters data <sup>56</sup> .                                                                  | July 2022 | Fish records in the Mersey Estuary.                                 |
| <b>Cefas</b>                | Spawning and Nursery Grounds Layers for Selected Fish in UK Waters in 2010 (Ellis <i>et al.</i> , 2012) <sup>57</sup> | July 2022 | Fish records and details of spawning grounds in the Mersey Estuary. |
| <b>KNNV Uitgeverij</b>      | Fish Atlas of the Celtic Sea, North Sea, and Baltic Sea (Hessen <i>et al.</i> , 2015) <sup>58</sup>                   | July 2022 | Demersal and pelagic fish distribution data in the Mersey Estuary.  |
| <b>English Nature</b>       | Review of the Status of Estuarine Fishes (Potts & Swaby, 1993) <sup>59</sup>                                          | July 2022 | Fish species data in the Mersey Estuary.                            |
| <b>Environment Agency</b>   | Environment Agency Ecology & Fish Data Explorer <sup>60</sup>                                                         | July 2022 | Fish fauna surveys within inland and TraC waters.                   |

## Survey work

5.5.4 A summary of the survey types used to inform the assessment undertaken to date and the outstanding data requirements are provided in **Table 5.9**. Should any issues with access or data remain at the point of submission in March 2023, limited surveys may need to be completed following the submission of the DCO in

<sup>56</sup> Environment Agency (2021). TraC Fish Counts for all Species for all Estuaries and all years. (Online) Available at: <https://data.gov.uk/dataset/41308817-191b-459d-aa39-788f74c76623/trac-fish-counts-for-all-species-for-all-estuaries-and-all-years> (Accessed 12 July 2022).

<sup>57</sup> Ellis, J.R., Milligan, S.P., Readdy, L., Taylor, N. and Brown, M.J. (2012). Spawning and nursery grounds of selected fish species in UK waters. Sci. Ser. Tech. Rep., Cefas Lowestoft, 147: 56 pp.

<sup>58</sup> Henk J. L. Heesen, H., Daan, N. & Ellis J. (2015). Fish Atlas of the Celtic Sea, North Sea and Baltic Sea: Based on International Research Vessel Data. KNNV Uitgeverij

<sup>59</sup> Potts G. & Swaby S. (1993). Review of the Status of Estuarine Fishes. English Nature, Plymouth UK.

<sup>60</sup> Environment Agency (2022). Ecology & Fish Data Explorer. (Online) Available at <https://environment.data.gov.uk/ecology/explorer/> (Accessed 12 July 2022).

Q1 2023 to ensure any necessary outstanding data is available to complete the assessment (see **Section 5.1: Limitations and assumptions**).

**Table 5.9 Surveys for biodiversity assessment**

| Survey                                 | Survey dates        | Survey methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Further Comments                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Extended Phase 1 habitat survey</b> | April-October 2022. | <p>A Phase 1 habitat survey following JNCC (2010)<sup>61</sup> guidance is being undertaken to provide general information on each habitat type present. The survey will be ‘extended’ to allow for the provision of information on other ecological features, particularly to identify the suitability of habitats to support legally protected species. Habitats will be described in accordance with UK Habitats Classification (UKHabs)<sup>62</sup> methodology and the condition criteria provided in the technical guidance that accompanies the Biodiversity Metric 3.1<sup>63</sup>.</p> <p>This survey includes preliminary hedgerow assessments, aimed at identifying hedgerows that might be classified as ‘important’ based on the relevant ecological and structural criteria set out in The Hedgerows Regulations 1997.</p> <p>The survey area encompasses the land within the Preliminary Order Limits.</p> | <p>Partially complete. An estimated 55% of land within the Preliminary Order Limits has been surveyed. Further survey is ongoing from July to October 2022, where required, as access becomes available.</p> <p>If un-surveyed land remains after this period (e.g. due to access restrictions), surveys would be continued beyond this period should access to remaining land become available.</p> |

<sup>61</sup> Joint Nature Conservation Committee (JNCC) (2010). Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit. JNCC; Peterborough, UK

<sup>62</sup> Butcher, B., Carey, P., Edmonds, R., Norton, L. & Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1.

<sup>63</sup> Natural England Joint Publication JP039 (2022). Biodiversity Metric 3.1: Auditing and accounting for biodiversity – Technical Supplement Part 1a.

| Survey                                                  | Survey dates             | Survey methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Further Comments                                                                                                                                                                                                                   |
|---------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hedgerow Regulations Assessment survey</b>           | None undertaken to date. | An initial assessment of hedgerows will be made during the extended Phase 1 habitat survey to assess whether any of the hedgerows have the potential to be classified as 'important' under the Hedgerows Regulations 1997. The Survey Area encompasses land within the Preliminary Order Limits, focussing on those hedgerows identified as having sufficient potential and likely to be impacted by the Project, which will undergo a more detailed assessment against the set criteria within the Regulations to confirm Important status. | The initial assessment of potential to be 'Important' is ongoing in conjunction with the extended Phase 1 habitat survey. If required, the survey to confirm any Important hedgerows will be undertaken from July to October 2022. |
| <b>Ancient and Veteran Tree assessments</b>             | None undertaken to date  | During the extended Phase 1 habitat survey, any trees which have the potential to be classified as ancient and/or veteran will be noted. Should any such trees be recorded in areas where significant effects are likely, an ancient/veteran tree survey assessment will be undertaken in line with best practice guidance <sup>64</sup> as part of an arboriculture survey. The Survey Area encompasses land within the Preliminary Order Limits and within a 25m surrounding buffer.                                                       |                                                                                                                                                                                                                                    |
| <b>National Vegetation Classification (NVC) surveys</b> | None undertaken to date. | During the extended Phase 1 habitat survey any habitats identified that may qualify as HPis are being noted. NVC surveys will take place within any such habitat likely to be impacted by the Project within the Preliminary Order Limits.                                                                                                                                                                                                                                                                                                   | The initial assessment of potential to be classified as HPis <sup>66</sup> is ongoing in conjunction with the extended Phase 1 habitat survey. If required,                                                                        |

<sup>64</sup> Fey, N (2007). Defining and Surveying Veteran and Ancient Trees. (Online) Available at: [https://www.treeworks.co.uk/downloads/publications/DEFINING\\_AGE\\_AND\\_SURVEYING\\_VETERAN\\_AND\\_ANCIENT%20TREESa.pdf](https://www.treeworks.co.uk/downloads/publications/DEFINING_AGE_AND_SURVEYING_VETERAN_AND_ANCIENT%20TREESa.pdf) (Accessed 01 July 2022).

<sup>66</sup> Habitats that meet the UK Biodiversity Action Plan habitat definitions available on the Joint Nature Conservation Committee website available at: <https://jncc.gov.uk/our-work/uk-bap-priority-habitats/> (Accessed 10 August 2022)

| Survey                     | Survey dates            | Survey methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Further Comments                                                                                                                                                                                                                                           |
|----------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            |                         | Surveys will be undertaken in line with the NVC Users' Handbook <sup>65</sup> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NVC surveys will be undertaken during the appropriate season for the habitat concerned in 2022/spring 2023.                                                                                                                                                |
| <b>Watercourse surveys</b> | None undertaken to date | <p>Walkover survey of each watercourse crossing location to map/record potential ecological constraints, within a 50m working corridor at each scheduled watercourse crossing locations, and a minimum of 50m upstream and downstream.</p> <p>Where deemed necessary, subject to the emerging details of watercourse crossing designs and locations, follow-up surveys: fish; macroinvertebrates; macrophytes; and river habitats. Survey methods in accordance with standard WFD protocols.</p> <p>It is anticipated that ponds and larger waterbodies will be avoided and surveys of these waterbodies (e.g. PSYM (Predictive System for Multimetrics) method) are not currently planned.</p> | The survey area would be extended for follow-up surveys (e.g. fish, macroinvertebrates, macrophytes, river habitats) where specifically necessary, for example in the unlikely event of potentially significant effects on geomorphology or water quality. |

<sup>65</sup> JNCC (2006). NVC Users' Handbook. (online) Available at: <https://hub.jncc.gov.uk/assets/a407ebfc-2859-49cf-9710-1bde9c8e28c7> (Accessed 01 July 2022).

| Survey                 | Survey dates             | Survey methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Further Comments                                                                                                                                                                                                                               |
|------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Bats – roosting</b> | None undertaken to date. | <p>In accordance with best practice<sup>67 68 69 70</sup>, any trees which have potential to be directly or indirectly affected by the Project will be subject to preliminary ground level assessments to determine whether they have features which are suitable for roosting bats within the Preliminary Order Limits and to a buffer of 10m. The results of these assessments will enable the scoping of any subsequent bat emergence and/or re-entry surveys/tree-climbing surveys that may be required with a view to identifying potential or confirmed bat roosts, with survey effort commensurate with the level of suitability.</p> <p>These surveys will follow the Bat Conservation Trust Good Practice Guidelines (2016)<sup>69</sup>/(2022)<sup>71</sup>, Bat Tree Habitat Key (2016)<sup>72</sup> and British Standard 8596:2015: Surveying for bats in trees and woodland, 2016<sup>73</sup>.</p> | If required (i.e. if trees with suitability for roosting bats occur within the Survey Area, as identified during the extended Phase 1 habitat survey) during survey periods in accordance with Bat Conservation trust guidance <sup>69</sup> . |

<sup>67</sup> Mitchell-Jones, A. and McLeish, A. (2004). Bat Workers Manual. Joint Nature Conservation Committee, Peterborough, UK.

<sup>68</sup> Mitchell-Jones, A. (2004). Bat mitigation Guidelines (IN136). English Nature, Peterborough, UK.

<sup>69</sup> Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidance (3<sup>rd</sup> edn). The Bat Conservation Trust, London.

<sup>70</sup> Institution of Lighting Professionals and Bat Conservation Trust (2018). Bats and artificial lighting in the UK. Bats and the Built Environment series. The Bat Conservation Trust, London, UK.

<sup>71</sup> Bat Conservation Trust (2022). Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys.

<sup>72</sup> Andrews, H. et al (2016). Bat Tree Habitat Key, 3<sup>rd</sup> edn. Bridgewater: AEcol.

<sup>73</sup> BSG ecology, (2016). British Standard BS 8596:2015 – Surveying For Bats In Trees And Woodland. (online) Available at: <https://www.bsg-ecology.com/british-standard-bs-85962015-surveying-for-bats-in-trees-and-woodland/> (Accessed 01 July 2022).

| Survey                            | Survey dates                  | Survey methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Further Comments                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Bats – activity</b>            | May-October 2022, April 2023. | Bat activity surveys will be undertaken to inform the baseline and the assessment of potential effects on bats where there is potential for the Project to affect significant areas of favourable bat habitat within the Preliminary Order Limits and to a buffer of 10m, such as foraging areas or habitat connectivity. Surveys would entail a combination of monthly bat activity transect surveys and remote static detector deployment, in line with best practice guidance <sup>69</sup> .                                                                                                                                                                                                                                                            | If required (i.e., if areas of favourable bat habitat occur within the Survey Area, as identified during the extended Phase 1 habitat survey) during survey periods in accordance with Bat Conservation trust guidance <sup>69</sup> .                                                                                                                                                                       |
| <b>Great crested newt surveys</b> | June 2022                     | Surveys would focus on waterbodies (ponds and ditches) in St Helens within the Preliminary Order Limits and an approximate 250m surrounding buffer. Following completion of a desk-based screening exercise, those waterbodies classed as potentially suitable to support great crested newts, and where there are suitable habitat linkages to the Project <sup>74</sup> , would be subject to Habitat Suitability Index <sup>75</sup> assessments to determine their level of suitability for breeding by great crested newts. Those waterbodies that are identified as being suitable (i.e. HSI score equating to 'below average' suitability or above) will be subject to eDNA surveys to determine the presence/likely absence of great crested newts. | It is intended that the Project will join a Natural England-led great crested newt DLL scheme, where it is currently available in districts of Cheshire East, Cheshire West and Chester, Halton and Greater Manchester. Natural England has confirmed that they would be able to extend DLL to include Warrington for the Project.<br><br>The Applicant has had preliminary discussions with Natural England |

<sup>74</sup> Ponds were scoped out at the desk study stage where there was reasonable evidence of them being unsuitable for great crested newts (e.g. large fishing lakes stocked with fish), or where they are isolated from the Project (i.e. where significant barriers to dispersal occurred between the pond and Project, such as major roads or large tracts of unsuitable habitat, as determined from aerial imagery).

<sup>75</sup> Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*).

| Survey | Survey dates | Survey methodology | Further Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------|--------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |              |                    | <p>regarding initial proposals<sup>76</sup>. Joining a DLL scheme removes the need for the Applicant to undertake great crested newt surveys, assessment and mitigation for the Project.</p> <p>Part of the Project occurs in St Helens where a DLL scheme is not currently available, therefore conventional great crested newt surveys including eDNA would be undertaken in this area to inform assessment in accordance with best practice guidance<sup>77 78 79 80</sup> (see left).</p> |

<sup>76</sup> Meeting between the Applicant and Natural England, led by Alex Jackson from the District Level Licencing Team, 23 June 2022.

<sup>77</sup> English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature; Peterborough, UK.

<sup>78</sup> Natural England (2022). Great crested newts: surveys and mitigation for development projects. (Online) Available at: <https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects> (Accessed 01 July 2022)..

<sup>79</sup> Froglife (2001). Great Crested Newt Conservation Handbook. Froglife, Suffolk, UK.

<sup>80</sup> Biggs J., Ewald N., Valentini A., Gaboriaud C., Griffiths R.A., Foster J., et al. (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067. Freshwater Habitats Trust: Oxford, UK.

| Survey                              | Survey dates                         | Survey methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Further Comments                                                                                                                                                                                                                                                                                                          |
|-------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Otter and water vole surveys</b> | July-September 2022, April-June 2023 | Otter and water vole surveys will be undertaken in line with best practice guidance <sup>81 82</sup> at those ditches and watercourses within the Preliminary Order Limits identified as providing potentially suitable habitat for these species during the extended Phase 1 habitat survey, where there is potential for significant effects. Surveys will take place at scheduled watercourse crossing locations, extending approximately 250m up and downstream of each crossing location.<br>For water voles this will involve two survey visits (one during spring and one during summer) unless a single visit survey can be justified in line with best practice guidance. | Otter surveys are being undertaken concurrently with water vole surveys. The first water vole survey visit is being undertaken in summer (July-September) 2022. Where required, a second water vole survey visit will be undertaken in spring (April-June) 2023 with results submitted post DCO application, if required. |
| <b>Reptiles</b>                     | None undertaken to date.             | Should the extended Phase 1 habitat survey identify habitats with the potential to support important assemblages of reptiles (e.g. key reptile sites, with exceptional assemblages of one species or supports three or more reptile species) <sup>83</sup> , in areas likely to be subject to significant effects within the Preliminary Order Limits where land is being permanently lost, presence/likely absence surveys would be undertaken during 2022/23.<br>Surveys would follow Froglife (1999) Advice sheet 10: Reptile survey <sup>83</sup> .                                                                                                                            |                                                                                                                                                                                                                                                                                                                           |

<sup>81</sup> Chanin P (2003). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10. English Nature, Peterborough, UK.

<sup>82</sup> Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016) The Water Vole Mitigation Handbook (Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. Mammal Society, London, UK.

<sup>83</sup> Froglife (1999). Froglife Advice Sheet 10 Reptile Survey. Froglife, Suffolk.

| Survey                      | Survey dates             | Survey methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Further Comments |
|-----------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Badger surveys</b>       | April 2022<br>– on-going | <p>A badger survey will be undertaken to record evidence of badger including setts, foraging pits, footprints, dung pits/latrines and mammal paths. Where setts are encountered, the sett type (main, annexe, outlier, subsidiary) and status will be determined if possible. These surveys will be completed in line with best practice guidance<sup>84</sup>.</p> <p>Surveys will focus on suitable habitat and boundary features within the Preliminary Order Limits and to a buffer of 50m, in conjunction with the extended Phase 1 habitat survey.</p>                                                                                                                                                                                                                                                      |                  |
| <b>Invertebrate surveys</b> | None undertaken to date. | <p>Should the extended Phase 1 habitat survey identify habitats with the potential to support important species or assemblages of SPI invertebrate species in areas likely to be subject to significant effects within the Preliminary Order Limits, these areas would be surveyed further. Invertebrate survey scope and methods vary between species. In determining site-specific survey details, account will be taken of known records, habitat mix, landscape features and potentially significant effects. Survey methods will reflect standard guidance and could include eDNA sampling for a full suite of aquatic fauna (presence/absence) that may focus any subsequent sampling efforts, including direct observation, sweep netting, hand searching, aquatic netting, beating and pitfall traps.</p> |                  |

<sup>84</sup> Scottish Natural Heritage (2003). Best Practice Badger Survey Guidance Note. (online) Available at: <https://www.nature.scot/guidance-licensing-badgers-badger-survey-best-practice> (Accessed 01 July 2022).

| Survey                                  | Survey dates                                             | Survey methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Further Comments |
|-----------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Schedule 1 breeding bird surveys</b> | April 2022 – on-going                                    | During each survey visit, assessments targeted areas within and to a maximum of 500 m from the Preliminary Order Limits identified as supporting suitable habitat for Schedule 1 breeding bird species such as kingfisher ( <i>Alcedo atthis</i> ), Cettis' warbler ( <i>Cettia cetti</i> ), barn owl ( <i>Tyto alba</i> ), marsh harrier ( <i>Circus aeruginosus</i> ), hobby ( <i>Falco subbuteo</i> ) and peregrine ( <i>Falco peregrinus</i> ). Surveys were undertaken in accordance with survey methods outlined in Gilbert <i>et al</i> (2001) <sup>85</sup> , Hardey <i>et al</i> (2013) <sup>86</sup> and Shawyer (2011) <sup>87</sup> . |                  |
| <b>Winter bird walkover surveys</b>     | October 2020 – March 2021 & October 2021 – February 2022 | Farmland bird surveys (comprising five monthly visits, November 2020 to February 2021 inclusive). Wintering waterbird surveys (comprising ten fortnightly visits, October 2020 to March 2021 inclusive) <sup>22</sup> .<br>Wintering bird surveys focussing on qualifying species of the Mersey Estuary SPA and potentially functionally linked habitat (covering the same wetland/intertidal bird surveys transects as those identified by WSP) and undertaken fortnightly between October 2021 and February 2022 inclusive (see <b>Appendix 5C</b> ).                                                                                           |                  |

<sup>85</sup> Gilbert, G., Gibbons, D.W., and Evans, J. (2001). Bird Monitoring Methods: a manual of techniques for key UK species. RSPB; London, UK.

<sup>86</sup> Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2013). Raptors: a field guide to survey and monitoring. Stationary Office; London, UK.

<sup>87</sup> Shawyer, C. (2012). Barn owl *Tyto alba* Survey Methodology and techniques for use in Ecological Assessment. Wildlife Conservation Partnership; London, UK.

| Survey                 | Survey dates             | Survey methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Further Comments |
|------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Aquatic Ecology</b> | August 2022 – March 2023 | A drone flyover of each watercourse crossing (a total of 127), to provide a visual indication of the watercourse type and structure. A total of 34 watercourses have been selected for combined eDNA and river MoRPH surveys from Q3 2022. These watercourses have been chosen to act as representative watercourses within each geographical area/watercourse type to provide an indication of the community structures present. Additionally, 19 watercourse crossings have been selected for macrophyte surveys based on their WFD waterbody classification or chosen as representative watercourses within each geographical area/watercourse type to provide an indication of the community structures present. |                  |

## Data limitations

- 5.5.5 Baseline data collection is on-going during 2022. An overview of limitations to date is provided in **Section 5.1**.

## 5.6 Overall baseline

### Current baseline

#### *Designated sites*

- 5.6.1 There are a number of designated statutory and non-statutory nature conservation sites within the Study Area I (also referred to as 'designated sites') which are described in the following sections and illustrated on **Figures 5.1** and **5.2**.

#### *Statutory designated sites*

The desk study completed to date has identified international, national and local statutory designated sites within the Study Area, outlined in **Table 5.10** and illustrated on **Figure 5.1**. None of the sites identified fall within the Preliminary Order Limits.

Table 5.10 Current baseline – statutory sites within the Study Area

| Site name                                     | Designated feature summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Position relating to the Preliminary Order Limits |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Mersey Estuary SPA                            | Non-breeding water bird assemblage for which the site is designated: shelduck ( <i>Tadorna tadorna</i> ), teal ( <i>Anas crecca</i> ), pinta ( <i>Anas acuta</i> ), golden plover ( <i>Pluvialis apricaria</i> ), dunlin ( <i>Calidris alpina</i> ), black-tailed godwit ( <i>Limosa limosa</i> ), redshank ( <i>Tringa totanus</i> ).                                                                                                                                                                                                                                                                                                                                                                                                       | ~0.87km north                                     |
| Mersey Estuary Ramsar Site                    | Ramsar Criterion 2c, 3a, 3c:<br>International<br>Shelduck: 12,676 individuals in spring/autumn.<br>Black-tailed godwit: 2,011 individuals in spring/autumn.<br>Redshank: 6,651 individuals in spring/autumn.<br>Teal: 10,613 individuals in winter.<br>Pintail: 565 individuals in winter.<br>Dunlin: 48,364 individuals in winter.<br>National<br>Ringed plover ( <i>Charadrius hiaticula</i> ): 429 individuals in spring/autumn.<br>Curlew ( <i>Numenius arquata</i> ): 2,010 individuals (breeding).<br>Spotted redshank ( <i>Tringa erythropus</i> ): three individuals in spring/autumn.<br>Greenshank ( <i>Tringa nebularia</i> ): six individuals in spring/autumn.<br>Wigeon ( <i>Anas penelope</i> ): 8,268 individuals in winter. | ~0.87km north                                     |
| Midlands Meres and Mosses Phase 2 Ramsar Site | Ramsar Criterion 1:<br>The site comprises a diverse range of habitats from open water to raised bog.<br>Ramsar Criterion 2:<br>Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane <i>Cicuta virosa</i> and elongated sedge <i>Carex elongata</i> . Also present are the nationally scarce bryophytes <i>Dicranum affine</i> and <i>Sphagnum pulchrum</i> .<br>Nationally important site for passage shoveler ( <i>Anas clypeata</i> ) (171 individuals) and wintering cormorant ( <i>Phalacrocorax carbo</i> ) (323 individuals), bittern ( <i>Botaurus stellaris</i> ) (one individual) & water rail ( <i>Rallus aquaticus</i> ) (seven individuals) (2008).                     | ~2.37km southwest                                 |
| Rostherne Mere Ramsar Site                    | Ramsar Criterion 1a:<br>Good representative example of the meres of the Shropshire-Cheshire Plain. Rostherne Mere is one of the deepest and largest of the meres. Its shoreline is fringed with common reed <i>Phragmites australis</i> and a small area of peat bog has developed at the north-west end of the mere.<br>Ramsar Criterion 3c:<br>Over winter, the site supports nationally important numbers of shoveler (86 individuals) and pochard ( <i>Aythya ferina</i> ) (757 individuals).                                                                                                                                                                                                                                            | ~2.99km east                                      |
| The Dee Estuary SPA                           | Non-breeding: shelduck, teal, pintail, oystercatcher ( <i>Haematopus ostralegus</i> ), grey plover ( <i>Pluvialis squatarola</i> ), knot, dunlin, black-tailed godwit, bar-tailed godwit, curlew, redshank, Sandwich tern ( <i>Sterna sandvicensis</i> ).<br>Breeding: common tern ( <i>Sterna hirundo</i> ) and little tern ( <i>Sterna albifrons</i> ).<br>Waterbird assemblage.                                                                                                                                                                                                                                                                                                                                                           | ~13.6km west                                      |
| The Dee Estuary Ramsar Site                   | Ramsar Criterion 1:<br>Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ~13.6km west                                      |

| Site name                                             | Designated feature summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Position relating to the Preliminary Order Limits |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                                                       | <p>head of the estuary. Habitats Directive Annex I features present on the pSAC include: Estuaries, Mudflats and sandflats not covered by seawater at low tide, Annual vegetation of drift lines, Vegetated sea cliffs of the Atlantic and Baltic coasts, <i>Salicornia</i> and other annuals colonising mud and sand, Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>), Embryonic shifting dunes, Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (“white dunes”), Fixed dunes with herbaceous vegetation (“grey dunes”) and Humid dune slacks.</p> <p>Ramsar Criterion 2:<br/>It supports breeding colonies of the vulnerable Natterjack Toad, <i>Epidalea calamita</i>.</p> <p>Ramsar Criterion 5:<br/>Non-breeding season regularly supports 120,726 individual waterbirds (5-year peak mean 1994/5–1998/9).</p> <p>Ramsar Criterion 6:<br/>Species with peak counts in spring/autumn:<br/>Redshank, 8,795 individuals, representing an average of 3.5% of the Eastern Atlantic population (five-year peak mean 1994/95 - 1998/99).<br/>Species with peak counts in winter:<br/>Teal, NW Europe 5,251 individuals, representing an average of 1.05% of the population (five-year peak mean 1994/95 - 1998/99);<br/>Shelduck, NW Europe 7,725 individuals, representing an average of 2.6% of the population (five-year peak mean 1994/95 - 1998/99);<br/>Oystercatcher, Europe &amp; W Africa 22,677 individuals, representing an average of 2.2% of the population (five-year peak mean 1994/95 - 1998/99);<br/>Curlew, Europe/NW Africa 3,899 individuals, representing an average of 1.1% of the Europe population (five-year peak mean 1994/95 - 1998/99);<br/>Pintail, NW Europe 5,407 individuals, representing an average of 9.0% of the population (five-year peak mean 1994/95 - 1998/99);<br/>Grey plover, E Atlantic 1,643 individuals, representing an average of 1.1% of the GB population (five-year peak mean 1994/95 - 1998/99);<br/>Knot (<i>Calidris canutus</i>), W Europe/Canada 12,394 individuals, representing an average of 2.75% of the W Europe population (five-year peak mean 1994/95 - 1998/99);<br/>Dunlin, Europe (breeding) 27,769 individuals, representing an average of 2.0% of the population (five-year peak mean 1994/95 - 1998/99);<br/>Black-tailed godwit, Iceland (breeding) 1,747 individuals, representing an average of 3.7% of the population (five-year peak mean 1994/95 - 1998/99);<br/>Bar-tailed godwit (<i>Limosa lapponica</i>), W European (wintering) 1,150 individuals, representing an average of 1.2% of the Europe population (five-year peak mean 1994/95 - 1998/99); and<br/>Redshank, Eastern Atlantic 5,293 individuals representing an average of 2.1% Eastern Atlantic population (five-year peak mean 1994/95 - 1998/99).</p> |                                                   |
| Liverpool Bay SPA                                     | <p>Non-breeding: red-throated diver (<i>Gavia stellata</i>), common scoter (<i>Melanitta nigra</i>), and little gull (<i>Hydrocoloeus minutus</i>).<br/>Breeding: common tern and little tern.<br/>Waterbird assemblage</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ~15.8km west                                      |
| Mersey Narrows and North Wirral Foreshore SPA         | <p>Non-breeding: bar-tailed godwit, little gull, knot and common tern.<br/>Breeding: common tern.<br/>Waterbird assemblage.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ~17.5km west                                      |
| Mersey Narrows and North Wirral Foreshore Ramsar Site | <p>The site qualifies under Criterion 4 because it regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~17.5km west                                      |

| Site name                            | Designated feature summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Position relating to the Preliminary Order Limits |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                                      | <p>During 2004/05 - 2008/09 the Mersey Narrows and North Wirral Foreshore Ramsar site supported important numbers of non-breeding little gulls and common terns.</p> <p>The site qualifies under Criterion 5 because it regularly supports 20,000 or more waterbirds:</p> <p>During the winters 2004/05 - 2008/09, the Mersey Narrows and North Wirral Foreshore Ramsar site supported an average peak of 32,402 individual waterbirds.</p> <p>The site qualifies under Criterion 6 because it regularly supports 1% of the individuals in the populations of the following species or subspecies of waterbird in any season:</p> <p>During the winters 2004/05 - 2008/09, the Mersey Narrows and North Wirral Foreshore Ramsar site supported 2.4% of the <i>islandica</i> subspecies, W Europe/Waddensea/Britain/Ireland (non-breeding) population of knot and 2.8% of the <i>lapponica</i> subspecies W Europe/NW Africa (non-breeding) population of bar-tailed godwits.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                   |
| Ribble and Alt Estuaries SPA         | <p>Non-breeding: Bewick’s swan (<i>Cygnus columbianus</i>), whooper swan (<i>Cygnus cygnus</i>), pink-footed goose (<i>Anser brachyrhynchus</i>), shelduck, wigeon, teal, pintail, oystercatcher, ringed plover, golden plover, grey plover, knot, sanderling (<i>Calidris alba</i>), dunlin, black-tailed godwit, bar-tailed godwit, redshank</p> <p>Breeding: ruff (<i>Philomachus pugnax</i>), lesser black-backed gull, common tern.</p> <p>Waterbird assemblage.</p> <p>Seabird assemblage.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ~19.2km northwest                                 |
| Ribble and Alt Estuaries Ramsar Site | <p>Ramsar Criterion 2:</p> <p>This site supports up to 40% of the Great Britain population of natterjack toads. As plant species: <i>Petalophyllum ralfsii</i> (Conservation status: European Red List: Vulnerable; EC Habitats Directive: Annex II).</p> <p>Ramsar Criterion 5:</p> <p>Species with peak counts in winter:</p> <p>222,038 waterfowl (five-year peak mean 1998/99-2002/2003).</p> <p>Ramsar Criterion 6:</p> <p>Species with peak counts in spring/autumn:</p> <p>Black-tailed godwit, Iceland/W Europe 3,323 individuals, representing an average of 7% of the population (five-year peak mean 1998/9-2002/3);</p> <p>Redshank, 4465 individuals, representing an average of 1.7% of the population (five-year peak mean 1998/9-2002/3);</p> <p>Dunlin, W Siberia/W Europe 38,196 individuals, representing an average of 2.8% of the population (five-year peak mean 1998/9-2002/3 - spring peak);</p> <p>Grey plover, E Atlantic/W Africa -wintering 11,021 individuals, representing an average of 4.4% of the population (five-year peak mean 1998/9-2002/3 - spring peak);</p> <p>Knot, W &amp; Southern Africa (wintering) 42,692 individuals, representing an average of 9.4% of the population (five-year peak mean 1998/9-2002/3);</p> <p>Ringed plover, Europe/Northwest Africa 3761 individuals, representing an average of 5.1% of the population (five-year peak mean 1998/9-2002/3 - spring peak); and</p> <p>Sanderling, Eastern Atlantic 7,401 individuals, representing an average of 6% of the population (five-year peak mean 1998/9-2002/3 - spring peak).</p> <p>Species with peak counts in winter:</p> <p>Bar-tailed godwit, W Palearctic 13,935 individuals, representing an average of 11.6% of the population (five-year peak mean 1998/9-2002/3);</p> <p>Oystercatcher, Europe &amp; NW Africa-wintering 18,926 individuals, representing an average of 1.8% of the population (five-year peak mean 1998/9-2002/3);</p> <p>Teal, NW Europe 5107 individuals, representing an average of 1% of the population (five-year peak mean 1998/9-2002/3);</p> | ~19.2km northwest                                 |

| Site name                                              | Designated feature summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Position relating to the Preliminary Order Limits |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                                                        | Wigeon, NW Europe 69,841 individuals, representing an average of 4.6% of the population (five-year peak mean 1998/9-2002/3);<br>Pintail, NW Europe 1,497 individuals, representing an average of 2.5% of the population (five-year peak mean 1998/9-2002/3);<br>Pink-footed goose, Greenland, Iceland/UK 6,552 individuals, representing an average of 2.42% of the population (five-year peak mean 1998/9-2002/3);<br>Bewick's swan, NW Europe 230 individuals, representing an average of 1.1% of the GB population (five-year peak mean 1998/9-2002/3); and<br>Whooper swan, Iceland/UK/Ireland 211 individuals, representing an average of 1% of the population (five-year peak mean 1998/9-2002/3). |                                                   |
| Hatton's Hey Wood, Whittles Corner and Bank Rough SSSI | Areas of woodland situated on the south facing slopes of the River Weaver valley. Together they form one of the largest blocks of semi-natural clough woodland in the county. Of particular importance are the nationally rare stands of ash ( <i>Fraxinus excelsior</i> ) and small-leaved lime ( <i>Tilia cordata</i> ), which occur on the poorly drained and mildly acidic slopes.                                                                                                                                                                                                                                                                                                                   | ~0.11km southwest                                 |
| Woolston Eyes SSSI                                     | A nationally important site for its breeding bird assemblage of lowland open waters and their margins (including nationally important numbers of black-necked grebe ( <i>Podiceps nigricollis</i> ), gadwall ( <i>Anas strepera</i> ) and pochard, shoveler and teal. Wintering tufted duck ( <i>Aythya fuligula</i> ) use Woolston Eyes in numbers of regional importance.                                                                                                                                                                                                                                                                                                                              | ~0.15km northeast                                 |
| Pettypool Brook Valley SSSI                            | The wetland communities at the head of Pettypool, and those downstream along the course of Pettypool Brook, comprise Cheshire's most extensive and diverse valley mire system. The mature woodland with its abundant dead wood, and the extensive peatland habitats, offer a diversity of refugia to a wide range of insects. The site supports populations of a number of national and county rarities.                                                                                                                                                                                                                                                                                                 | ~0.18km southwest                                 |
| Flood Brook Clough SSSI                                | A deep wooded valley with an ash and wych elm ( <i>Ulmus glabra</i> ) woodland. Many of the plants present are characteristic of ancient woodland on base-rich soils and are comparatively rare in Cheshire.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ~0.35km northeast                                 |
| Frodsham Railway and Road Cuttings SSSI                | Designated for geological features.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ~0.38km south                                     |
| Witton Lime Beds SSSI                                  | A calcareous habitat colonised by a wide range of plant species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~0.65km east                                      |
| Mersey Estuary SSSI                                    | The Mersey Estuary is an internationally important site for wildfowl and consists of large areas of intertidal sand and mudflats. The site also includes an area of reclaimed marshland, saltmarshes, brackish marshes and boulder clay cliffs with freshwater seepages. Notable species include pintail, teal, shelduck, wigeon, dunlin, redshank, curlew and golden plover.                                                                                                                                                                                                                                                                                                                            | ~0.73km north                                     |
| Brookheys Covert SSSI                                  | The majority of the site comprises well-established pedunculate oak-hazel-ash woodland with a large number of small pools. Woodland of this type is uncommon in Greater Manchester and the site contains a wide range of woodland and wetland habitats which make it the most diverse example in the county.                                                                                                                                                                                                                                                                                                                                                                                             | ~0.85km east                                      |
| Dunsdale Hollow SSSI                                   | An acidic lowland birch <i>Betula spp.</i> and sessile oak ( <i>Quercus petraea</i> ) woodland. This type of woodland is often found in the uplands but its occurrence in a lowland landscape is very unusual and it is found on only one other site in Cheshire.                                                                                                                                                                                                                                                                                                                                                                                                                                        | ~1.09km southeast                                 |
| Red Brow Cutting SSSI                                  | Designated for geological features.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ~1.27km southwest                                 |

| Site name                           | Designated feature summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Position relating to the Preliminary Order Limits |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Dunham Park SSSI                    | Pasture-woodland is the dominant habitat type within this site. A large number of the oak and beech ( <i>Fagus sylvatica</i> ) trees are ancient, with some dating back to the 17 <sup>th</sup> Century. Dunham Park is the only site in the northwest and one of the few remaining sites in Britain with such a considerable number of old trees. The associated dead wood beetle fauna is exceptionally rich with 181 species recorded. The fly fauna is very also rich with over 350 species known for this site.            | ~1.63km east                                      |
| Beechmill Wood and Pasture SSSI     | A small clough woodland on the south side of the River Weaver. The woodland is dominated by ash and wych elm, some of which occurs on freely draining light-medium textured soils and forms a nationally rare woodland type. The side valley running north-south is dominated by pedunculate oak ( <i>Quercus robur</i> ) and because ash is not present it is an uncommon woodland type in Cheshire cloughs. Also included in the site is an unimproved field containing an extensive flushed area.                            | ~1.76km south                                     |
| Warburton’s Wood and Well Wood SSSI | An ancient semi-natural clough woodland occupying two deep cloughs and a steep bank of the River Weaver. A number of woodland types occur reflecting the differences in theThese range from the acid free-draining upper slopes and flushes to the waterlogged areas often found at the bottom of the valley.                                                                                                                                                                                                                   | ~1.83km southwest                                 |
| Rostherne Mere SSSI                 | <i>“The Mere is nationally important for its birds. It acts as a winter roost for large numbers of ducks and holds nationally significant numbers of pochard and pintail as well as good numbers of all other common species associated with freshwater. Over 10,000 gulls regularly roost on the water and up to 90 cormorants roost in the trees along the edge. Because of its size and depth it is the last freshwater body in the area to freeze in winter and is consequently an important refuge in severe weather”.</i> | ~2.56km east                                      |
| Stanley Bank Meadow SSSI            | <i>"The diversity of habitats present supports a wide range of insect and bird life. Breeding birds include willow warbler (Phylloscopus trochilus), reed bunting, yellowhammer (Emberiza citrinella) and redpoll (Carduelis spp.)."</i>                                                                                                                                                                                                                                                                                        | ~3.43km northeast                                 |
| Rixton Clay Pits SSSI               | The site comprises parts of an extensive disused brickworks quarry excavated in glacial boulder clay deposits east of Warrington. Diverse populations of birds are associated with the range of wetland, grassland and woodland habitats within the site.                                                                                                                                                                                                                                                                       | ~3.49km northwest                                 |
| Risley Moss SSSI                    | A wide range of breeding birds are present including species associated with unmodified mires, for example meadow pipit ( <i>Anthus pratensis</i> ), skylark ( <i>Alauda arvensis</i> ), reed bunting ( <i>Emberiza schoeniclus</i> ), mallard ( <i>Anas platyrhynchos</i> ) and snipe ( <i>Gallinago gallinago</i> ). The area is also of value for wintering wildfowl and raptors.                                                                                                                                            | ~4.41km northeast                                 |
| Plumley Lime Beds SSSI              | A calcareous habitat colonised by a wide range of plant species. Other habitats on site include woodland, a pool and marshland and an area of soil deposited on part of the lime beds. Little ringed plover ( <i>Charadrius dubius</i> ) is known to have bred.                                                                                                                                                                                                                                                                 | ~5.28km east                                      |
| Astley & Bedford Mosses SSSI        | Important for birds, in particular wintering raptors such as hen harrier ( <i>Circus cyaneus</i> ), short-eared owl ( <i>Asio flammeus</i> ) and merlin ( <i>Falco columbarius</i> ), and it supports breeding species such as curlew and long-eared owl ( <i>Asio otus</i> ). Nightjar ( <i>Caprimulgus europaeus</i> ), precariously confined to the remnant lowland mosslands in the county, may also breed.                                                                                                                 | ~5.65km north                                     |
| Tatton Meres SSSI                   | This area is also important ornithologically as a breeding site for sedge ( <i>Acrocephalus schoenobaenus</i> ) and reed warblers ( <i>A. scirpaceus</i> ), sand martins ( <i>Riparia riparia</i> ) and for wintering and breeding wildfowl.                                                                                                                                                                                                                                                                                    | ~6.41km southeast                                 |
| Sandbach Flashes SSSI               | Several of the flashes are important for breeding birds and also support large numbers of wildfowl and waders as migrants and winter residents. Wigeon (200), teal (500), lapwing ( <i>Vanellus vanellus</i> ) (500), snipe (200) and curlew (50) are regularly recorded.                                                                                                                                                                                                                                                       | ~6.64km southeast                                 |
| Tabley Mere SSSI                    | A waterbody consisting of very nutrient rich water with a well-developed aquatic flora. The site also includes an area of acidic, marshy grassland and woodland. A large heronry is present in the woodland and the undisturbed meres attract numerous wildfowl.                                                                                                                                                                                                                                                                | ~6.89km east                                      |

| Site name                      | Designated feature summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Position relating to the Preliminary Order Limits |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| River Dee (England) SSSI       | The entire River Dee system and associated tributaries support a wide range of breeding birds, which utilise a variety of bankside habitats. Nesting habitat for the kingfisher ( <i>Alcedo atthis</i> ) and sand martin is provided by active erosion of riverbanks. Areas of fast flowing water and bankside cover are favoured by the dipper ( <i>Cinclus cinclus</i> ) and grey wagtail ( <i>Motacilla cinerea</i> ), whereas the yellow wagtail ( <i>Motacilla flava</i> ) and mute swan ( <i>Cygnus olor</i> ) are found along the slower flowing reaches. Populations of grey heron ( <i>Ardea cinerea</i> ), common sandpiper ( <i>Actitis hypoleucos</i> ) and goosander ( <i>Mergus merganser</i> ) also occur on the River Dee. Areas of the Lower Dee floodplains provide breeding grounds for waders such as the lapwing ( <i>Vanellus vanellus</i> ), and, when flooded, provide important over-wintering sites for the pintail. | ~8.7km southwest                                  |
| Cotteril Clough SSSI           | The site has an interesting bird fauna with spotted flycatcher ( <i>Muscicapa striata</i> ), lesser spotted ( <i>Dendrocops minor</i> ), greater spotted ( <i>Dendrocops major</i> ) and green woodpecker ( <i>Picus virids</i> ), blackcap ( <i>Sylvia atricapilla</i> ) and whitethroat ( <i>Sylvia communis</i> ) all known to breed in the woodlands.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ~9.5km east                                       |
| Thatto Heath Meadows LNR       | The stream valley retains much of its pre-industrial landform and traces of field patterns dating back to 1843. Habitats on the site include a stream, acid and neutral grassland, dense scrub and hedgerows.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Adjacent to the Preliminary Order Limits          |
| Daresbury Firs LNR             | A commercial forestry plantation planted with conifer species including Scots pine ( <i>Pinus sylvestris</i> ), Corsican pine ( <i>Pinus nigra</i> ), lodgepole pine ( <i>Pinus contorta</i> ) and larch ( <i>Larix spp.</i> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ~0.33km west                                      |
| Runcorn Hill LNR               | The main habitats on the site include dry heath and acid grassland mosaic, woodland, scrub and two ponds.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ~0.4km northwest                                  |
| Oxmoor Wood LNR                | Habitats on site include grassland, woodland, reedbeds, open water and tall herb communities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ~0.52km southwest                                 |
| Paddington Meadows LNR         | The site supports the last remaining waterside grassland within the loop of the River Mersey. Hedgerow, wetland scrapes and ponds are also present.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ~0.71km north                                     |
| Marshall’s Arm, Hartford LNR   | The main habitats of the site are woodland, grassland and wetland.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ~0.76km northeast                                 |
| Helsby Quarry LNR              | A former sandstone quarry with habitats including woodland, grassland and rock faces.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~0.83km south                                     |
| Murdishaw Wood and Valley LNR  | The site supports ancient woodland and grassland.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ~1.08km north                                     |
| Dorchester Park LNR            | The main habitats on site include woodland, grassland and a ditch.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ~1.1km southwest                                  |
| Parr Hall Millennium Green LNR | Area of marsh and grassland along the St Helens canal. Water vole are known to be present along this stretch of the canal. The site also contains many regionally important species of plant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ~1.72km northeast                                 |

Non-statutory designated sites

5.6.2 The desk study completed to date has identified non-statutory locally designated sites within the Study Area, outlined in **Table 5.11** and illustrated on **Figure 5.2**. Thirty-seven of the sites identified fall within the Preliminary Order Limits.

Table 5.11 Current baseline – non-statutory sites within the Study Area

| Site name                                         | Designated feature summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Position relating to the Preliminary Order Limits |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Rookery Wood and Pool LWS                         | Lowland deciduous woodland with notable vascular plants.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Within Preliminary Order Limits                   |
| Clifton Lagoon LWS                                | Former landfill site situated between the River Weaver and the Weaver Navigation Canal. The site consists of an area of lowland calcareous grassland with surrounding deciduous woodland and scrub.                                                                                                                                                                                                                                                                                                                                                            | Within Preliminary Order Limits                   |
| Disused Railway Line South of Warrington Road LWS | The site is an important wildlife refuge in an area dominated by arable farming. The site comprises areas of scrub, tall ruderal growth and bare ground and these habitats provide a valuable habitat for invertebrates and threatened bird populations such as yellow hammer ( <i>Emberiza citronella</i> ) and grey partridge ( <i>Perdix perdix</i> ).                                                                                                                                                                                                      | Within Preliminary Order Limits                   |
| Ravenhead Ponds LWS                               | The site is part of the Ravenhead Greenway. There are two ponds with swamp and marginal vegetation. The site contains a number of regionally and locally important plant species.                                                                                                                                                                                                                                                                                                                                                                              | Within Preliminary Order Limits                   |
| Frodsham, Helsby and Ince Marshes LWS             | Former mudflats and saltmarsh alongside the Mersey Estuary. Land to the north of Lordship Lane is used as a deposit ground for dredgings from the Manchester Ship Canal and supports a range of wetland habitats. Land to the south of Lordship Lane is in agricultural use surrounded by ditches and hedgerows. Neutral grassland, restorable grassland, reedbeds, saltmarsh and intertidal mudflats are all present. The extensive ditch system is known to support water vole. The site is also important for breeding/wintering birds and vascular plants. | Within Preliminary Order Limits                   |
| Vale Royal Wood LWS                               | An area of deciduous woodland, some of which is classed as ancient and semi-natural woodland. Acts as a wildlife corridor/buffer.                                                                                                                                                                                                                                                                                                                                                                                                                              | Within Preliminary Order Limits                   |
| East Clifton Tip LWS                              | The site contains calcareous grassland, wetland habitats and open mosaics on previously developed land.                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Within Preliminary Order Limits                   |
| Rows Wood LWS                                     | An ancient broadleaved woodland situated on the banks of a stream.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Within Preliminary Order Limits                   |
| Parkside Farm Wood LWS                            | Lowland deciduous woodland which acts as a wildlife corridor/buffer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Within Preliminary Order Limits                   |
| Ansdells Wood LWS                                 | A semi-natural oak woodland with other nationally and regionally important habitats also present including neutral grassland, a pond and marsh. The site contains English bluebell ( <i>Hyacinthoides non-scripta</i> ) and a number of regionally and locally important species.                                                                                                                                                                                                                                                                              | Within Preliminary Order Limits                   |
| Heys Wood and the Riddings LWS                    | Ancient and semi-natural woodland that acts as a wildlife corridor/buffer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Within Preliminary Order Limits                   |
| Park Moss Wood LWS                                | Lowland deciduous woodland with ditches. Ancient trees are present.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Within Preliminary Order Limits                   |
| Acton Bridge Meadows LWS                          | Range of grassland habitats including neutral, marshy and restorable grassland, sections of which are habitat of principal importance, coastal and floodplain grazing marsh.                                                                                                                                                                                                                                                                                                                                                                                   | Within Preliminary Order Limits                   |
| Littledales Gorse LWS                             | The site contains lowland deciduous with areas of wet woodland.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Within Preliminary Order Limits                   |

| Site name                                   | Designated feature summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Position relating to the Preliminary Order Limits |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Anderton Lime Beds LWS                      | Range of habitats including deciduous woodland, calcareous grassland, restorable grassland. The site supports a range of vascular plants.                                                                                                                                                                                                                                                                                                                                                          | Within Preliminary Order Limits                   |
| Sinderland Green Wood SBI                   | An area of broadleaved woodland, which also supports a number of ponds. Some of the woodland has characteristics of ancient woodland, although it does not appear on the Ancient Woodland Inventory.                                                                                                                                                                                                                                                                                               | Within Preliminary Order Limits                   |
| Reeve Court Woodland and grassland LWS      | Several habitats are present onsite including woodlands, wetlands, grasslands and a rock exposure.                                                                                                                                                                                                                                                                                                                                                                                                 | Within Preliminary Order Limits                   |
| Thatto Heath Meadows LWS                    | A remnant meadow system. The meadows comprising of unimproved grassland and a network of hedgerows. A stream valley also runs through the site.                                                                                                                                                                                                                                                                                                                                                    | Within Preliminary Order Limits                   |
| Sandiway Golf Course LWS                    | Large golf course with a mosaic of habitats including deciduous woodland, acid grassland and lowland dry heath.                                                                                                                                                                                                                                                                                                                                                                                    | Within Preliminary Order Limits                   |
| Upper Mersey Estuary LWS                    | This site supports large areas of intertidal sand, mudflats and saltmarsh. Also included are the settlement lagoons used for the disposal of pulverised fuel ash at Fiddler's Ferry Power Station. These lagoons also contain of areas of marsh and wet carr woodland; An area of artificial calcareous habitat unique in Cheshire is also present and is of ecological interest. The site is collectively important for estuarine birds throughout the year.                                      | Within Preliminary Order Limits                   |
| Rye Grass Pipes LWS                         | Two strips of lowland deciduous woodland that act as a wildlife corridor in the surrounding area.                                                                                                                                                                                                                                                                                                                                                                                                  | Within Preliminary Order Limits                   |
| Weaver Valley Country Park LWS              | An area of open greenspace alongside the River Weaver. Patches of deciduous woodland and areas of grassland are present.                                                                                                                                                                                                                                                                                                                                                                           | Within Preliminary Order Limits                   |
| St Helens Canal Disused_A LWS               | A section of disused canal. The majority of the northern side of the canal has dense emergent vegetation, predominantly common reed ( <i>Phragmites australis</i> ). Other notable plant species include hemp agrimony ( <i>Eupatorium cannabinum</i> ), gipsywort ( <i>Lycopus europaeus</i> ) and angelica ( <i>Angelica sylvestris</i> ). The site is a good wildlife corridor and supports breeding birds including several species listed as birds of conservation concern or UK BAP species. | Within Preliminary Order Limits                   |
| Newbridge Wood LWS                          | Lowland deciduous woodland which acts as a wildlife corridor/buffer.                                                                                                                                                                                                                                                                                                                                                                                                                               | Within Preliminary Order Limits                   |
| Latchford Railway Sidings LWS               | Young birch woodland with abundant grey willow and abundant regeneration of pedunculate oak.                                                                                                                                                                                                                                                                                                                                                                                                       | Within Preliminary Order Limits                   |
| Pendlebury Brook (SJ493920-SJ515914) LWS    | A stretch of Pendlebury Brook which provides habitat for water voles.                                                                                                                                                                                                                                                                                                                                                                                                                              | Within Preliminary Order Limits                   |
| Norton Marsh and Upper Moss Side Fields LWS | The site contains an area of saltmarsh, and a number of fields which were actively managed as arable land. Two small pools/wader scrapes have been established on site, and a network of ponds has been established. Over 100 vascular plant species, 20 bird species, eight mammal and 12 invertebrate species have been recorded. A number of these are UK protected and/or BAP priority species.                                                                                                | Within Preliminary Order Limits                   |

| Site name                             | Designated feature summary                                                                                                                                                                                                                                                                                                                                      | Position relating to the Preliminary Order Limits                     |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Upper Moss Side Farm LWS              | Although an intensive arable farm, there is a good ditch network with some native flora as well as areas of set aside, numerous species-rich hedgerows and a eutrophic pond. The site supports good habitat for farmland birds including the grey partridge. Rare grass vetchling ( <i>Lathyrus nissolia</i> ) is also present on areas of set aside.           | Within Preliminary Order Limits                                       |
| Bradford Mill Wood and Marsh LWS      | Lowland deciduous woodland which acts as a wildlife corridor/buffer.                                                                                                                                                                                                                                                                                            | Within Preliminary Order Limits                                       |
| Frodsham Field Studies Centre LWS     | The site contains wetland habitats, grassland, ponds and ditches and supports a number of invertebrates and plants.                                                                                                                                                                                                                                             | Within Preliminary Order Limits                                       |
| Walton Locks LWS                      | A disused channel between the Manchester Ship Canal and River Mersey. The site is important for overwintering wildfowl, notably pochard. Emergent habitat also provides cover for reed buntings and reed and sedge warblers.                                                                                                                                    | Within Preliminary Order Limits                                       |
| Trent and Mersey Canal, Whatcroft LWS | The canal is bordered by habitats including reedbeds and deciduous woodland which includes two veteran trees.                                                                                                                                                                                                                                                   | Within Preliminary Order Limits                                       |
| Sutton Manor LWS                      | An extensive mosaic of grassland, scrub, woodland and wetland habitats created on a former colliery. The geology of the site means it retains water and therefore a large amount of wetland and marsh are present. Water voles have been recorded and the site is well populated with bird species.                                                             | Within Preliminary Order Limits                                       |
| Weaver Valley/Newbridge Pool LWS      | An extensive site alongside the River Weaver. Blocks of deciduous woodland are present, some of which are classed as ancient semi-natural woodland. Marshy and neutral grassland are also present, areas of which are classed as coastal and floodplain grazing marsh. The site acts as a wildlife corridor and is known to support a range of vascular plants. | Within Preliminary Order Limits                                       |
| Moore Nature Reserve LWS              | A mosaic of habitats including dry acid heath grassland, wet deciduous woodland, scrub, ponds and lakes and reedbeds. The range of habitats onsite support a rich variety of plants, as well as attracting waterfowl, butterfly and amphibian populations.                                                                                                      | Within Preliminary Order Limits                                       |
| Sutton Bridge Unused Lagoon LWS       | Coastal and floodplain grazing marsh, restorable grassland and wetland habitats.                                                                                                                                                                                                                                                                                | Within Preliminary Order Limits                                       |
| Partington Nature Reserve SBI         | The site supports a mosaic of habitats including young woodland and scrub, neutral grassland, open water and swamp.                                                                                                                                                                                                                                             | Immediately adjacent to the west of the Preliminary Order Limits      |
| Lower Weaver Valley Woods LWS         | Lowland deciduous woodland which acts as a wildlife corridor/buffer.                                                                                                                                                                                                                                                                                            | Immediately adjacent to the southwest of the Preliminary Order Limits |
| Manor Park Woodland LWS               | An area of wet woodland with several large open areas dominated by common reed and other fen/swamp species. Ditches and a strip of acid grassland are also present onsite. The ditches are diverse and support numerous invertebrates.                                                                                                                          | Immediately adjacent to the west of the Preliminary Order Limits      |

| Site name                         | Designated feature summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Position relating to the Preliminary Order Limits                 |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Dutton Dean LWS                   | Wet woodland with ancient trees.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Immediately adjacent to the south of the Preliminary Order Limits |
| Clifton Cloughs_B LWS             | A semi-natural clough woodland on steep sided slopes.                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ~6m east                                                          |
| Model Farm Wood LWS               | Lowland deciduous woodland which acts as a wildlife corridor/buffer.                                                                                                                                                                                                                                                                                                                                                                                                                                       | ~6m northeast                                                     |
| Park Brow LWS                     | Lowland deciduous woodland.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ~7m southwest                                                     |
| Morts Wood LWS                    | Lowland mixed deciduous woodland that connects to a chain of other small woodlands and provides a corridor for wildlife.                                                                                                                                                                                                                                                                                                                                                                                   | ~8m west                                                          |
| Whatcroft Hedge LWS               | A species-rich hedgerow with a veteran ash tree at its eastern end.                                                                                                                                                                                                                                                                                                                                                                                                                                        | ~13m northwest                                                    |
| Lowes Wood LWS                    | Lowland deciduous woodland which acts as a wildlife corridor/buffer.                                                                                                                                                                                                                                                                                                                                                                                                                                       | ~16m south                                                        |
| Fields Behind Ye Olde No. 3_B LWS | The fields behind ‘Ye Olde No.3’ lie between the canal in the north and a river to the south. The site comprises botanically diverse canal margins and wet woodland along the river which grades to broadleaved woodland to the south. Fields of poor semi-improved and improved grassland separate the canal habitat from the rest of the LWS. The most interesting parts of the site are the two species rich areas of swamp found in the Section B where greater tussock-sedge is frequent to dominant. | ~24m northeast                                                    |
| Broadoak Wood SBI                 | A semi-natural birch-dominated woodland. This type of broadleaved woodland is characteristic of acid peat substrates on moss land sites.                                                                                                                                                                                                                                                                                                                                                                   | ~33m northwest                                                    |
| Fields Behind Ye Olde No. 3_A LWS | The fields behind ‘Ye Olde No.3’ lie between the canal in the north and a river to the south. The site comprises botanically diverse canal margins and wet woodland along the river which grades to broadleaved woodland up slope to the south. Fields of poor semi-improved and improved grassland separate Section A (the canal habitat) from the rest of the LWS.                                                                                                                                       | ~36m east                                                         |
| Clifton Cloughs_A LWS             | A semi-natural clough woodland.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ~36m northeast                                                    |
| Lodge Wood LWS                    | Ancient and semi-natural deciduous woodland supporting a range of vascular plants.                                                                                                                                                                                                                                                                                                                                                                                                                         | ~38m northeast                                                    |
| Puddinglake Brook Wood LWS        | Lowland deciduous woodland with areas of wet woodland and large veteran crack willow ( <i>Salix fragilis</i> ).                                                                                                                                                                                                                                                                                                                                                                                            | ~38m northeast                                                    |
| Whatcroft Lane Wetlands LWS       | The site contains a pond surrounded by reedbeds and areas of species rich neutral grassland and restorable grassland. Reedbeds are also present along the Trent and Mersey Canal.                                                                                                                                                                                                                                                                                                                          | ~42m north                                                        |
| River Dane, Bostock LWS           | Section of the River Dane designated for a mosaic of habitats along the river corridor such as deciduous woodland, wet woodland, restorable grassland, reedbeds, ponds, ditches and hedgerows.                                                                                                                                                                                                                                                                                                             | ~42m southeast                                                    |

| Site name                          | Designated feature summary                                                                                                                                                                                         | Position relating to the Preliminary Order Limits |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Model Farm Pasture LWS             | An agricultural field which contains good quality semi-improved grassland.                                                                                                                                         | ~45m northwest                                    |
| Moore Meadows LWS                  | A site that largely comprises grassland habitat, some of which is classed as coastal and floodplain grazing marsh. Small areas of deciduous woodland are also present.                                             | ~75m southeast                                    |
| Birds Wood LWS                     | Ancient and semi-natural deciduous woodland.                                                                                                                                                                       | ~79m northeast                                    |
| Dutton Dingles LWS                 | Lowland deciduous woodland.                                                                                                                                                                                        | ~92m northwest                                    |
| Sherdley Park LWS                  | The park includes several areas of relict woodlands and wetlands. Great crested newt is known to be present, and variety of habitats are favourable for a number of plants, invertebrates, amphibians and mammals. | ~0.11km southeast                                 |
| Garden Wood LWS                    | Ancient and semi-natural deciduous woodland supporting a range of vascular plants.                                                                                                                                 | ~0.12km north                                     |
| Old mineral line Lea Green LWS     | A mix of grassland habitats established on colliery spoil. Scrub has also developed within the site.                                                                                                               | ~0.13km northeast                                 |
| Fury Tip LWS                       | Open mosaic habitat on previously developed land.                                                                                                                                                                  | ~0.14km east                                      |
| Wharcroft Woodland LWS             | Strip of lowland deciduous woodland along the River Dane.                                                                                                                                                          | ~0.14km northwest                                 |
| Kennel Wood, Northwich LWS         | Lowland deciduous woodland that acts as a wildlife corridor/buffer.                                                                                                                                                | ~0.15km north                                     |
| Woolstencroft Farm Meadow LWS      | Citation has not been requested <sup>88</sup> .                                                                                                                                                                    | ~0.15km east                                      |
| Hefferston Grange Farm Meadows LWS | Acid grassland meadows with notable vascular plants.                                                                                                                                                               | ~0.18km southeast                                 |
| Bog Rough LWS                      | Citation has not been requested.                                                                                                                                                                                   | ~0.21km east                                      |
| Daresbury Firs (Keckwick Hill) LWS | Citation has not been requested.                                                                                                                                                                                   | ~0.21km west                                      |
| Hopyards Wood LWS                  | Lowland deciduous woodland and hedgerows.                                                                                                                                                                          | ~0.22km north                                     |
| Wharton Green Pasture LWS          | A small area of restorable grassland and wetland habitats.                                                                                                                                                         | ~0.22km south                                     |

<sup>88</sup> Given that RECORD do not provide citations as part of their standard data search, only citations for those LWS in the areas of Warrington and Halton which have the potential to be affected by the Project were requested in line with a proportional approach to data collation. As a minimum this included those sites within 0.10km of the Preliminary Order Limits. For the remaining sites, once embedded measures are accounted for, those where an impact pathway (direct or indirect) is still likely to lead to a potentially significant effect, will be assessed for the ES.

| Site name                                         | Designated feature summary                                                                                                                         | Position relating to the Preliminary Order Limits |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Cuddington Brook (North) LWS                      | Wet woodland with ancient trees and hedgerows.                                                                                                     | ~0.25m west                                       |
| Long Acre Wood LWS                                | Ancient woodland known to support a range of vascular plants.                                                                                      | ~0.25km north                                     |
| Station Road Railway Site LWS                     | Open mosaic habitat on previously developed land.                                                                                                  | ~0.29km southeast                                 |
| Appleton Reservoir LWS                            | Citation has not been requested.                                                                                                                   | ~0.29km east                                      |
| Daresbury Firs LWS                                | Citation has not been requested.                                                                                                                   | ~0.3km west                                       |
| Pitts Heath Wood LWS                              | Citation has not been requested.                                                                                                                   | ~0.31m south                                      |
| Witton Flashes LWS                                | The site supports wetland habitats and areas of neutral grassland with bordering deciduous woodland. The site supports a range of vascular plants. | ~0.31km east                                      |
| Helsby Hill LWS                                   | Lowland deciduous woodland that acts as a wildlife corridor/buffer.                                                                                | ~0.32km southeast                                 |
| Runcorn Hill LWS                                  | Citation has not been requested.                                                                                                                   | ~0.33km west                                      |
| New Pool and Wood LWS                             | Large pond with surrounding woodland and scrub.                                                                                                    | ~0.35m south                                      |
| Quick Woods LWS                                   | Area of woodland which acts as a wildlife corridor/buffer.                                                                                         | ~0.38km south                                     |
| Nursery Wood LWS                                  | Small area of ancient semi-natural woodland.                                                                                                       | ~0.39km northeast                                 |
| Whitegate Way LWS                                 | A disused railway bordered by areas of grassland and woodland. Acts as a corridor for wildlife. Notable plants are present.                        | ~0.4km southwest                                  |
| Clough Wood LWS                                   | Citation has not been requested.                                                                                                                   | ~0.41km north                                     |
| Carrington Power Station SBI                      | Area of calcareous power station ash deposits that has been colonised by dense scrub and grassland.                                                | ~0.41km north                                     |
| Bestway Wood, Gunners Clough and Nursery Wood LWS | Lowland deciduous woodland some of which is noted to be ancient and semi natural. The woodland acts as a wildlife corridor/buffer.                 | ~0.42km south                                     |
| Green Wood LWS                                    | Citation has not been requested.                                                                                                                   | ~0.42km southwest                                 |
| Oxmoor_B LWS                                      | Citation has not been requested.                                                                                                                   | ~0.42km southwest                                 |

| Site name                             | Designated feature summary                                                                                                                                                                    | Position relating to the Preliminary Order Limits |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Beechwood LWS                         | Citation has not been requested.                                                                                                                                                              | ~0.43km north                                     |
| Gowy Meadows and Ditches LWS          | Habitats include marshy and neutral grassland, coastal and floodplain grazing marsh, ponds and ditches and hedgerows. A range of birds, mammals and vascular plants are known to be present.  | ~0.43km west                                      |
| Whittle Brook (SJ521902-SJ535896) LWS | A section of the Whittle Brook which provides habitat for water vole.                                                                                                                         | ~0.43km northeast                                 |
| Heath Off Bradford Road LWS           | Deciduous woodland that acts as a wildlife corridor/buffer.                                                                                                                                   | ~0.43km southwest                                 |
| Oxmoor_A LWS                          | Citation has not been requested.                                                                                                                                                              | ~0.5km southwest                                  |
| Barker's Hollow Wood LWS              | Citation has not been requested.                                                                                                                                                              | ~0.5km southwest                                  |
| Pettypool Wood LWS                    | A large area of ancient and semi-natural deciduous woodland with areas of wetland. These habitats act as a wildlife corridor/buffer.                                                          | ~0.51km southwest                                 |
| First Pit, Ellis Lane LWS             | A pond designated for its vascular plants.                                                                                                                                                    | ~0.51km south                                     |
| Park Brow Pool LWS                    | Pond with vascular plants.                                                                                                                                                                    | ~0.51km south                                     |
| Boundary Farm Pond LWS                | Pond with reedbeds.                                                                                                                                                                           | ~0.53km north                                     |
| Weston Marsh Lagoon LWS               | Citation has not been requested.                                                                                                                                                              | ~0.54km northwest                                 |
| Mersey Valley Golf Course LWS         | A golf course containing a number of ponds and species-rich hedgerows. The ponds provide habitat for the regionally important species named rigid hornwort ( <i>Ceratophyllum demersum</i> ). | ~0.55km north                                     |
| Marbury Big Wood LWS                  | Lowland deciduous woodland with ancient and veteran trees. Is a potential corridor for wildlife in the surrounding area.                                                                      | ~0.56km northeast                                 |
| Lower Weaver Valley Floodplain LWS    | Coastal and floodplain grazing marsh that acts as a wildlife corridor/buffer.                                                                                                                 | ~0.57km south                                     |
| Gatewarth LWS                         | Citation has not been requested.                                                                                                                                                              | ~0.58km north                                     |
| Alexandra Colliery LWS                | A disused mine with spoil heaps. A range of habitats have now developed such as acid and neutral grassland which contain a number of regionally and locally important species.                | ~0.58km west                                      |
| Greenbank Wood LWS                    | Lowland deciduous woodland that acts as a wildlife corridor/buffer.                                                                                                                           | ~0.6km north                                      |

| Site name                                                     | Designated feature summary                                                                                                                                                                                                                                                                                                                                            | Position relating to the Preliminary Order Limits |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Catsclough LWS                                                | Ancient deciduous woodland.                                                                                                                                                                                                                                                                                                                                           | ~0.6km south                                      |
| Silver Well Wood LWS                                          | Woodland that acts as a corridor for wildlife in the surrounding area known to support a range of vascular plants.                                                                                                                                                                                                                                                    | ~0.6km southwest                                  |
| Friar's Rough LWS                                             | Lowland deciduous woodland.                                                                                                                                                                                                                                                                                                                                           | ~0.61km southeast                                 |
| St Helens Canal Disused_B LWS                                 | A section of disused canal. The majority of the northern side of the canal has dense emergent vegetation, predominantly common reed. Other notable plant species include hemp agrimony, gipsywort and angelica. The site is a good wildlife corridor and supports breeding birds including several species listed as birds of conservation concern or UK BAP species. | ~0.61km north                                     |
| Ash Trees along Trent and Mersey Canal, Billinge Green LWS    | Two veteran ash trees alongside the western bank of the canal.                                                                                                                                                                                                                                                                                                        | ~0.61km northwest                                 |
| Crowholt Wood and Whitley Brook LWS                           | Strip of lowland deciduous woodland running alongside a brook. Known to support notable vascular plants.                                                                                                                                                                                                                                                              | ~0.64km east                                      |
| Bradley Meadow Wood, Hawton Clough and Little Leigh Ponds LWS | Lowland deciduous woodland that acts as a wildlife corridor/buffer.                                                                                                                                                                                                                                                                                                   | ~0.64km northeast                                 |
| Hob Hey Wood LWS                                              | Lowland deciduous woodland with hedgerows. Acts as a wildlife corridor.                                                                                                                                                                                                                                                                                               | ~0.65km south                                     |
| Marbury Lime Bed and Forge Pool LWS                           | Reclaimed lime beds with grassland, open water and wetland habitats. A number of notable vascular plants are present.                                                                                                                                                                                                                                                 | ~0.67km northeast                                 |
| Meadow by Earls Wood and River Dane LWS                       | Restorable grassland meadow. A small section of ancient semi-natural woodland is also present within the boundary of the site.                                                                                                                                                                                                                                        | ~0.67km north                                     |
| Dennow Wood LWS                                               | Citation has not been requested.                                                                                                                                                                                                                                                                                                                                      | ~0.67km east                                      |
| Moss Wood SBI                                                 | A semi-natural secondary woodland which has developed on peat.                                                                                                                                                                                                                                                                                                        | ~0.6km west                                       |
| Southern Verge Embankment LWS                                 | Citation has not been requested.                                                                                                                                                                                                                                                                                                                                      | ~0.7km north                                      |
| Paddington Meadows LWS                                        | Citation has not been requested.                                                                                                                                                                                                                                                                                                                                      | ~0.7km northwest                                  |
| Peck Mill Valley LWS                                          | Ancient semi-natural woodland and undetermined grassland.                                                                                                                                                                                                                                                                                                             | ~0.71km north                                     |
| Whiteoaks Wood SBI                                            | Lowland deciduous woodland.                                                                                                                                                                                                                                                                                                                                           | ~0.73km southeast                                 |

| Site name                            | Designated feature summary                                                                                                                                                                                                                           | Position relating to the Preliminary Order Limits |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Dutton Hospital Wood LWS             | Citation has not been requested.                                                                                                                                                                                                                     | ~0.73km northeast                                 |
| Sankey Canal Central_B LWS           | Citation has not been requested.                                                                                                                                                                                                                     | ~0.74km northwest                                 |
| Petty Pool Brook and Woods LWS       | Lowland deciduous woodland which acts as a wildlife corridor/buffer.                                                                                                                                                                                 | ~0.71km southwest                                 |
| Frodsham and Overton Woods           | Lowland deciduous woodland with areas of lowland heathland.                                                                                                                                                                                          | ~0.75km southeast                                 |
| Barnton Cut Wood LWS                 | Lowland deciduous woodland which acts as a wildlife corridor/buffer.                                                                                                                                                                                 | ~0.75km west                                      |
| Budworth Mere LWS                    | A large mere with bordering reedbeds and areas of lowland deciduous woodland. Ancient and veteran trees are present within the woodland. The site is important for bird and mammal species.                                                          | ~0.76km north                                     |
| Land off Lunts Heath Road_A LWS      | Citation has not been requested.                                                                                                                                                                                                                     | ~0.76km southwest                                 |
| Hoblane Ponds LWS                    | Pond within bordered by arable fields.                                                                                                                                                                                                               | ~0.77km south                                     |
| Widnes Warth Saltmarsh LWS           | Citation has not been requested.                                                                                                                                                                                                                     | ~0.77km west                                      |
| Sankey Canal Central_A LWS           | Citation has not been requested.                                                                                                                                                                                                                     | ~0.77km west                                      |
| Brookheys Covert SBI                 | An area of ancient semi-natural broadleaved woodland with a species-rich ground flora.                                                                                                                                                               | ~0.78km southeast                                 |
| St Helens Canal LWS                  | Citation has not been requested.                                                                                                                                                                                                                     | ~0.78km west                                      |
| Merryfall Wood LWS                   | Wet woodland which acts as a wildlife corridor/buffer in a largely arable landscape.                                                                                                                                                                 | ~0.79km southeast                                 |
| Fox Covert and Meadows SBI           | An area of broadleaved woodland that is a mixture of lowland broadleaved and wet woodland. The woodland supports a number of ancient woodland indicators. Two wet meadows are also present within the site.                                          | ~0.8km west                                       |
| Lodge Plantation LWS                 | Citation has not been requested.                                                                                                                                                                                                                     | ~0.81km southwest                                 |
| Sutton Brook (SJ530935-SJ526945) LWS | A diverse stretch of Sutton Brook with a mosaic of acid, neutral and alkaline grassland along its banks. The brook and banks contain a number of regionally and locally important plant species. The site also supports a population of water voles. | ~0.81km east                                      |
| Harmers Wood LWS                     | A lowland deciduous woodland that acts as a wildlife corridor/buffer.                                                                                                                                                                                | ~0.8km southeast                                  |
| Billinge Green Farm Pond LWS         | A large pool and an area of swamp surrounded by deciduous woodland and scrub. Notable vascular plants are present.                                                                                                                                   | ~0.85km northwest                                 |

| Site name                                              | Designated feature summary                                                                                                                          | Position relating to the Preliminary Order Limits |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Land off Lunts Heath Road_B LWS                        | Citation has not been requested.                                                                                                                    | ~0.85km southwest                                 |
| Helsby Allotments and Cemetery LWS                     | Allotment and cemetery designated due to the presence of reptile populations.                                                                       | ~0.85km southeast                                 |
| Black Moss Covert SBI                                  | A small woodland with adjacent species rich ditch.                                                                                                  | ~0.87km southeast                                 |
| Red Brook SBI                                          | A section of the brook that supports natural river habitat features. The Brook is an important wildlife corridor.                                   | ~0.88km west                                      |
| Norbury Wood LWS                                       | Citation has not been requested.                                                                                                                    | ~0.91km west                                      |
| Drakelow Gorse LWS                                     | An area of lowland deciduous woodland with ponds.                                                                                                   | ~0.92km east                                      |
| Upper Mersey Estuary Intertidal Areas and Mudflats LWS | Citation has not been requested.                                                                                                                    | ~0.92km southwest                                 |
| Bawsgate Pond and Grassland LWS                        | A range of habitats are present onsite including open water, wet woodland and marshy and acid grasslands. The site acts as a corridor for wildlife. | ~0.94km south                                     |
| Pickering's Oxbow LWS                                  | Wetland habitats with ponds and ditches. Acts as a wildlife corridor/buffer.                                                                        | ~0.94km south                                     |
| Bridgewater Canal SBI                                  | Section of the canal that provides a corridor for wildlife in the local area.                                                                       | ~0.96km southeast                                 |
| Brickkiln Nursery Wood SBI                             | A small area of lowland deciduous woodland, associated with the Dunham Park Estate.                                                                 | ~1km southeast                                    |
| Blackamoor Wood and the Coppice LWS                    | Lowland deciduous woodland.                                                                                                                         | ~1.0km south                                      |
| Big Wood LWS                                           | Woodland that acts as a wildlife corridor.                                                                                                          | ~1.01km southwest                                 |
| B W Lagoon, Kingsley LWS                               | The site supports fens, swamps, bogs and reedbeds.                                                                                                  | ~1.02km southwest                                 |
| Sandymoor Wood LWS                                     | Citation has not been requested.                                                                                                                    | ~1.02km south                                     |
| The Glen LWS                                           | Citation has not been requested.                                                                                                                    | ~1.02km north                                     |
| Bull's Wood and Meadow LWS                             | The site contains a meadow with neutral and restorable grassland present. An area of ancient semi-natural deciduous woodland is also present.       | ~1.03km south                                     |

| Site name                                 | Designated feature summary                                                                                                                                                                                                                           | Position relating to the Preliminary Order Limits |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Ashton's and Neumann's Flashes LWS        | Reclaimed lime beds with a range of habitats including neutral and restorable grasslands, lakes, reedbeds and open mosaic habitat on previously developed land. The site is known to support a range of bird species including waders and waterfowl. | ~1.04km east                                      |
| Oak Wood near School Lane SBI             | Lowland deciduous woodland.                                                                                                                                                                                                                          | ~1.04km southeast                                 |
| Murdishaw Wood and Valley LWS             | Citation has not been requested.                                                                                                                                                                                                                     | ~1.05km north                                     |
| Dorchester Park LWS                       | Citation has not been requested.                                                                                                                                                                                                                     | ~1.06km southwest                                 |
| Helsdale Wood and Newhey's Plantation LWS | Citation has not been requested.                                                                                                                                                                                                                     | ~1.07km west                                      |
| Westy Point LWS                           | Citation has not been requested.                                                                                                                                                                                                                     | ~1.08km northwest                                 |
| Sutton Mill Dam LWS                       | A water body created by the damming of Sutton Mill Brook. The site contains a number of nationally and regionally important habitats and plant species.                                                                                              | ~1.08km northeast                                 |
| Forge Wood LWS                            | Lowland deciduous woodland.                                                                                                                                                                                                                          | ~1.08km northeast                                 |
| Grappenhall Heys_B LWS                    | Citation has not been requested.                                                                                                                                                                                                                     | ~1.1km south                                      |
| Dunham Park SBI                           | Ancient parkland with pedunculate oak and beech over bracken and acid grassland.                                                                                                                                                                     | ~1.1km southeast                                  |
| Pear Tree Farm LWS                        | Designated for traditional orchard habitat. An area of restorable grassland is also present.                                                                                                                                                         | ~1.11km northwest                                 |
| Cartledge Moss LWS                        | A small area of wet woodland with ancient trees surrounded by housing estates.                                                                                                                                                                       | ~1.12km west                                      |
| Acton Cliff Meadow LWS                    | Lowland meadow with veteran and/or ancient trees.                                                                                                                                                                                                    | ~1.12km south                                     |
| Thatto Heath Dam LWS                      | A disused reservoir with swamp and marginal habitats. Notable due to the presence of the aquatic plant hornwort.                                                                                                                                     | ~1.13km west                                      |
| Wades Lane Clough LWS                     | Ancient semi-natural deciduous woodland that acts as a wildlife corridor/buffer.                                                                                                                                                                     | ~1.14km southwest                                 |
| Sixes Pool LWS                            | Habitats onsite include open water and deciduous woodland.                                                                                                                                                                                           | ~1.14km southwest                                 |
| Hogswood Covert SBI                       | Ancient semi-natural broadleaved woodland.                                                                                                                                                                                                           | ~1.14km east                                      |

| Site name                       | Designated feature summary                                                                                                                                                                                    | Position relating to the Preliminary Order Limits |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Astmoor Saltmarsh and Swamp LWS | Citation has not been requested.                                                                                                                                                                              | ~1.19km south                                     |
| Deakin Yard Wood LWS            | Woodland. Accessible natural greenspace.                                                                                                                                                                      | ~1.19km southeast                                 |
| The Bongs and the Gorse LWS     | Citation has not been requested.                                                                                                                                                                              | ~1.19km northwest                                 |
| Land North of Hallwood Park LWS | Citation has not been requested.                                                                                                                                                                              | ~1.2km northeast                                  |
| Marston Meadows LWS             | Restorable and undetermined grassland areas. Known to support a range of vascular plants.                                                                                                                     | ~1.21km northeast                                 |
| Stretton Moss LWS               | Citation has not been requested.                                                                                                                                                                              | ~1.21km northwest                                 |
| Thelwall Meadow LWS             | Citation has not been requested.                                                                                                                                                                              | ~1.22km east                                      |
| Kennel Wood, Sandiway LWS       | Lowland deciduous woodland that acts as a wildlife corridor/buffer.                                                                                                                                           | ~1.22km southwest                                 |
| Wetland at Carrington Moss SBI  | Naturally colonised sand, calcareous slag and limestone chippings adjacent to a chemical works. Habitats include a wetland area of shallow water, reedbed, marsh, willow carr, developing woodland and scrub. | ~1.23km east                                      |
| Cliff Brook Meadows LWS         | Wetland habitats and areas of scrub.                                                                                                                                                                          | ~1.24km south                                     |
| The Twiggeries LWS              | Citation has not been requested.                                                                                                                                                                              | ~1.24km north                                     |
| Flixton Sludge Beds SBI         | The site contains a number of habitats of principal importance including deciduous woodland, lowland fen and coastal and floodplain grazing marsh.                                                            | ~1.28km northeast                                 |
| Woolston New Cut Canal LWS      | Citation has not been requested.                                                                                                                                                                              | ~1.28km north                                     |
| Grappenhall Heys_A LWS          | Citation has not been requested.                                                                                                                                                                              | ~1.29km south                                     |
| Grey's Gorse LWS                | Citation has not been requested.                                                                                                                                                                              | ~1.3km southeast                                  |
| Old River Irwell SBI            | Section of the river that acts as a wildlife corridor.                                                                                                                                                        | ~1.36km north                                     |
| Pex Hill Country Park LWS       | The site contains areas of heathland with acidic grassland and oak dominated woodland overlying sandstone. The Quarry area adds diversity.                                                                    | ~1.36km southwest                                 |
| Daresbury LWS                   | Citation has not been requested.                                                                                                                                                                              | ~1.37km west                                      |

| Site name                                | Designated feature summary                                                                                                                                               | Position relating to the Preliminary Order Limits |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Heatley Lake_B LWS                       | Citation has not been requested.                                                                                                                                         | ~1.38km west                                      |
| Heatley Lake_A LWS                       | Citation has not been requested.                                                                                                                                         | ~1.38km west                                      |
| Bank Hall Farm Flush LWS                 | Designated due to the presence of veteran trees, neutral grassland and wetland habitats.                                                                                 | ~1.39km southeast                                 |
| Mill Wood, Big Wood & Willowbed Wood LWS | Citation has not been requested.                                                                                                                                         | ~1.4km southeast                                  |
| The Rough, woodland LWS                  | A semi-natural woodland. The woodland contains English bluebell as well as locally rare plant species.                                                                   | ~1.42km southwest                                 |
| Beauty Bank LWS                          | Lowland meadows with strips of bordering lowland deciduous woodland. The site supports a range of vascular plants.                                                       | ~1.42km southwest                                 |
| Bewsey Meadows LWS                       | Citation has not been requested.                                                                                                                                         | ~1.43km north                                     |
| Flint Mill Reedbeds LWS                  | An area of reedbeds along the Trent and Mersey Canal.                                                                                                                    | ~1.45km south                                     |
| River Gowy LWS                           | The site supports open mosaic habitat on previously developed land which acts as a wildlife corridor.                                                                    | ~1.48km west                                      |
| Snipe Island LWS                         | Small areas of wet woodland with notable vascular plants.                                                                                                                | ~1.48km southwest                                 |
| Owley Wood LWS                           | Ancient and semi-natural woodland along the bank of the River Weaver.                                                                                                    | ~1.49km east                                      |
| Jack Lane SBI                            | An area of wetland with lowland fens and reedbed present.                                                                                                                | ~1.49km northeast                                 |
| Birchmoss Covert SBI                     | A lowland raised bog with scrub encroaching.                                                                                                                             | ~1.51km east                                      |
| Blundell Hills Golf Course LWS           | A golf course with several habitats including woodland, scrub, wetlands and hedgerows.                                                                                   | ~1.55km southwest                                 |
| The Dingle and Ford's Rough LWS          | Citation has not been requested.                                                                                                                                         | ~1.55km south                                     |
| Beach Hill Wood LWS                      | Lowland deciduous woodland.                                                                                                                                              | ~1.56km northeast                                 |
| Marston Flashes LWS                      | The site has several habitats including marshy and restorable grasslands, open water, reedbeds, deciduous woodland. Several notable plants are known to be found onsite. | ~1.57km east                                      |
| The Willowbeds LWS                       | A broadleaved woodland with a system of drains and ditches and a marshy area. Moschatel, wood anemone, wood avens and ground ivy are present.                            | ~1.61km east                                      |

| Site name                                           | Designated feature summary                                                                                                                                                                                                                                                                         | Position relating to the Preliminary Order Limits |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Land, west of Gerrards Lane LWS                     | Unimproved neutral grassland which contains a number of regionally and locally rare species.                                                                                                                                                                                                       | ~1.61km southeast                                 |
| Ravensclough                                        | Area of wet woodland with notable vascular plants.                                                                                                                                                                                                                                                 | ~1.61km southwest                                 |
| St Helens Canal, south of Haresfinch Burgy Bank LWS | A canalised section of Rainford Brook. The north bank and slope are composed of burgy waste from glass manufacture. It contains several regionally and locally important plant species including those more usually associated with salt marshes.                                                  | ~1.61km north                                     |
| Haresfinch Burgy Banks LWS                          | A waste tip which has developed into a diverse site containing a range of acid, neutral and alkaline communities. A large number of plant species are present including nationally, regionally and locally important species.                                                                      | ~1.63km north                                     |
| Lymm Dam Complex LWS                                | Citation has not been requested.                                                                                                                                                                                                                                                                   | ~1.66km northwest                                 |
| Stenhills Open Space LWS                            | Citation has not been requested.                                                                                                                                                                                                                                                                   | ~1.67km northeast                                 |
| Rough Grassland around Sutton Dam Stream LWS        | The site contains a mosaic of habitats comprising neutral grassland, scrub, broadleaf woodland. There are also a range of wetland and marsh habitat around Sutton Mill Brook which runs through the centre of the site. The site supports a number of nationally and regionally important species. | ~1.67km northeast                                 |
| Parr Hall Millenium Green and Canal LWS             | A site with exceptionally rich and varied marsh and grassland areas. Water voles are also present on this stretch of the St. Helens Canal.                                                                                                                                                         | ~1.67km northeast                                 |
| Norton Priory_A LWS                                 | Citation has not been requested.                                                                                                                                                                                                                                                                   | ~1.68km southwest                                 |
| Veteran Ash Tree - Bank Hall Farm LWS               | A veteran tree is present.                                                                                                                                                                                                                                                                         | ~1.7km south                                      |
| Altrincham Sewage Works SBI                         | Sewage treatment works with areas of lowland fen and lowland raised bog.                                                                                                                                                                                                                           | ~1.72km east                                      |
| Wervin Meadows LWS                                  | Neutral and marshy grassland with pond and ditches. A range of birds are known to use the site.                                                                                                                                                                                                    | ~1.73km southwest                                 |
| Leg O' Mutton Dam LWS                               | A disused industrial dam with aquatic, marsh and marginal habitats. The lake is surrounded by semi-natural woodland providing habitat for nationally, regionally and locally rare plant species. The site also provides breeding areas for several damselfly and dragonfly species.                | ~1.77km west                                      |
| Stockton Heath Quarry LWS                           | Citation has not been requested.                                                                                                                                                                                                                                                                   | ~1.8km southeast                                  |
| Coroners Wood SBI                                   | Ancient semi-natural woodland.                                                                                                                                                                                                                                                                     | ~1.82km southwest                                 |
| Ravensclough Marsh LWS                              | Wetland habitats and areas of marshy grassland. Notable vascular plants are present.                                                                                                                                                                                                               | ~1.86km southwest                                 |

| Site name                                 | Designated feature summary                                                                                                                                                                                                                                                             | Position relating to the Preliminary Order Limits |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Bostock Road Orchards LWS                 | Designated for the presence of traditional orchards, it consists of two distinct sites at Greenheyes Farm and Bank Farm.                                                                                                                                                               | ~1.9km southeast                                  |
| Redmoor Covert SBI                        | Large area of lowland deciduous woodland with small areas of grassland and open water.                                                                                                                                                                                                 | ~1.93km east                                      |
| Booth's Wood LWS                          | Deciduous plantation woodland with a stream and ditch network that runs through the woodland. A large pond in the south of the woodland is surrounded by rush pasture providing wetland habitat for a number of locally rare wetland species.                                          | ~1.93km northeast                                 |
| Tunstalls Farm LWS                        | A group of small agricultural fields with an extensive ditch and hedgerow network. A field is currently being developed into a species rich meadow and supports regionally and locally important species. The ponds and ditches provide habitat for water vole and great crested newt. | ~1.94km east                                      |
| Eccleston Top Dam LWS                     | A disused dam providing aquatic habitat for locally rare aquatic species. The dam is surrounded by acid and neutral grassland.                                                                                                                                                         | ~1.96km west                                      |
| Twenty Acre Wood LWS                      | Citation has not been requested.                                                                                                                                                                                                                                                       | ~1.97km northwest                                 |
| Malljurs Covert SBI                       | Area of lowland deciduous woodland.                                                                                                                                                                                                                                                    | ~1.99km east                                      |
| Sankey Brook LWS                          | Citation has not been requested.                                                                                                                                                                                                                                                       | ~2km north                                        |
| Veteran Ash Tree - Bank Farm, Bostock LWS | Veteran ash is present on the site.                                                                                                                                                                                                                                                    | ~2km southeast                                    |

*Habitats of Principal Importance, ancient woodland and habitat networks*

5.6.3 The desk study completed to date has identified several HPis within 2km of the Preliminary Order Limits as shown in **Table 5.12** and illustrated on **Figure 5.3**.

**Table 5.12 Current baseline – HPI within the Study Area**

| HPI                                               | Within Preliminary Order Limits? (Y/N) | Position of closest area if outside the Preliminary Order Limits |
|---------------------------------------------------|----------------------------------------|------------------------------------------------------------------|
| Coastal and floodplain grazing marsh              | Y                                      |                                                                  |
| Coastal saltmarsh                                 | Y                                      |                                                                  |
| Deciduous woodland                                | Y                                      |                                                                  |
| Lowland calcareous grassland                      | Y                                      |                                                                  |
| Lowland fens                                      | Y                                      |                                                                  |
| Lowland heathland                                 | N                                      | ~0.39km northwest                                                |
| Lowland meadows                                   | Y                                      |                                                                  |
| Lowland raised bog                                | Y                                      |                                                                  |
| Mudflats                                          | Y                                      |                                                                  |
| Open mosaic habitats on previously developed land | Y                                      |                                                                  |
| Purple moor grass and rush pastures               | N                                      | ~0.38km northwest                                                |
| Reedbeds                                          | N                                      | ~50m northeast                                                   |
| Traditional orchard                               | Y                                      |                                                                  |
| Upland hay meadow                                 | N                                      | ~0.52km southwest                                                |
| Woodland pasture and parkland                     | Y                                      |                                                                  |

5.6.4 Several parcels of ancient woodland have also been identified within the Preliminary Order Limits and the Study Area.

- 5.6.5 The following habitat network zones that have the potential to link existing areas of favourable habitat across a landscape through habitat restoration, creation or enhancement are present within the Preliminary Order Limits: network enhancement zone 1, network enhancement zone 2, fragmentation action zone and network expansion zone.

### *Habitats*

- 5.6.6 The dominant habitat throughout the Preliminary Order Limits is arable and grazed agricultural land bounded by hedgerows with scattered trees. Areas of denser vegetation, such as woodland or scrub, are present, some of which border linear features such as watercourses and railway lines. Industrial, commercial and residential areas are also present within and adjacent to the Preliminary Order Limits. Several waterbodies and watercourses are present throughout the Study Area including the River Mersey, the Manchester Ship Canal, the Trent and Mersey Canal and the River Weaver, as well as scattered smaller tributaries and ditches.
- 5.6.7 Further to the linear features referred to above, connectivity from the land within the Preliminary Order Limits is provided to the wider landscape through a network of hedgerows, agricultural ditches and open green spaces.
- 5.6.8 Major roads are also present, with both the M62 and M56 within the Preliminary Order Limits.

### *Waterbodies*

- 5.6.9 The Study Area includes designated sites that are highlighted for aquatic ecological features and that have been identified at this stage as those that are likely to have hydraulic linkages to the Preliminary Order Limits via surface water and/or groundwater. These sites are summarised in **Table 5.10**.
- 5.6.10 The Study Area includes those WFD surface waterbodies that are intersected by, and downstream of, the Preliminary Order Limits. **Chapter 7: Water Environment** sets out the ecological status of the 25 waterbodies that have drainage basins that are intercepted by the Preliminary Order Limits, including the relevant Reasons for Not Achieving Good status, as detailed in the Environment Agency's catchment data explorer database<sup>89</sup>.

### *Protected/notable species*

- 5.6.11 A high-level assessment of the habitats from aerial imagery and the results of preliminary field surveys (see **Table 5.9**) indicate that habitats within the Preliminary Order Limits are suitable for a variety of protected and notable species. This includes, but is not limited to:
- Habitats with potential to support foraging, commuting and roosting bats;

<sup>89</sup> Environment Agency (2021). Catchment Data Explorer. (online) Available at: <https://environment.data.gov.uk/catchment-planning/>. (Accessed 01 July 2022).

- waterbodies and terrestrial habitat with the potential to support great crested newt;
- habitats with potential to support badgers and their setts;
- watercourses and terrestrial habitat with the potential to support otters and their rest sites;
- watercourses suitable for water vole and their burrows;
- watercourses suitable for freshwater fish;
- habitats which may support white-clawed crayfish (*Austropotamobius pallipes*);
- habitats which may support wintering and breeding birds;
- habitats with the potential to support reptiles;
- habitats with the potential to support protected or notable invertebrate species/assemblages;
- habitats with the potential to support SPI such as brown hare (*Lepus europaeus*), west European hedgehog (*Erinaceus europaeus*) and common toad (*Bufo bufo*);
- veteran trees and notable plant species; and
- important hedgerows.

## Bats

- 5.6.12 The desk study identified 1,696 records within the Study Area. Species recorded include Brandt's bat (*Myotis brandti*), brown long-eared bat (*Plecotus auratus*), common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's bat (*Myotis daubentonii*), Nathusius's pipistrelle (*Pipistrellus nathusii*), Natterer's bat (*Myotis nattereri*), noctule bat (*Nyctalus noctula*), serotine bat (*Eptesicus serotinus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and whiskered bat (*Myotis mystacinus*). The nearest bat flight records are within the Preliminary Order Limits while the nearest known roost is ~70m to the northwest.
- 5.6.13 Large areas of open arable land are of limited suitability for most species of bat as they provide little in the way of foraging habitat. However, hedgerows along field boundaries, watercourses, parcels of grassland, woodland, tree lines and scrub dispersed throughout the Preliminary Order Limits provide linear and edge habitat features that are likely to be used by foraging and commuting bats although these are not unique habitats locally.
- 5.6.14 During the preliminary field surveys, a number of individual trees, blocks of woodland and buildings within the Preliminary Order Limits were noted to have suitability to support roosting bats.

## Great crested newt

- 5.6.15 A total of 390 great crested newt records have been identified within the Study Area, several of which are located within the Preliminary Order Limits. Waterbody desk-based searches and field surveys are still ongoing, and thus numbers of

waterbodies identified may increase (or decrease), approximately 600 ponds and 380 slow-flowing ditches have been identified so far using aerial imagery and OS mapping to date within the Study Area. These have the potential to be used by breeding great crested newt. Of these, approximately 573 ponds and 353 ditches will be subject to the DLL scheme while 27 ponds and 25 ditches are located within the St Helens area and will therefore be subject to survey and assessment.

- 5.6.16 Although the Study Area is dominated by largely unfavourable terrestrial habitat, namely arable and grazed pasture fields that are heavily grazed, areas of favourable habitat in the form of scrub, hedgerows, woodland, rough grassland and overgrown ditches bound these agricultural fields and are scattered throughout the landscape. These areas are suitable for foraging, dispersal, refuting and hibernating.

### *Otter and Water vole*

- 5.6.17 There are 45 records of otter within the Study Area. The nearest record is located within the Preliminary Order Limits in the River Mersey.
- 5.6.18 Main watercourses such as the River Mersey and the River Weaver that pass through the Study Area provide optimal habitat for foraging, commuting, resting and holt creation along with smaller tributaries where there is plentiful bankside cover such as the River Dane and River Bollin. Field ditches throughout the Study Area may provide commuting corridors within the local area, although this is limited where the ditches border expansive arable land given that suitable shelter is largely absent. Water quality within these ditches is variable and those that hold little, or no water are likely to lack significant fish (or other prey-species) populations, therefore reducing their suitability for otter. While otter surveys are currently ongoing, otter signs including possible resting sites and spraints have been noted within the Preliminary Order Limits close to and within Frodsham, Helsby and Ince Marshes LWS.
- 5.6.19 Twenty-eight water vole records were returned by the desk study. The nearest records are located within the Preliminary Order Limits in Frodsham, Helsby and Ince Marshes LWS. Two other LWSs within the Preliminary Order Limits are also designated for supporting water vole populations (Pendlebury Brook LWS and Sutton Manor LWS).
- 5.6.20 A variety of wetland habitats are located within the Preliminary Order Limits with the potential to support water vole including rivers, canals, tributaries, ditches, lowland fen and ponds. During preliminary field surveys, several ditches and tributaries were noted to have still or slow-flowing water, with riparian bankside vegetation and steep, earth banks, providing favourable habitat for burrow creation and foraging. Ditches noted to dry seasonally or those that are over-shaded by bankside scrub and trees are considered sub-optimal habitat, however, may potentially be used by water vole at certain times of year.
- 5.6.21 Water vole surveys centred around potential watercourse crossing points have identified signs of water vole in the form of droppings and possible burrows. To date, these signs have been identified within the Preliminary Order Limits that pass through Frodsham, Helsby and Ince Marshes LWS.

## Badger

- 5.6.22 There are 1,291 records of badger within Study Area, 98 of which are within the Preliminary Order Limits. Of the 98, 16 records relate to badger setts.
- 5.6.23 Suitable habitats for sett creation are present throughout the Preliminary Order Limits including along hedgerows, the banks and ditches and railway lines and within dense scrub and woodland. The habitats within the Preliminary Order Limits provide extensive opportunities for foraging including large areas of arable land (and margins), grasslands, woodland, and scrub, with a series of ditches and hedgerows providing connective habitat.
- 5.6.24 During preliminary field surveys, incidental sightings of badger activity have been noted within the Preliminary Order Limits in the form of latrines and footprints. Setts have also been recorded including an active sett on a wooded bank bordering an arable field to the north of Antrobus.

## Freshwater fish

- 5.6.25 Watercourses within the Study Area support both cyprinid and salmonid fish species (Apem 2007<sup>90</sup>). The desk study identified 178 fish records within the Study Area. Cyprinid fishes are generally more common within the Study Area and include roach (*Rutilus rutilus*), rudd (*Scardinius erythrophthalmus*), dace (*Leuciscus leuciscus*), chub (*Leuciscus cephalus*), bream (*Abramis brama*), tench (*Tinca tinca*), common carp (*Cyprinus carpio*), crucian carp (*Carassius carassius*), minnow (*Phoxinus phoxinus*), barbel (*Barbus barbus*) and gudgeon (*Gobio gobio*) as well as perch (*Perca fluviatilis*), pike (*Esox lucius*) and ruffe (*Gymnocephalus cernua*). Other common species include three-spined stickleback (*Gasterosteus aculeatus*), stone loach (*Barbatula barbatula*) and estuarine species including flounder (*Platichthys flesus*).
- 5.6.26 Species that are of notable biodiversity conservation importance that occur within a number of watercourses that cross the Preliminary Order Limits boundary include Atlantic salmon (*Salmo salar*), sea trout (*Salmo trutta morpha trutta*), brown trout (*Salmo trutta morpha fario*), herring (*Clupea harengus*), river lamprey (*Lampetra fluviatilis*), brook lamprey (*Lampetra planeri*), bullhead (*Cottus gobio*) and European eel (*Anguilla anguilla*), all of which are SPI and most of which have suffered population declines.

## Other freshwater fauna

- 5.6.27 Watercourses that cross the Study Area also support aquatic macrophyte and invertebrate assemblages, including populations of white-clawed crayfish (*Austropotamobius pallipes*). This legally protected species and SPI is known to occur on the Weaver/Dane and Bollin catchments (CWT<sup>91</sup>).

<sup>90</sup> Apem (2007). Manchester Ship Canal: Strategic Review of Fisheries. Report for United Utilities.

<sup>91</sup> Cheshire Wildlife Trust (2018). White-clawed crayfish – Local Biodiversity Action Plan. (online) Available from: <https://www.cheshirewildlifetrust.org.uk/sites/default/files/2018-06/White%20clawed%20crayfish.pdf>. (Accessed 23 November 2021).

## Birds

- 5.6.28 The desk study identified a range of key bird species from within the Search Area. Schedule 1 species records include little ringed plover, marsh harrier, barn owl, hobby and peregrine. The following Schedule 1 listed species have the potential to breed within the Study Area (Balmer *et al.*, 2013; Cheshire and Wirral Ornithological Society, 2008; and Smith *et al.*, 2021): quail (*Coturnix coturnix*), bittern, avocet (*Recurvirostra avosetta*), little ringed plover (*Charadrius dubius*), marsh harrier, barn owl, hobby, peregrine and kingfisher.
- 5.6.29 SPI species records include skylark (*Alauda arvensis*), scaup (*Aythya marila*), bittern, lesser redpoll (*carduelis cabaret*), linnet (*Carduelis cannabina*), twite (*Carduelis flavirostris*), hen harrier (*Circus cyaneus*), cuckoo (*Cuculus canorus*), Bewick's Swan (*Cygnus columbianus*), lesser spotted woodpecker (*Dendrocopos minor*), corn bunting (*Emberiza calandra*), yellowhammer (*Emberiza citrinella*), reed bunting (*Emberiza schoeniclus*), herring gull (*Larus argentatus*), black-tailed godwit, grasshopper warbler (*Locustella naevia*), common scoter, yellow wagtail (*Motacilla flava*), spotted flycatcher (*Muscicapa straita*), curlew, house sparrow (*Passer domesticus*), tree sparrow (*Passer montanus*), grey partridge (*Perdix perdix*), willow tit (*Poecile montanus*), marsh tit (*Poecile palustris*), dunnoek (*Prunella modularis*), bullfinch (*Pyrrhula pyrrhula*), starling (*Sturnus vulgaris*), song thrush (*Turdus philomelos*), ring ouzel (*Turdus torquatus*) and lapwing.
- 5.6.30 In addition, goldeneye (*Bucephala clangula*), pochard (*Aythya ferina*), swift (*Apus apus*), woodcock (*Scolopax rusticola*), merlin (*Falco columbarius*), mistle thrush (*Turdus viscivorus*), fieldfare (*Turdus pilaris*), tree pipit (*Anthus trivialis*), hawfinch (*Coccothraustes coccothraustes*) and greenfinch (*Chloris chloris*); all Birds of Conservation Concern (BoCC5) Red list species, were recorded as present (please note some BoCC5 Red list species are also SPI).
- 5.6.31 Data has been requested from the British Trust for Ornithology (BTO), Cheshire and Greater Manchester Raptor Study Groups, as well as the Cheshire Barn Owl Group and Cheshire and Wirral Ornithological Society (CAWOS) but has not been received to date.
- 5.6.32 Wintering bird surveys conducted by WSP during October 2020 to March 2021 inclusive (Cadent, 2021<sup>92</sup>), recorded a total of 115 bird species, of which six are qualifying species of the Mersey Estuary SPA, 18 were listed on Schedule 1 of the WCA, 19 were SPI in accordance with Section 41 of the NERC Act (2006)<sup>93</sup>, a further 26 species are Birds of Conservation Concern (BoCC) red listed, and 37 species BoCC amber listed. The six qualifying species of the Mersey Estuary SPA comprise shelduck, teal, pintail, golden plover, black-tailed godwit and redshank. Schedule 1 species recorded during the wintering bird surveys considered as having the potential to breed within the Study Area comprise garganey (*Anas querquedula*), bittern, kingfisher, peregrine, Cetti's warbler and bearded tit (*Panurus biarmicus*).

<sup>92</sup> Cadent. (2021). Hydrogen Pipeline - Wintering Bird Surveys. 14 May 2021.

<sup>93</sup> Some species can be listed on Schedule 1, be SPI and on either the BoCC red or amber list.

- 5.6.33 Wintering bird surveys undertaken by Wood between October 2021 and February 2022 recorded the following seven Mersey Estuary SPA qualifying species within the Study Area; shelduck, teal, pintail, golden plover, black-tailed godwit, dunlin and redshank. A further 35 waterbird assemblage species were also recorded (including other SPA-qualifying species comprising whooper swan, pink-footed goose, wigeon, oystercatcher and curlew). Only shelduck, teal, pintail, black-tailed godwit, redshank and shoveler were recorded in notable numbers, with distribution largely restricted to the Ince Marshes and a high tide roost site at Lordship Marsh (the latter site is potentially functionally linked to the SPA)<sup>94</sup>. Additionally with reference to Schedule 1 listed species, several barn owl nest boxes were identified across the Study Area as well as Cetti's warblers and kingfisher present in most of the areas surveyed with suitable habitat. A marsh harrier winter roost was also recorded within the Study Area, with up to ten individuals using the site. Schedule 1 listed merlin and peregrine were also recorded. Other notable species recorded during the winter waterbird surveys included: lesser spotted woodpecker and willow tit. Both species were recorded on Moore Nature Reserve LWS.
- 5.6.34 Interim results from the breeding Schedule 1 bird species surveys undertaken between April and July 2022 recorded the following Schedule 1 species (some of these species are also SPI) within the Study Area: quail, avocet, black-tailed godwit, Mediterranean gull (*Ichthyaetus melanocephalus*), marsh harrier, kingfisher, hobby, Cetti's warbler and common crossbill (*Loxia curvirostra*). Additionally, further barn owl nest boxes were identified within the Study Area as well as an osprey (*Pandion haliaetus*) nest platform (unused to date). Further SPI (some of these species are also BoCC5 Red listed) recorded within the Study Area comprised: skylark, lesser redpoll, linnet, cuckoo, yellowhammer, reed bunting, herring gull, curlew, grasshopper warbler, yellow wagtail, house sparrow, dunnock, bullfinch, starling, song thrush, ring ouzel and lapwing. The following BoCC5 Red list species were also recorded: swift, ringed plover, ruff, house martin, mistle thrush and greenfinch.

## Reptiles

- 5.6.35 A total of 285 reptile records have been identified by the desk study. Species include grass snake (*Natrix natrix*) and slow worm (*Anguis fragilis*). The nearest of these records is ~189m west of the Preliminary Order Limits.
- 5.6.36 The dominant habitats within the Preliminary Order Limits comprise arable and grazed agricultural land which is largely unsuitable for reptiles. However, arable field margins, hedgerows, dense scrub, woodland edge, and a network of ditches provide suitable habitat for reptiles with opportunities for basking, foraging, refuging and hibernating. Such habitat features are however isolated within the open agricultural landscape.

<sup>94</sup> Natural England (2015). Review and analysis of changes in waterbird use of the Mersey Estuary SPA, Mersey Narrows & North Wirral Foreshore pSPA and Ribble & Alt Estuaries SPA (NECR173). 27 May 2015. Annex II: Roost locations by species at a regional level. (online) Available at: <http://publications.naturalengland.org.uk/file/5495789449117696>. (Accessed 01 July 2022).

*SPI and other conservation-notable vertebrate species*

- 5.6.37 There are 650 records of five SPI and other conservation-notable species vertebrate species were identified within the 2km area of search, comprising:
- Brown hare (SPI): with the closest record within the Preliminary Order Limits;
  - common toad (SPI): with the closest record within the Preliminary Order Limits;
  - harvest mouse (*Micromys minutus*) (SPI): with the closest record located ~1.09km to the west of the Preliminary Order Limits;
  - polecat (*Mustela putorius*) (SPI): with the closest record within the Preliminary Order Limits; and
  - west European hedgehog (SPI): with the closest record within the Preliminary Order Limits.
- 5.6.38 During the preliminary field surveys to date, only brown hare has been recorded within the Preliminary Order Limits. Although Survey Area habitats could support SPI and other conservation-notable vertebrate species, the habitats are generally common and widespread in the wider landscape, and therefore land within the Preliminary Order Limits is not considered to support a unique assemblage of SPI and other conservation-notable vertebrate species in the local context. Considering the habitat types present, significant assemblages of SPI and other conservation-notable vertebrate species are unlikely to occur within the Preliminary Order Limits, but this would be confirmed in 2022 once the extended Phase 1 habitat survey has been completed for remaining land parcels which were inaccessible during surveys to date (subject to land access permission).

*SPI and other conservation-notable terrestrial and aquatic invertebrate species*

- 5.6.39 There are 1,282 records relating to 54 SPI and other conservation-notable species within the Study Area. SPIs located within the Preliminary Order Limits include autumnal rustic (*Eugnorisma glareosa*), blood-vein (*Timandra comae*), cinnabar (*Tyria jacobaeae*), dusky thorn (*Ennomos fuscantaria*), ear moth (*Amphipoea oculea*), ringlet (*Aphantopus hyperantus*), sallow (*Xanthia icteritia*), small phoenix (*Ecliptopera silaceata*), white ermine (*Spilosoma lubricipeda*) and white-letter hairstreak (*Satyrus w-album*).
- 5.6.40 Although habitats within the Survey Area could support SPI and other conservation-notable invertebrate species, the habitats are generally common and widespread in the wider landscape, and therefore land within the Preliminary Order Limits is not considered to support a unique assemblage of SPI and other conservation-notable invertebrate species in the local context. Considering the habitat types present, significant assemblages of SPI and other conservation-notable invertebrate species are unlikely to occur within the Preliminary Order Limits, but this would be confirmed in 2022 once the extended Phase 1 habitat survey has been completed for remaining land parcels which were inaccessible during surveys to date (subject to land access permission).

*SPI and other protected/conservation-notable plant species*

- 5.6.41 There are 362 records relating to 50 SPI and other conservation-notable species within the Study Area. SPI and other protected/conservation-notable plant species located within the Preliminary Order Limits include black poplar (*Populus nigra*), early marsh-orchid (*Dactylorhiza incarnata*), English bluebell, water-soldier (*Stratiotes aloides*), round-leaved mint (*Mentha suaveolens*), marsh-mallow (*Althaea officinalis*), common Valerian (*Valeriana officinalis*), field scabious (*Knautia arvensis*), lesser spearwort (*Ranunculus flammula*), ragged robin (*Lychnis flos-cuculi*), small cudweed (*Filago vulgaris*), tormentil (*Potentilla erecta*) and wild strawberry (*Fragaria vesca*).
- 5.6.42 Habitat within the Preliminary Order Limits is dominated by arable and improved fields. Only relatively isolated areas of grassland with higher species diversity and semi-natural woodland have been identified by preliminary field surveys so far that may potentially offer habitat suitable for conservation-notable plant species. However, in view of the limited connectivity and small size of habitat patches, significant assemblages of SPI and other protected/conservation-notable plant species are unlikely to occur within the Preliminary Order Limits, but this would be confirmed once the extended Phase 1 habitat survey has been completed for remaining land parcels which were inaccessible during surveys to date (subject to land access permission).

**Future baseline**

- 5.6.43 The future baseline is likely to remain relatively constant within the Preliminary Order Limits and to the various areas of search through the lifetime of the Project in most locations. This is because most land is in agricultural usage, typically in longer term use. Across some of the agricultural land, changes in farming policy may see further benefits for biodiversity and natural capital secured (e.g. hedgerow establishment and tree planting). However, these are likely to be relatively localised and unlikely to be implemented at scale prior to the construction phase for the Project, and thus would not be expected to affect the outcome of the assessment.
- 5.6.44 In the longer term it is possible that the range of some species may be altered due to climate change, with those species adapted to warmer climates likely to extend their ranges and those with cooler adaptations retreating northwards, though this is unlikely to occur at scale within the lifetime of the Project.
- 5.6.45 The future baseline for biodiversity is therefore unlikely to significantly alter to an extent that it would affect the outcome of the any assessment within this chapter.
- 5.6.46 Any potentially relevant changes to the baseline would be reviewed during the EIA process and, should any likely instances be identified, the implications will be considered on a case-by-case basis. An updated description of the potential future baseline will be provided in the ES, if required.

**5.7 Embedded environmental measures**

- 5.7.1 A range of environmental measures have been embedded into the Project as outlined in **Chapter 3: Approach to preparing the PEIR, Section 3.8**. As part of

the project design process, a number of embedded environmental measures are proposed to reduce the potential for impacts on biodiversity interests (see **Table 5.13**), and these, would be secured through CoCP Code of Construction Practice (CoCP) and a respective DCO Requirement. These will evolve over the development process as the EIA progresses and in response to consultation, they will be fed iteratively into the assessment process. These measures typically include those that have been identified as good or standard practice and include actions that would be undertaken to meet existing legislation requirements.

- 5.7.2 As there is a commitment to implementing these embedded environmental measures, and also to various standard sectoral practices and procedures, they are considered inherently part of the design of the Project and have, therefore, been considered in the scoping assessment (and are noted in **Table 5.14**).
- 5.7.3 General principles of these measures are summarised below in **Table 5.13**, followed by feature-specific measures (where relevant) described in **Table 5.14**. **Table 5.14** outlines how these embedded environmental measures will influence the biodiversity assessment.

**Table 5.13 Relevant generic biodiversity embedded environmental measures****Biodiversity embedded environmental measures**

**1. Biodiversity Net Gain (Enhancement):** BNG uplift above the baseline situation would be sought through the design process for the Project.

**2. Standard good practice:** The Project would be subject to standard good practice mitigation measures employed to avoid and minimise potential effects to habitats and species under the supervision of an appointed Project Ecologist. This would include (but not be exclusive to) buffer zones to key habitats and species, seasonally sensitive construction, minimising the removal of vegetation and considered location of works.

**3. Minimise land take and micro-site:** Detailed design would aim to minimise the land take for works and site (through micro-siting within the Limits of Deviation which will form part of the DCO works plans) those works away from the more important habitat and species features, particularly woodland, boundaries including ditches and hedgerows, as well as ponds and other wetland features, which would consequently limit effects on associated species interest. Where practicable, sensitive sites including SSSIs, LWSs, ancient woodland would be avoided when micro-siting the proposed working areas.

**4. Code of Construction Practice:** In line with good practice, an overarching Code of Construction Practice (CoCP) would ensure that any risk of impacts on biodiversity features arising from environmental changes from the Project e.g., airborne pollutants are rendered negligible by detailing methods for the employment of standard good practice measures. **This plan would be supported by a suite of linked and supporting documents**, with biodiversity preparing an Outline Biodiversity Mitigation Strategy (BMS).

**5. Sensitive vegetation removal:** Vegetation would be retained where possible. To avoid destruction of active nests, in any areas where vegetation clearance is required, such works would be undertaken outside the breeding bird season (outside March-August) where practicable. Where this is not practicable, vegetation removal would be undertaken under supervision and appropriately managed to remove the risk of damaging or destroying active nests, young or eggs. Suitable methods would also be used to ensure vegetation with potential to support other legally protected species (e.g. reptiles) is removed sensitively and in compliance with legal requirements.

## Biodiversity embedded environmental measures

**6. Maintaining habitat connectivity:** Habitat connectivity would be retained wherever possible by maintaining links within and to green corridors such as hedgerows and watercourses. Where effects on connectivity are unavoidable, it may be artificially supplemented by, for instance the creation of temporary brash hedges.

**7. Protection of ancient/veteran trees:** Where practicable, any ancient/veteran trees identified would be avoided by micro-siting the design. A suitable root protection zone (with reference to BS 5837<sup>95</sup>) would be identified and used to site infrastructure within the Preliminary Order Limits and/or alternative construction techniques would be used to protect the trees.

**8. Protection of retained habitats (essential mitigation):** The CoCP would include mapping illustrating the location of all retained areas of semi-natural habitat, as well as newly created habitats. Appropriate delineation would be installed around those retained habitat features within the construction area, to protect them from direct effects during the works. Such delineation would be designed to avoid isolation/obstruction of protected species as necessary.

**9. Management of invasive species:** The use of tried and tested invasive species control and biosecurity measures to avoid the spread of non-native invasive species and infested materials would be applied. Measures would include pre-works checks to identify the location of invasive non-native species; the establishment of exclusion zones to prevent the spread of such species; and the use of invasive non-native species management plans where work within exclusion zones is unavoidable.

**10. Habitat reinstatement:** Areas of temporary habitat loss would be reinstated, wherever practicable, following the completion of construction in each area. Wherever possible, reinstatement would be back to the type of habitat affected. Tree, hedgerow and shrub planting would be undertaken with an emphasis on reinstatement with native species-rich mixes in agreement with the landowner(s). Planting would be subject to an aftercare programme for an agreed period, during which any trees lost would be replaced.

**11. Sensitive access and enabling works:** At sensitive crossing locations (e.g. rivers), existing access routes would be used as far as possible and the width of any required working area reduced as far as practicable. If access upgrades are required on WFD watercourses, temporary bridges will be used in preference to culverts. Culverts may be used on smaller watercourses/ditches but these will be sensitively designed to affect the minimum length possible, retaining the natural bed of the watercourse/ditch.

<sup>95</sup> British Standard Institute (2012). BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. (online) Available at: <https://beta.bathnes.gov.uk/sites/default/files/2020-01/BS5837%202012%20Trees.pdf> (Accessed 01 July 2022).

## Biodiversity embedded environmental measures

Alternatively, they would be installed with the invert set below the natural bed level for a semi-natural bed to establish within the culvert. Habitat would be re-instated to pre-works condition or better following the removal of temporary bridges and culverts.

**12. Protection of watercourses:** A minimum stand-off from all watercourses and waterbodies would be adopted where possible on a location-specific basis. This would be in line with regional Environment Agency and IDB requirements, excluding required access crossing points. In line with good practice, pollution prevention plans will be drawn up to detail how ground and surface waters would be protected during construction and operation. These will include information on the storage of any fuels, oils and other chemicals and pollution incidence response planning. This is also discussed in **Chapter 7: Water Environment**.

**13. Sensitive lighting design:** A lighting design of all temporary and permanent lighting would be developed once contractors are appointed; however, the principles of lighting design will be detailed at the time of application and informed by the joint guidance provided by the Bat Conservation Trust and Institution of Lighting Professionals<sup>96</sup>. The lighting design will account for the potential effects on terrestrial ecology by taking measures to minimise lighting usage, minimise light spill, use most appropriate wave lengths of light and locate lighting in the most appropriate locations – this is to decrease the potential displacement effects on light sensitive fauna such as bats.

**14. Construction traffic speed limits:** Speed limits would be imposed on all construction haul roads and access tracks to minimise the risk of road traffic collisions with fauna such as badgers, otters, bats and barn owls.

**15. Pre-construction update surveys:** Pre-construction update surveys would be undertaken for protected species where relevant and necessary<sup>97</sup>.

<sup>96</sup> Institution of Lighting Professionals and Bat Conservation Trust (2018). Bats and artificial lighting in the UK. Bats and the Built Environment series (Guidance Note 08/18). (online) Available at <https://cdn.bats.org.uk/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?1542109349> (Accessed 01 July 2022).

<sup>97</sup> For example, to maintain up-to-date baseline data for known features to inform mitigation requirements and European Protected Species licensing, or to identify potential additional biodiversity features which may become established within the Study Area (i.e. mobile species).

Table 5.14 Summary of embedded environmental measures

| Biodiversity feature      | Potential changes and effects                                                                                                                                                | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance mechanism                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>Construction phase</b> |                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                   |
| <b>Habitats</b>           | <p>Permanent or temporary land take/land use change resulting in habitat loss or degradation.</p> <p>Fragmentation of habitats resulting in a reduction in connectivity.</p> | <p>2 – Standard good practice<br/> 3 – Minimise land take and micro-site<br/> 4 – CoCP (air quality management and dust suppression measures)<br/> 5 – Sensitive vegetation removal<br/> 6 – Maintaining habitat connectivity<br/> 8 – Protection of retained habitats<br/> 9 – Management of invasive species<br/> 10 – Habitat reinstatement<br/> 11 – Sensitive access and enabling works<br/> 12 – Protection of watercourses</p> <p><b>Feature specific measures:</b><br/> The Project layout would be optimised so that important habitats would be avoided where possible and alternative options considered. Any habitat reinstatement would be reflective of the type and extent of habitats affected by the Project where appropriate, as well as local conservation objectives and initiatives. The requirement for any habitat compensation would be identified through EclA process in line with the EclA mitigation hierarchy<sup>34</sup>.</p> <p>An Outline BMS would identify key habitats and where reinstatement and compensation is required. This would</p> | CoCP (which would be secured by DCO Requirement). |

| Biodiversity feature          | Potential changes and effects                                                                           | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Compliance mechanism                               |
|-------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
|                               |                                                                                                         | <p>complement planting specifications and requirements identified by the Arboricultural Impact Assessment.</p> <p>Standard Pollution Prevention Guidelines<sup>98</sup> (PPGs) would be followed for works adjacent to water-dependent habitats, which would be included within the CoCP.</p> <p>Also see embedded environmental measures within <b>Chapter 7: Water Environment</b>.</p> <p>Successful implementation of these measures would minimise the loss, damage or fragmentation of habitats during construction.</p>                                                               |                                                    |
| <b>Ancient /veteran trees</b> | Permanent or temporary land take/land use change resulting in ancient/veteran tree loss or degradation. | <p><b>General measures:</b></p> <ul style="list-style-type: none"> <li>2 – Standard best practice</li> <li>3 – Minimise land take and micro-site</li> <li>4– CoCP (air quality management and dust suppression measures)</li> <li>5 – Sensitive vegetation removal</li> <li>6 – Maintaining habitat connectivity</li> <li>7 – Protection of ancient/veteran trees</li> <li>8 – Protection of retained habitats</li> <li>9 – Management of invasive species</li> <li>10 – Habitat reinstatement</li> <li>11 – Sensitive access and enabling works</li> </ul> <p><b>Specific measures:</b></p> | CoCP (which would be secured by a DCO Requirement) |

<sup>98</sup> DEFRA (2019). Guidance: Pollution prevention for businesses. (online). Available at: <https://www.gov.uk/guidance/pollution-prevention-for-businesses> (Accessed 01 July 2022).

| Biodiversity feature | Potential changes and effects                                                                                                                                                                                                                                                                                                                                             | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Compliance mechanism                               |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
|                      |                                                                                                                                                                                                                                                                                                                                                                           | <p>Access and construction activities would be sited within the Preliminary Order Limits to avoid veteran trees wherever possible, and control measures to protect retained veteran trees such as root protection zones would be implemented during the construction phase to avoid damage to veteran trees. These specific measures would be included within the CoCP and based on the output of the Arboricultural Impact Assessment.</p> <p>Successful implementation of these measures would minimise the loss or damage of veteran trees.</p>                                                                                                                                                                                                                                                                                                 |                                                    |
| <b>Bats</b>          | <p>Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to roosts, kill/injure bats, and/or affect distribution.</p> <p>Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting bats, and/or disturbance to roosts.</p> | <p><b>General measures:</b></p> <ul style="list-style-type: none"> <li>2 – Standard best practice</li> <li>3 – Minimise land take and micro-site</li> <li>4– CoCP</li> <li>5 – Sensitive vegetation removal</li> <li>6 – Maintaining habitat connectivity</li> <li>8 – Protection of retained habitats</li> <li>10 – Habitat reinstatement</li> <li>11 – Sensitive access and enabling works</li> <li>13 – Sensitive lighting design</li> <li>14 – Construction traffic speed limits</li> <li>15 – Pre-construction update surveys</li> </ul> <p><b>Specific measures:</b></p> <p>A method statement and tool-box talk would be prepared that would include details of pre-construction verification surveys for bats and would describe the approach that would be followed to minimise the risk of contravening the Wildlife and Countryside</p> | CoCP (which would be secured by a DCO Requirement) |

| Biodiversity feature       | Potential changes and effects                                                                                                                                                                                                                                      | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Compliance mechanism                              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                            |                                                                                                                                                                                                                                                                    | <p>Act 1981 (as amended)<sup>11</sup> and The Conservation of Habitats and Species Regulations 2017 (as amended)<sup>8</sup>. Best practice guidelines would be followed during the works. These specific measures would be included within the CoCP or a Biodiversity Mitigation Strategy (BMS) that would form an appendix of the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of affecting bats, their roosts and activity, and contravening legislation.</p> <p>Where an EPS licence may be necessary to avoid contravention of legislation, this is considered as separate mitigation within the preliminary assessment in <b>Section 5.11</b>.</p> |                                                   |
| <b>Great crested newts</b> | Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to hibernacula/refugia/breeding habitat/terrestrial habitat, kill/injure GCN, and/or affect distribution. | <p><b>General measures:</b></p> <ul style="list-style-type: none"> <li>2 – Standard best practice</li> <li>3 – Minimise land take and micro-site</li> <li>4 - CoCP</li> <li>5 – Sensitive vegetation removal</li> <li>6 – Maintaining habitat connectivity</li> <li>8 – Protection of retained habitats</li> <li>10 – Habitat reinstatement</li> <li>11 – Sensitive access and enabling works</li> <li>15 – Pre-construction update surveys</li> </ul> <p><b>Specific measures:</b></p> <p>The Project will join a Natural England-led great crested newt DLL scheme, in districts where it is currently available. This</p>                                                                 | CoCP (which will be secured by a DCO Requirement) |

| Biodiversity feature | Potential changes and effects | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compliance mechanism |
|----------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
|                      |                               | <p>recommends the non-mandatory employment of standard best practice Reasonable Avoidance Measures.</p> <p>In St Helens (where the scheme is not live at present), a method statement and tool-box talk would be prepared detailing the required approach to minimise the risk of contravening the Wildlife and Countryside Act 1981 (as amended)<sup>11</sup> and The Conservation of Habitats and Species Regulations 2017 (as amended)<sup>8</sup>. Best practice guidelines would be followed during the works. Removal of suitable habitat would be designed to avoid the risk of injury to great crested newts, through measures such as timing ground works to avoid the hibernation period and implementing phased removal of habitat. Construction and reinstatement along the Project would be progressive and designed to avoid isolating or fragmenting great crested newt habitat. These specific measures would be included within the CoCP or a BMS that would form an appendix of the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of affecting great crested newts and their habitats, and contravening legislation.</p> <p>Where an EPS licence may be necessary to avoid contravention of legislation, this is considered as separate mitigation within the preliminary assessment in <b>Section 5.11</b>.</p> |                      |

| Biodiversity feature | Potential changes and effects                                                                                                                                                                                                                                                                                                                                              | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compliance mechanism                               |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Otter                | <p>Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to holts, kill/injure otters, and/or affect distribution.</p> <p>Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting otter, and/or disturbance to holts.</p> | <p><b>General measures:</b></p> <ul style="list-style-type: none"> <li>2 – Standard best practice</li> <li>3 – Minimise land take and micro-site</li> <li>4 - CoCP</li> <li>5 – Sensitive vegetation removal</li> <li>6 – Maintaining habitat connectivity</li> <li>8 – Protection of retained habitats</li> <li>9 – Management of invasive species,</li> <li>10 – Habitat reinstatement</li> <li>11 – Sensitive access and enabling works</li> <li>12 – Protection of watercourses</li> <li>13 – Sensitive lighting design</li> <li>14 – Construction traffic speed limits</li> <li>15 – Pre-construction update surveys</li> </ul> <p><b>Specific measures:</b></p> <p>A method statement and tool-box talk would be prepared to minimise the risk of contravening the Wildlife and Countryside Act 1981 (as amended)<sup>11</sup> and The Conservation of Habitats and Species Regulations 2017 (as amended)<sup>8</sup>. Best practice guidelines would be followed during the works including making all contractors aware of the potential presence of otters, and where practicable, avoiding trenches uncovered overnight or leaving an escape plank/ramp if excavations cannot be covered. Any obvious mammal trails would be kept clear of obstruction. Night-time working would be avoided close to sensitive areas where possible, and site lighting would be designed to minimise disturbance of nocturnal fauna. All works where practicable would be undertaken between dawn and dusk. A pre-works</p> | CoCP (which would be secured by a DCO Requirement) |

| Biodiversity feature | Potential changes and effects                                                                                                                                                                                                                                                                                                                                                           | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Compliance mechanism                              |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                      |                                                                                                                                                                                                                                                                                                                                                                                         | <p>check for holts and resting sites would be undertaken at each watercourse crossing location. These specific measures would be included within the CoCP or a BMS that would form an appendix of the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of affecting otters, their rest sites/habitats, and activity, and contravening legislation.</p> <p>Where an EPS licence may be necessary to avoid contravention of legislation, this is considered as separate mitigation within the preliminary assessment in <b>Section 5.11</b>.</p>                                                                                       |                                                   |
| <b>Water vole</b>    | <p>Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to burrows, kill/injure water vole, and/or affect distribution.</p> <p>Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting water vole, and/or disturbance to burrows.</p> | <p><b>General measures:</b></p> <ul style="list-style-type: none"> <li>2 – Standard best practice</li> <li>3 – Minimise land take and micro-site</li> <li>4 - CoCP</li> <li>5 – Sensitive vegetation removal</li> <li>6 – Maintaining habitat connectivity</li> <li>8 – Protection of retained habitats</li> <li>9 – Management of invasive species</li> <li>10 – Habitat reinstatement</li> <li>11 – Sensitive access and enabling works</li> <li>12 – Protection of watercourses</li> <li>13 – Sensitive lighting design</li> <li>14 – Construction traffic speed limits</li> <li>15 – Pre-construction update surveys</li> </ul> <p><b>Specific measures:</b></p> | CoCP (which will be secured by a DCO Requirement) |

| Biodiversity feature | Potential changes and effects                                                                                                                                                                                               | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Compliance mechanism                              |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                      |                                                                                                                                                                                                                             | <p>A method statement and tool-box talk would be prepared detailing the required approach to minimise the risk of contravening the Wildlife and Countryside Act 1981 (as amended)<sup>11</sup>. Best practice guidelines would be followed during the works. This includes pre-works check and avoidance of active burrows if present. All site infrastructure and activities (with the exception of watercourse crossing points) would be located at least 5m from watercourses wherever possible to minimise disturbance of water voles and their burrows. These specific measures would be included within the CoCP or an BMS that would form an appendix of the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of affecting water voles, their burrows/habitats, and contravening legislation.</p> <p>Where a protected species licence may be necessary to avoid contravention of legislation, this is considered as separate mitigation within the preliminary assessment in <b>Section 5.11</b>.</p> |                                                   |
| <b>Reptiles</b>      | Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to hibernacula/refugia/commuting and foraging habitat, kill/injure | <p><b>General measures:</b></p> <ul style="list-style-type: none"> <li>2 – Standard best practice</li> <li>3 – Minimise land take and micro-site</li> <li>4 - CoCP</li> <li>5 – Sensitive vegetation removal</li> <li>6 – Maintaining habitat connectivity</li> <li>8 – Protection of retained habitats</li> <li>10 – Habitat reinstatement</li> <li>11 – Sensitive access and enabling works</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CoCP (which will be secured by a DCO Requirement) |

| Biodiversity feature | Potential changes and effects                                                                                 | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Compliance mechanism                              |
|----------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                      | reptiles, and/or affect distribution.                                                                         | <p>15 – Pre Construction update surveys</p> <p><b>Specific measures:</b><br/>A method statement and tool-box talk would be prepared to avoid contravening the Wildlife and Countryside Act 1981 (as amended)<sup>11</sup>. Best practice guidelines would be followed during the works. Removal of suitable habitat would be designed to avoid the risk of injury to reptiles, through measures such as the gradual removal of habitat to displace reptiles in to adjoining habitats, and timing ground works to avoid the reptile hibernation period in areas where there is potential for hibernating reptiles to occur. If reptile surveys are required to address significant effects where good reptile populations occur, capture and translocation to high quality habitats (e.g. with hibernacula, compost heaps, log/brush piles and basking areas) would be carried out if required. Construction along the Project would be progressive and designed to avoid isolating or fragmenting reptile habitat. These specific measures would be included within the CoCP or a BMS that would form an appendix of the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of affecting reptiles and ensure compliance with legislation.</p> |                                                   |
| <b>Badger</b>        | Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat | <p><b>General measures:</b><br/>2 – Standard best practice<br/>3 – Minimise land take and micro-site<br/>4 - CoCP</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CoCP (which will be secured by a DCO Requirement) |

| Biodiversity feature | Potential changes and effects                                                                                                                                                                                                                                          | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance mechanism |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
|                      | <p>loss or degradation, potential loss/damage to setts, kill/injure badger, and/or affect distribution.</p> <p>Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting, resting badger, and/or disturbance to setts.</p> | <p>5 – Sensitive vegetation removal<br/>6 – Maintaining habitat connectivity<br/>8 – Protection of retained habitats<br/>10 – Habitat reinstatement<br/>11 – Sensitive access and enabling works<br/>13 – Sensitive lighting design<br/>14 – Construction traffic speed Limits<br/>15 – Pre-construction update surveys</p> <p><b>Specific measures:</b><br/>A method statement and tool-box talk would be prepared that would include details of pre-construction surveys to check on the presence of badgers and the approach that would be followed to minimise the risk of contravening the Protection of Badgers Act 1992<sup>12</sup>. Access and construction activities would be micro-sited where possible to avoid impacts on badgers and their setts. Measures would include making all contractors aware of the potential presence of badgers, minimising artificial lighting during the hours of darkness, and avoiding leaving trenches uncovered overnight or leaving an escape plank/ramp if excavations cannot be covered in areas where badgers potentially occur. Any obvious mammal trails would be kept clear of obstruction. These specific measures would be included within the CoCP or a BMS that would form an appendix of the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of affecting badgers and their setts and contravening legislation.</p> |                      |

| Biodiversity feature                                                                                                                                                                           | Potential changes and effects                                                                                                                                                                                                                                                                                                                                                                                | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Compliance mechanism                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Where a protected species licence may be necessary to avoid contravention of legislation, this is considered as separate mitigation within the preliminary assessment in <b>Section 5.11</b> . |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |
| <b>Nesting birds (including Schedule 1 species)</b>                                                                                                                                            | <p>Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to nests, kill/injure nesting birds, and/or affect distribution.</p> <p>Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting nesting birds, and/or disturbance to nesting Schedule 1 birds.</p> | <p><b>General measures:</b></p> <ul style="list-style-type: none"> <li>2 – Standard best practice</li> <li>3 – Minimise land take and micro-site</li> <li>4 - CoCP</li> <li>5 – Sensitive vegetation removal</li> <li>6 – Maintaining habitat connectivity</li> <li>8 – Protection of retained habitats</li> <li>10 – Habitat reinstatement</li> <li>11 – Sensitive access and enabling works</li> <li>13 – Sensitive lighting design</li> <li>14 – Construction traffic speed limits</li> <li>15 – Pre-construction update surveys</li> </ul> <p><b>Specific measures:</b></p> <p>Where possible, vegetation clearance would be timed to avoid nesting bird season (that is March – August inclusive), otherwise nesting bird checks would be undertaken by a suitably qualified ecologist and avoidance of active nests may be necessary. The construction works programme would incorporate and account for all Schedule 1 species nests and avoid, amend or reduce works during sensitive periods i.e. breeding season. Where works are unavoidable during the nesting bird season, appropriate control measures would be followed including pre-works surveys for nests. If a nest is</p> | CoCP (which will be secured by a DCO Requirement) |

| Biodiversity feature                                                                                                                      | Potential changes and effects                                                                                                                                                       | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compliance mechanism                               |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
|                                                                                                                                           |                                                                                                                                                                                     | <p>found, measures would be implemented appropriate to the species and associated level of protection, and may include a protective buffer, a behavioural method statement with ecological monitoring, and if necessary, suitable screening around working areas to avoid significant human disturbance. These specific measures would be included within the CoCP or a BMS that would form an appendix of the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of affecting nesting birds and disturbing Schedule 1 species, and contravening legislation (Wildlife and Countryside Act 1981 (as amended)<sup>11</sup>).</p>         |                                                    |
| <b>All other species identified within the baseline (including legally protected species, SPI and other conservation-notable species)</b> | Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, kill/injure species, and/or affect distribution. | <p><b>General measures:</b></p> <ul style="list-style-type: none"> <li>2 – Standard best practice</li> <li>3 – Minimise land take and micro-site</li> <li>4 – CoCP</li> <li>5 – Sensitive vegetation removal</li> <li>6 – Maintaining habitat connectivity</li> <li>8 – Protection of retained habitats</li> <li>9 – Management of invasive species,</li> <li>10 – Habitat reinstatement</li> <li>11 – Sensitive access and enabling works</li> <li>12 – Protection of watercourses</li> <li>13 – Sensitive lighting design</li> <li>14 – Construction traffic speed limits</li> <li>15 – Pre-construction update surveys</li> </ul> <p><b>Specific measures:</b></p> | CoCP (which would be secured by a DCO Requirement) |

| Biodiversity feature                                       | Potential changes and effects                                                                | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Compliance mechanism                               |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
|                                                            |                                                                                              | <p>A general ecological method statement would outline ecological good practice measures to minimise impacts to all other species and their habitats. The ecological method statement would be briefed to site personnel through a tool-box talk to ensure site activities are conducted with awareness and sensitively for biodiversity. These specific measures would be included within the CoCP or a BMS that would form an appendix of the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of affecting these species and contravening legislation and policy.</p> <p>Where a protected species licence may be necessary to avoid contravention of legislation, this is considered as separate mitigation within the preliminary assessment in <b>Section 5.11</b>.</p> |                                                    |
| <b>All species and habitats identified in the baseline</b> | Changes in air quality resulting in damage to habitats and/or species through excessive dust | <p><b>General measures:</b><br/>4 – CoCP (dust control measures)</p> <p><b>Specific measures:</b><br/>Dust control measures have been assessed in <b>Chapter 9: Air Quality</b> and would be implemented during the construction phase of work. These specific measures would be included within the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of dust damage and ensure compliance with legislation and policy.</p>                                                                                                                                                                                                                                                                                                                                                   | CoCP (which would be secured by a DCO Requirement) |

| Biodiversity feature                                       | Potential changes and effects                                                                                                          | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Compliance mechanism                                      |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| <b>All species and habitats identified in the baseline</b> | Pollution events resulting in damage to habitats and/or species through pollution (terrestrial and aquatic)                            | <p><b>General measures:</b><br/>           4 – CoCP (dust control measures)<br/>           12 – Protection of watercourses</p> <p><b>Specific measures:</b><br/>           Pollution prevention control measures would be detailed in a method statement and implemented during the construction phase to avoid damage to habitats/species. Construction practices would comply with the Environment Agency's PPGs<sup>98</sup> with a view to preventing the pollution of ground and surface water. <b>Chapter 7: Water Environment</b> details further measures. These specific measures would be included within the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of damage through pollution and ensure compliance with legislation and policy.</p> | CoCP (which would be secured by a DCO Requirement)        |
| <b>Operational phase</b>                                   |                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                           |
| <b>All species identified in the baseline</b>              | Increased noise and vibration, resulting in disturbance to foraging, commuting, resting species, and/or disturbance to resting places. | <p><b>General measures:</b><br/>           2 – Standard best practice</p> <p><b>Specific measures:</b><br/>           Noise control measures have been assessed in <b>Chapter 10: Noise and Vibration</b>. These would include maintaining buffer distances to sensitive receptors, use of best technology, dampers on vibrating or noise emitting equipment, timing of</p>                                                                                                                                                                                                                                                                                                                                                                                                                 | Works Plans (which would be secured by a DCO Requirement) |

| Biodiversity feature                          | Potential changes and effects                                                                                                                                               | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Compliance mechanism                                                                                  |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|                                               |                                                                                                                                                                             | works. These specific measures would be included within the CoCP and / or Works Plans.<br><br>Successful implementation of these measures would minimise the risk of disturbance and contravening legislation.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                       |
| <b>All species identified in the baseline</b> | Increased light resulting in disturbance to foraging, commuting species, and/or disturbance to resting places.                                                              | <p><b>General measures:</b><br/>2 – Standard best practice<br/>13 – Sensitive lighting design</p> <p><b>Specific measures:</b><br/>Measures to address impacts from lighting would be considered in accordance with best practice guidance and would be included within the CoCP or a BMS that would form an appendix of the CoCP.</p> <p>Successful implementation of these measures would minimise the risk of affecting features, and contravening legislation.</p> <p>Where an EPS licence may be necessary to avoid contravention of legislation, this is considered as separate mitigation within the preliminary assessment in <b>Section 5.11</b>.</p> | Outline Landscape Mitigation Plan (OLMP) or Works Plans (which would be secured by a DCO Requirement) |
| <b>All species identified in the baseline</b> | Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to resting places, | <p><b>General measures:</b><br/>2 – Standard best practice<br/>3 – Minimise land take and micro-site<br/>5 – Sensitive vegetation removal<br/>6 – Maintaining habitat connectivity<br/>8 – Protection of retained habitats</p>                                                                                                                                                                                                                                                                                                                                                                                                                                 | Works Plans (which would be secured by a DCO Requirement)                                             |

| Biodiversity feature | Potential changes and effects                    | Embedded environmental measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Compliance mechanism |
|----------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
|                      | kill/injure species, and/or affect distribution. | <p>10 – Habitat reinstatement<br/>11 – Sensitive access and enabling works</p> <p><b>Specific measures:</b><br/>Any vegetation clearance associated with the operation of the Project would be subject to the relevant surveys being undertaken by a suitably qualified person to inform mitigation requirements, which would be applied according to relevant best practice at that time.</p> <p>Successful implementation of these measures would minimise the risk of disturbance and contravening legislation.</p> |                      |

## 5.8 Scope of the assessment

### Overview

- 5.8.1 The scope has been refined as the project design has evolved and responds to feedback received to date as set out in **Section 5.3**. As outlined in Planning Inspectorate Advice Note Seven<sup>99</sup>, information presented in the PEIR is preliminary, therefore this scope will continue to be reviewed and will be further refined as the Project evolves, and as a result of ongoing engagement and consultation.
- 5.8.2 The starting point for defining the scope of the biodiversity assessment was to use the baseline data collected through the desk study and field surveys undertaken to date (see **Section 5.6**) to determine which of the identified ecological features are 'important'. Following CIEEM guidance<sup>2</sup>, the importance of each ecological feature was determined using a geographic scale (see **Table 5.15**). The importance of the ecological features has been described in relation to UK legislation and policy and regarding the extent of habitat or size of population that may be significantly affected by the Project.
- 5.8.3 The importance of ecological features can therefore differ from that which would be conferred solely by legislative protection or identification as a conservation notable species. For example, house sparrow is important at a national level (in policy terms) because it is a SPI and features on the BoCC Red list<sup>50</sup>. However, a small population that could be affected by a development might be assessed as only being of local importance due to the large, albeit declining, UK population (in excess of five million pairs). Similarly, a small length of hedgerow (an HPI), even if deemed to be 'Important' with regard to the Hedgerow Regulations<sup>14</sup>, is unlikely to be considered to have greater than 'local' importance due to the extent of this habitat type across a given county.
- 5.8.4 Wherever possible, information regarding the extent and population size, population trends and distribution of the ecological features was used to inform their categorisation and determine their importance at the project level. Where detailed criteria or contextual data were not available at this stage of the Project, professional judgement was used to determine importance.

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<sup>99</sup> The Planning Inspectorate (2020). Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements. Bristol: The Planning Inspectorate.

Table 5.15 Defining importance of ecological features

| Geographic context of importance    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>International or European</b>    | <p>National site network constituents including SPAs, SACs, candidate SACs and Sites of Community Importance (SCI). Potential SPAs (pSPA), possible SACs (pSACs), Ramsar Sites (designated under international convention) and proposed Ramsar Sites are also considered in the same manner in accordance with national planning policy.</p> <p>Areas of habitat or populations of species which meet the published selection criteria based on discussions with Natural England and field data collected to inform the EclA for designation as a European site, but which are not themselves currently designated at this level.</p>                                                                                                                                                    |
| <b>National (UK context)</b>        | <p>A nationally designated site including SSSIs and NNRs.</p> <p>Areas (and the populations of species which inhabit them) which meet the published selection criteria guidelines for selection of biological SSSIs but which are not themselves designated based on field data collected to inform the EclA, and in consultation with Natural England.</p> <p>SPIs and HPIs, Red listed and legally protected species that are not addressed directly in Part 2 of the “Guidelines for Selection of Biological SSSIs”<sup>100</sup> but can be determined to be of national importance using the principles described in Part 1 of the guidance.</p> <p>Areas of ancient woodland, for example woodland listed within the Ancient Woodland Inventory and ancient and veteran trees.</p> |
| <b>Regional (Northern England)</b>  | <p>Regularly occurring HPI or populations of SPI, Red listed and legally protected species may be of regional importance in the context of published information on population size and distribution.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>County (Lancashire/Cheshire)</b> | <p>LNRS and non-statutory designated sites including LWSs.</p> <p>Areas which, based on field data collected to inform the EclA, meet the published selection criteria for those sites listed above (for habitats or species, including those listed in relevant Local Biodiversity Action Plans) but which are not themselves designated.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Local</b>                        | <p>HPI and SPI, Red listed and legally protected species that based on their extent, population size, quality and so on are determined to be at a lesser level of importance than the geographic contexts above.</p> <p>Common and widespread semi-natural habitats occurring within the Study Area in proportions greater than may be expected in the local context.</p>                                                                                                                                                                                                                                                                                                                                                                                                                |

<sup>100</sup> JNCC (2019). Guidelines for Selection of SSSI: Part 2. (online) Available at: <https://jncc.gov.uk/our-work/guidelines-for-selection-of-sssis/#part-2-habitat-chapters> (Accessed 01 July 2022).

| Geographic context of importance | Description                                                                                                                                                                                                                                                |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  | Common and widespread native species occurring within the Study Area in numbers greater than may be expected in the local context.                                                                                                                         |
| <b>Negligible</b>                | Common and widespread semi-natural habitats and species that do not occur in levels elevated above those of the surrounding area.<br>Areas of heavily modified or managed land uses (for example, hard standing used for car parking, as roads and so on.) |

- 5.8.5 Where protected species are present and there is the potential for a breach of the legislation, those species are considered to be ‘important’ features. Except for such species receiving specific legal protection, or those subject to legal control (for example, invasive species), all ecological features determined to be important at negligible level are scoped out of the assessment. This approach is consistent with that described in CIEEM guidance<sup>2</sup>. Specific justification for exclusion of each of these ecological features is provided in **Appendix 5A**.
- 5.8.6 Legally protected species and ecological features that are of sufficient importance that effects upon them as a result of the development of the Project could be significant, were then taken through to the next stage of the scoping assessment (see **Section 5.8.19 Potential features**). Through an understanding of the activities associated with the Project and the resulting environmental change, it is possible to identify ecological features that may be subject to potentially significant effects (see **Section 5.8.23 Likely significant effects**). To identify such ecological features, all the activities and consequent environmental changes associated with the construction and operation of the Project have been considered. Given the ongoing design process, at this stage of the Project the environmental changes have been considered in broad categories only. Wherever there is uncertainty as to the potential level of effect or the occurrence of a particular ecological feature, a precautionary approach has been taken.

## Spatial scope

- 5.8.7 The spatial scope of the assessment of biodiversity covers the area of the Project contained within the Preliminary Order Limits, together with the Zols that have formed the basis of the Study Area described in **Section 5.4**.
- 5.8.8 The construction and operation phases of the Project may result in the following environmental changes that could significantly affect ecological features:
- **Permanent or temporary land take/land use change** (resulting in habitat loss or degradation and/or loss of fauna);
  - **fragmentation of habitats** (resulting in a reduction in connectivity);
  - **increased noise, vibration, light and movement levels** (resulting in disturbance/displacement/loss of fauna);

- **changes in hydrology** (resulting in the effects of habitat loss or degradation and/or loss of fauna);
- **changes in air quality** (e.g. dust or vehicle emissions resulting in habitat degradation);
- **pollution events** (including the liberation of sediments and chemicals resulting in habitat loss or degradation and/or loss of fauna); and
- **introduction of invasive non-native species (INNS)** (resulting in habitat degradation).

- 5.8.9 Key to establishing which environmental changes may result in likely significant effects, is the determination of a Zol for each important ecological feature identified. Zols differ depending on the type of environmental change (i.e. the change from the existing baseline) as a result of the Project and the ecological feature being considered.
- 5.8.10 The most straightforward Zol to define is the area affected by land-take and direct land-use changes associated with the Project. This Zol is the same for all affected ecological features.
- 5.8.11 By contrast, for each environmental change that can extend beyond the area affected by land-take and land-use change (e.g., increased noise associated with construction activities within the land-take area), the Zol may vary between ecological features, dependent upon their sensitivity to the change and the precise nature of the change. For example, a water vole might only be disturbed by noise generated very close to its burrow, while nesting marsh harrier might be disturbed by noise generated at a much greater distance, and other species (e.g. many invertebrates) may be unaffected by changes in noise. In view of these complexities, the definition of the Zol that extends beyond the land-take area was based upon professional judgement informed (as far as possible) by a review of published evidence (e.g. disturbance criteria for various species) and discussions with the technical specialists who are working on other chapters of the ES.
- 5.8.12 The Zols for each broad environmental change are specified below. Due to the level of information currently available for this preliminary assessment, the Zols have been applied broadly to be precautionary:
- **Permanent or temporary land take/land use change** – Zol within the Preliminary Order Limits for habitats and sedentary species; mobile species may be affected beyond that if land within the Preliminary Order Limits overlaps their typical home-ranges;
  - **fragmentation of habitats** – Zol within the Preliminary Order Limits for habitats and sedentary species; mobile species may be affected beyond that if land within the Preliminary Order Limits overlaps their typical home-ranges;
  - **increased noise, vibration, light and movement levels** – Zol for sensitive species is up to 500m from the construction works, noting that for mobile features of designated sites this is related to the species' habitat use and associated foraging home range distance, as opposed to designation boundary;

- **changes in hydrology** – Zol for sensitive habitats and/or species is within the sensitive surface and ground water features described within **Chapter 7: Water Environment**;
- **changes in air quality** – Zol for sensitive habitats is up to 200m (50m for dust and 200m for traffic emissions) from the construction works;
- **pollution events** – Zol for habitats and species is up to 500m from the Preliminary Order Limits, or further if the source and the ecological feature are directly linked via the river system; and
- **introduction of INNS** – Zol for habitats and species is up to 500m from the Preliminary Order Limits, or further if the source and the ecological feature are directly linked via the river system.

5.8.13

Each Zol takes into account measures which have been implemented to reduce effects such as the avoidance of potentially significant effects through the design process as well as standard construction best practice measures (as tried and trusted). When scoping in or out ecological features from further assessment, embedded environmental measures (see **Section 5.7**) associated with general good practice have been taken into account (e.g. dust suppression, appropriately scheduled vegetation removal and so on) and referenced in **Appendix 5A** where appropriate.

5.8.14

The following environmental changes are scoped out for all ecological features.

- **Changes in hydrology** – **Chapter 7: Water Environment** does not identify any notable changes and thus resulting likely significant effects on the hydrological regimes across designated biodiversity sites or water-dependent habitats due to construction or operational activities associated with the Project. Therefore, the ecological features that these designated biodiversity sites and habitats support would also not be subject to likely significant effects.
- **Changes in air quality** – **Chapter 9: Air Quality** does not identify any likely significant effects as a result of traffic movements and plant during construction or operational activities. The risk of traffic related emissions and dust deposition resulting from construction or operational activities would be controlled via the implementation of embedded environmental measures (see **Section 5.7** and **Chapter 9: Air Quality**). These measures would be effective in negating the risk to ecological features.
- **Pollution events** – The risk of pollution from construction and operation activities associated with the Project will be controlled via the implementation of embedded environmental measures (see **Section 5.7** and **Chapter 7: Water Environment**). These measures would be effective in negating the risk to ecological features.
- **Introduction of invasive non-native species** - The risk of spreading non-native invasive species across and beyond the Preliminary Order Limits from increased movement of traffic and construction or operational activities associated with the Project, would be controlled via the implementation of embedded environmental measures (see **Section 5.7**). These measures would be effective in negating the risk to ecological features.

- **Increased vehicle movement levels** - Death or injury of fauna due to the increased movement of traffic of construction and operational vehicles and plant, are scoped out based on the implementation of speed limits on all construction haul roads and access tracks that would be employed. (see **Section 5.7** and **Chapter 11: Traffic and Transport**). These measures would be effective in negating the risk to ecological features.

5.8.15 Ecological features which have been scoped in or out of the assessment are detailed in **Appendix 5A**. A preliminary assessment of effects is detailed in **Section 5.11** for each of those ecological features that are scoped into the assessment (i.e. those of sufficient importance occurring within a relevant ZoI that could be significantly affected).

## Temporal scope

5.8.16 The temporal scope of the assessment of biodiversity is consistent with the period over which the Project would be carried out and covers the changes in construction and operational period as appropriate.

5.8.17 The assessment has been based on the construction programme set out in **Chapter 2: The Project**. Construction is expected to commence in 2024 with site establishment, pipeline construction 2025 and 2025 and commissioning in 2027. The Project would be fully operational by late 2027 or early 2028.

5.8.18 Decommissioning of the Project would likely involve removing the hydrogen and leaving the pipeline in situ and avoiding removal and associated potential environmental effects. The design life of the pipeline and HAGIs is 40 years but it is anticipated that the actual life of the pipeline could extend well over 40 years depending on its condition, as over time parts are likely to be refurbished or replaced through maintenance activities. If decommissioning is required at this point in time, then the environmental effects associated with the decommissioning phase are expected to be limited and localised, and in the main, of a similar level to those reported for the operational phase works. The decommissioning is anticipated to take the same amount of time as construction (see **Chapter 2: The Project**). Where necessary, Method Statements would be developed and employed that reflect the legislation and biodiversity conditions in the Preliminary Order Limits prevalent at that time to ensure that no significant effects or legal breaches occur.

5.8.19 Therefore, the operational phase assessment would be applicable to the decommissioning phase and decommissioning effects are not discussed further in this chapter.

## Potential features

5.8.20 **Table 5A.1** in **Appendix 5A** identifies the ecological features that are relevant to the assessment because they are either legally protected or of sufficient biodiversity importance that an effect on them could be significant, and which could be affected by the Project (i.e. occur or potentially occur within the Study Area). A justification is provided for any ecological features that are scoped out of further assessment because they are assessed as being of insufficient importance

for potential effects to be significant. The ecological features identified during the assessment of sufficient importance, which could potentially be affected by the Project are summarised below<sup>101</sup>:

- **International statutory designated biodiversity sites with ornithological interest features** located within 20km of the Preliminary Order Limits: Mersey Estuary SPA: all features; Mersey Estuary Ramsar: all features; Midlands Meres and Mosses Phase 2 Ramsar: all features; Rostherne Mere Ramsar: all features; The Dee Estuary SPA: all features; The Dee Estuary Ramsar: all features; Liverpool Bay SPA: all features; Mersey Narrows and North Wirral Foreshore SPA: all features; Mersey Narrows and North Wirral Foreshore Ramsar: all features; Ribble and Alt Estuaries SPA: all features; Ribble and Alt Estuaries Ramsar: all features.
- **National statutory designated biodiversity sites** located within 2km of the Preliminary Order Limits: Mersey Estuary SSSI; Hatton's Hey Wood, Whittles Corner and Bank Rough SSSI; Woolston Eyes SSSI; Pettypool Brook Valley SSSI; Flood Brook Clough SSSI; Frodsham Railway and Road Cuttings SSSI; Witton Lime Beds SSSI; Brookheys Covert SSSI; Dunsdale Hollow SSSI; Red Brow Cutting SSSI; Dunham Park SSSI; Beechmill Wood and Pasture SSSI; Warburton's Wood and Well Wood SSSI.
- **National statutory designated biodiversity sites with ornithological interest features** located between 2km and 10km from the Preliminary Order Limits: Rostherne Mere SSSI; Stanley Bank Meadow SSSI; Rixton Clay Pits SSSI; Risley Moss SSSI; Plumley Lime Beds SSSI; Astley & Bedford Mosses SSSI; Tatton Meres SSSI; Sandbach Flashes SSSI; Tabley Mere SSSI; River Dee (England) SSSI; Cotteril Clough SSSI.
- **Other statutory biodiversity sites** located within 2km of the Preliminary Order Limits: Thatto Heath Meadows LNR; Daresbury Firs LNR; Runcorn Hill LNR; Oxmoor Wood LNR; Paddington Meadows LNR; Marshall's Arm, Hartford LNR; Helsby Quarry LNR; Murdishaw Wood and Valley LNR; Dorchester Park LNR; Parr Hall Millenium Green LNR.
- **Non-statutory designated biodiversity sites** located within 2km of the Preliminary Order Limits: Partington Nature Reserve SBI; Rookery Wood and Pool LWS; Clifton Lagoon LWS; Disused Railway Line South of Warrington Road LWS; Ravenhead Ponds LWS; Frodsham, Helsby and Ince Marshes LWS; Vale Royal Wood LWS; East Clifton Tip LWS; Rows Wood LWS; Parkside Farm Wood LWS; Ansdells Wood LWS; Heys Wood and the Riddings LWS; Park Moss Wood LWS; Acton Bridge Meadows LWS; Littledales Gorse LWS; Anderton Lime Beds LWS; Sinderland Green Wood SBI; Reeve Court Woodland and grassland LWS; Thatto Heath Meadows LWS; Sandiway Golf Course LWS; Upper Mersey Estuary LWS; Rye Grass Pipes LWS; Weaver Valley Country Park LWS; St Helens Canal Disused\_A LWS; Newbridge Wood LWS; Latchford Railway Sidings LWS; Pendlebury Brook (SJ493920-

<sup>101</sup> Several ecological features have been included as a precaution where their importance cannot be determined at this stage, for example where baseline data collection is currently incomplete. Following the completion of baseline data collection and on-going consultation, the scoping of ecological features will be updated in the ES accordingly.

SJ515914) LWS; Norton Marsh and Upper Moss Side Fields LWS; Upper Moss Side Farm LWS; Bradford Mill Wood and Marsh LWS; Frodsham Field Studies Centre LWS; Walton Locks LWS; Trent and Mersey Canal, Whatcroft LWS; Sutton Manor LWS; Weaver Valley/Newbridge Pool LWS; Moore Nature Reserve LWS; Sutton Bridge Unused Lagoon LWS; Lower Weaver Valley Woods LWS; Manor Park Woodland LWS; Dutton Dean LWS; Clifton Cloughs\_B LWS; Model Farm Wood LWS; Park Brow LWS; Morts Wood LWS; Rows Wood LWS; Whatcroft Hedge LWS; Lowes Wood LWS; Fields Behind Ye Olde No. 3\_B LWS; Broadoak Wood SBI; Fields Behind Ye Olde No. 3\_A LWS; Clifton Cloughs\_A LWS; Lodge Wood LWS; Puddinglake Brook Wood LWS; Whatcroft Lane Wetlands LWS; River Dane, Bostock LWS; Model Farm Pasture LWS; Moore Meadows LWS; Birds Wood LWS; Dutton Dingles LWS; Sherdley Park LWS; Garden Wood LWS; Old mineral line Lea Green LWS; Fury Tip LWS; Whatcroft Woodland LWS; Kennel Wood, Northwich LWS; Woolstencroft Farm Meadow LWS; Hefferston Grange Farm Meadows LWS; Bog Rough LWS; Daresbury Firs (Keckwick Hill) LWS; Hopyards Wood LWS; Wharton Green Pasture LWS; Cuddington Brook (North) LWS; Long Acre Wood LWS; Station Road Railway Site LWS; Appleton Reservoir LWS; Daresbury Firs LWS; Pitts Heath Wood LWS; Witton Flashes LWS; Helsby Hill LWS; Runcorn Hill LWS; New Pool and Wood LWS; Quick Woods LWS; Nursery Wood LWS; Whitegate Way LWS; Clough Wood LWS; Carrington Power Station SBI; Bestway Wood, Gunners Clough and Nursery Wood LWS; Green Wood LWS; Oxmoor\_B LWS; Beechwood LWS; Gowy Meadows and Ditches LWS; Whittle Brook (SJ521902-SJ535896) LWS; Heath Off Bradford Road LWS; Oxmoor\_A LWS; Barker's Hollow Wood LWS; Pettypool Wood LWS; First Pit, Ellis Lane LWS; Park Brow Pool LWS; Boundary Farm Pond LWS; Weston Marsh Lagoon LWS; Mersey Valley Golf Course LWS; Marbury Big Wood LWS; Lower Weaver Valley Floodplain LWS; Gatewath LWS; Alexandra Colliery LWS; Greenbank Wood LWS; Catsclough LWS; Silver Well Wood LWS; Friar's Rough LWS; St Helens Canal Disused\_B LWS; Ash Trees along Trent and Mersey Canal, Billinge Green LWS; Crowholt Wood and Whitley Brook LWS; Bradley Meadow Wood, Hawton Clough and Little Leigh Ponds LWS; Hob Hey Wood LWS; Marbury Lime Bed and Forge Pool LWS; Meadow by Earls Wood and River Dane LWS; Dennow Wood LWS; Moss Wood SBI; Southern Verge Embankment LWS; Paddington Meadows LWS; Peck Mill Valley LWS; Whiteoaks Wood SBI; Dutton Hospital Wood LWS; Sankey Canal Central\_B LWS; Petty Pool Brook and Woods LWS; Frodsham and Overton Woods LWS; Barnton Cut Wood LWS; Budworth Mere LWS; Land off Lunts Heath Road\_A LWS; Hoblane Ponds LWS; Widnes Warth Saltmarsh LWS; Sankey Canal Central\_A; Brookheys Covert SBI; St Helens Canal LWS; Merryfall Wood LWS; Fox Covert and Meadows SBI; Lodge Plantation LWS; Upper Mersey Estuary LWS; Harmers Wood LWS; Billinge Green Farm Pond LWS; Land off Lunts Heath Road\_B LWS; Helsby Allotments and Cemetery LWS; Black Moss Covert SBI; Red Brook SBI; Norbury Wood LWS; Drakelow Gorse LWS; Upper Mersey Estuary Intertidal Areas and Mudflats LWS; Sutton Brook (SJ530935-SJ526945) LWS; Bawsgate Pond and Grassland LWS; Pickering's Oxbow LWS; Bridgewater Canal SBI; Brickkiln Nursery Wood SBI; Blackamoor Wood and the Coppice LWS; Big Wood LWS; B W Lagoon, Kingsley LWS; Sandymoor Wood LWS; The Glen LWS; Bull's Wood and Meadow LWS; Ashton's and Neumann's Flashes LWS;

Oak Wood near School Lane SBI; Murdishaw Wood and Valley LWS; Dorchester Park LWS; Helsdale Wood and Newhey's Plantation LWS; Westy Point LWS; Sutton Mill Dam LWS; Forge Wood LWS; Grappenhall Heys\_B LWS; Dunham Park SBI; Pear Tree Farm LWS; Cartledge Moss LWS; Acton Cliff Meadow LWS; Thatto Heath Dam LWS; Wades Lane Clough LWS; Sixes Pool LWS; Hogswood Covert SBI; Astmoor Saltmarsh and Swamp LWS; Deakin Yard Wood LWS; The Bongs and the Gorse LWS; Land North of Hallwood Park LWS; Marston Meadows LWS; Stretton Moss LWS; Thelwall Meadow LWS; Kennel Wood, Sandiway LWS; Wetland at Carrington Moss SBI; Cliff Brook Meadows LWS; The Twiggeries LWS; Flixton Sludge Beds SBI; Woolston New Cut Canal LWS; Grappenhall Heys\_A LWS; Grey's Gorse LWS; Old River Irwell SBI; Pex Hill Country Park LWS; Daresbury LWS; Heatley Lake\_B LWS; Heatley Lake\_A LWS; Bank Hall Farm Flush LWS; Mill Wood, Big Wood & Willowbed Wood LWS; The Rough Woodland LWS; Beauty Bank LWS; Bewsey Meadows LWS; Flint Mill Reedbeds LWS; River Gowy LWS; Snipe Island LWS; Owley Wood LWS; Jack Lane SBI; Birchmoor Covert SBI; Blundell Hills Golf Course LWS; The Dingle and Ford's Rough LWS; Beach Hill Wood LWS; Marston Flashes LWS; The Willowbeds LWS; Land, west of Gerrards Lane LWS; Ravensclough LWS; St Helens Canal, south of Haresfinch Burgy Bank LWS; Haresfinch Burgy Banks LWS; Lymm Dam Complex LWS; Stenhills Open Space LWS; Rough Grassland around Sutton Dam Stream LWS; Parr Hall Millenium Green and Canal LWS; Norton Priory\_A LWS; Veteran Ash Tree - Bank Hall Farm LWS; Altrincham Sewage Works SBI; Wervin Meadows LWS; Leg O'Mutton Dam LWS; Stockton Heath Quarry LWS; Coroners Wood SBI; Ravensclough Marsh LWS; Bostock Road Orchards LWS; Redmoor Covert SBI; Booth's Wood LWS; Tunstalls Farm LWS; Eccleston Top Dam LWS; Twenty Acre Wood LWS; The Bongs and the Gorse LWS; Malljurs Covert SBI; Sankey Brook LWS; Veteran Ash Tree - Bank Farm, Bostock LWS.

- **Conservation-notable habitats, including HPI:** ancient and semi-ancient woodland/ancient replanted woodland and veteran trees; broadleaved semi-natural woodland; hedgerows; standing water (ponds and wet ditches); running water (rivers, streams and ditches); coastal and floodplain grazing marsh; coastal saltmarsh; lowland calcareous grassland; lowland fens; lowland heathland; lowland meadows; lowland raised bogs; mudflats; open mosaic habitat on previously developed land; purple moor grass and rush pasture; reedbeds; traditional orchard; upland hay meadow; and woodland pasture and parkland.
- **Other non-priority habitats with biodiversity benefit:** good quality semi-improved grassland; and those that fall within habitat network zones.
- **Legally protected species:** bats; great crested newts (St Helens only); otter; water vole; reptiles; badger; nesting birds (including Schedule 1 species); spawning fish, migratory salmonids and eel.
- **Conservation-notable species, including SPI:** terrestrial and aquatic invertebrates; plants; wintering bird assemblage.

5.8.21

The following ecological features have been scoped out of further assessment where they are of insufficient importance for likely effects to be significant or for other reasons outlined in **Table 5A.1** in **Appendix 5A**:

- **Other non-priority habitats with biodiversity benefit:** plantation woodland – mixed; plantation woodland – broadleaved; plantation woodland – coniferous.
- **Other non-priority habitats with low or negligible biodiversity interest:** amenity grassland; improved grassland; poor semi-improved grassland; marshy grassland; tall ruderal; arable; dry ditch; ephemeral/short perennial; introduced shrub; scattered trees; scrub (dense and scattered); buildings; hardstanding; bare ground; fences.
- **Conservation-notable species, including SPI:** vertebrate species.
- **Invasive non-native plant species.**

5.8.22

In addition to the above, the following features have been scoped out of further assessment for the additional reasons provided below:

- **Non-Schedule 1 breeding birds** – breeding bird surveys targeted at non-Schedule 1 species have been scoped out of the assessment as it is considered that any effects upon active nests of breeding birds can be mitigated by best practice embedded environmental measures (see **Section 5.7**) such as timing of vegetation clearance works outside the breeding bird season, and where this is not possible carrying out pre-construction nest checks and avoiding active nests.
- **Wintering birds** – wider wintering bird surveys targeted at those species that are not qualifying species of the aforementioned designated sites (e.g. surveys of the qualifying features of the Mersey Estuary SPA/Ramsar Site were undertaken on potential FLL) have been scoped out the assessment as it is considered that any effects on wintering birds would be negligible and temporary and can also be mitigated by best practice embedded environmental measures (see **Section 5.7**).
- **Dormouse** – the potential for significant effects on dormouse has been scoped out of the assessment in view of the geographical location of the Project. This is supported by an absence of desk study records from LRCs of dormouse from within 2km of the Preliminary Order Limits, an absence of records within the National Dormouse Database<sup>102</sup> maintained by the People's Trust for Endangered Species (PTES) and the current PTES dormouse distribution map<sup>103</sup>. Although there is an introduced population of dormouse known to be present in the Wych Valley, this is the only known population present within

<sup>102</sup> PTES (2020). National Dormouse Database. Available on the National Biodiversity Atlas. (online) Available at: [https://records.nbnatlas.org/occurrences/search?q=data\\_resource\\_uid:dr829#tab\\_mapView](https://records.nbnatlas.org/occurrences/search?q=data_resource_uid:dr829#tab_mapView) (Accessed 01 July 2022).

<sup>103</sup> PTES dormouse distribution map. (online) Available at: <https://ptes.org/wp-content/uploads/2016/01/Current-Dormouse-Distribution-Map.png> (Accessed 01/07/2022).

Cheshire and there is no suitable connective habitat between the land within the Preliminary Order Limits and this population.

- 5.8.23 Where potential ecological features have been identified above, the potential for those features to be significantly affected by the Project is considered in the following section.

### Likely significant effects

- 5.8.24 Through an understanding of the activities associated with the Project and the resulting environmental changes, ecological features have been identified which may be subject to likely significant effects (i.e. where an ecological feature with sufficient biodiversity importance is sensitive to an environmental change, and occurs within the ZoI).
- 5.8.25 Biodiversity features have only been assessed against potential environmental changes to which they are likely to be sensitive. Where a feature is not considered sensitive to an environmental change or to the scale of an environmental change, it is scoped out.
- 5.8.26 During this process, embedded environmental measures (see **Section 5.7**) associated with good practice have been taken into account.
- 5.8.27 **Table 5A.2 in Appendix 5A** details the scoping of potential effects on biodiversity features, to identify those which may be subject to likely significant effects that will be taken forward for further assessment in **Section 5.11**. The features that have been scoped in and taken forward for assessment are summarised in **Table 5.16**. The features scoped out from being subject to further assessment because the environmental changes and resultant potential effects are not considered likely to be significant are summarised in **Table 5.17** and the rationale for them being scoped out is presented in **Appendix 5A**.
- 5.8.28 The effects on biodiversity features which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 5.16**.

Table 5.16 Biodiversity features scoped in for further assessment

| Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Likely significant effects <sup>104</sup>                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mersey Estuary SPA, Ramsar Site and SSSI: all features</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | The effects of disturbance (and resulting displacement) from operatives and their machinery on qualifying features using potentially FLL associated with this site.                                                                                                                                    |
| <b>Non-statutory designated biodiversity sites located within the Preliminary Order Limits: Rookery Wood and Pool LWS; Clifton Lagoon LWS; Disused Railway Line South of Warrington Road LWS; Ravenhead Ponds LWS; Frodsham, Helsby and Ince Marshes LWS; Vale Royal Wood LWS; East Clifton Tip LWS; Rows Wood LWS; Parkside Farm Wood LWS; Ansdells Wood LWS; Heys Wood and the Riddings LWS; Park Moss Wood LWS; Acton Bridge Meadows LWS; Littledales Gorse LWS; Anderton Lime Beds LWS; Sinderland Green Wood SBI; Reeve Court Woodland and grassland LWS; Thatto Heath Meadows LWS; Sandiway Golf Course LWS; Upper Mersey Estuary LWS; Rye Grass Pipes LWS; Weaver Valley Country Park LWS; St Helens Canal Disused_A LWS; Newbridge Wood LWS; Latchford Railway Sidings LWS; Pendlebury Brook (SJ493920-SJ515914) LWS; Norton Marsh and Upper Moss Side Fields LWS; Upper Moss Side Farm LWS; Bradford Mill Wood and Marsh LWS; Frodsham Field Studies Centre LWS; Walton Locks LWS;</b> | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats (resulting in a reduction in connectivity); and increased noise, vibration, light and movement levels resulting in disturbance and/or displacement of fauna. |

<sup>104</sup> NOTE – Other technical chapters use “likely significant effects” and “potential likely significant effects” to accord with the EIA Regulations (2017). Within the Biodiversity chapter the term “potentially significant effects” is used as it accords with CIEEM guidance to describe effects that have the potential to be significant prior to their assessment (i.e. until the end of the “scope of the assessment”), and the term “likely significant effects”, only once assessment has determined that they would indeed be significant. This is not to be confused with Likely Significant Effects (LSEs) when used in the context of the Habitats Regulations Assessment

| Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Likely significant effects <sup>104</sup>                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Trent and Mersey Canal, Whatcroft LWS; Sutton Manor LWS; Weaver Valley/Newbridge Pool LWS; Moore Nature Reserve LWS; Sutton Bridge Unused Lagoon LWS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                         |
| <b>Non-statutory designated biodiversity sites located within &lt;0.5km of the Preliminary Order Limits: Lower Weaver Valley Woods LWS; Manor Park Woodland LWS; Model Farm Wood LWS; Sherdley Park LWS; Kennel Wood, Northwich LWS; Woolstencroft Farm Meadow LWS; Bog Rough LWS; Daresbury Firs (Keckwick Hill) LWS; Appleton Reservoir LWS; Daresbury Firs LWS; Pitts Heath Wood LWS; Helsby Hill LWS; Runcorn Hill LWS; Quick Woods LWS; Whitegate Way LWS; Clough Wood LWS; Bestway Wood, Gunners Clough and Nursery Wood LWS; Green Wood LWS; Oxmoor_B LWS; Beechwood LWS; Gowy Meadows and Ditches LWS; Whittle Brook (SJ521902-SJ535896) LWS; Heath Off Bradford Road LWS; Oxmoor_A LWS; Barker's Hollow Wood LWS</b> | Increased noise, vibration, light and movement levels resulting in disturbance and/or displacement of fauna for which the following sites are designated.                               |
| <b>Ancient and semi-ancient woodland/ancient replanted woodland and veteran trees</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and fragmentation of habitats resulting in a reduction in connectivity. |
| <b>Broad-leaved semi-natural woodland</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and fragmentation of habitats resulting in a reduction in connectivity. |
| <b>Hedgerows</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and fragmentation of habitats resulting in a reduction in connectivity. |

| Receptor                                                     | Likely significant effects <sup>104</sup>                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Standing water (ponds and wet ditches)</b>                | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and fragmentation of habitats resulting in a reduction in connectivity.                                                                                                     |
| <b>Running water (rivers, streams and ditches)</b>           | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and fragmentation of habitats resulting in a reduction in connectivity.                                                                                                     |
| <b>Other HPIs</b>                                            | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and fragmentation of habitats resulting in a reduction in connectivity.                                                                                                     |
| <b>Other non-priority habitats with biodiversity benefit</b> | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and fragmentation of habitats resulting in a reduction in connectivity.                                                                                                     |
| <b>Bats</b>                                                  | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; and increased noise, vibration, light and movement levels resulting in disturbance and/or displacement. |
| <b>Great crested newt (St Helens only)</b>                   | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and fragmentation of habitats resulting in a reduction in connectivity.                                                                                                     |
| <b>Otter</b>                                                 | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; and increased noise, vibration, light and movement levels resulting in disturbance and/or displacement. |

| Receptor                                                                               | Likely significant effects <sup>104</sup>                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Water vole</b>                                                                      | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; and increased noise, vibration, light and movement levels resulting in disturbance and/or displacement. |
| <b>Reptiles</b>                                                                        | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and fragmentation of habitats resulting in a reduction in connectivity.                                                                                                     |
| <b>Badger</b>                                                                          | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; and increased noise, vibration, light and movement levels resulting in disturbance and/or displacement. |
| <b>Freshwater fish</b>                                                                 | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; and increased noise, vibration, light and movement levels resulting in disturbance and/or displacement. |
| <b>Schedule 1 breeding birds</b>                                                       | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and<br>Effects of disturbance resulting from increased noise, vibration, light and movement levels.                                                                         |
| <b>SPI and other conservation-notable terrestrial and aquatic invertebrate species</b> | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; and increased noise,                                                                                    |

| Receptor                                                          | Likely significant effects <sup>104</sup>                                                                                                                                               |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                   | vibration, light and movement levels resulting in disturbance and/or displacement.                                                                                                      |
| <b>SPI and other protected/conservation-notable plant species</b> | Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and fragmentation of habitats resulting in a reduction in connectivity. |

## Elements scoped out of further assessment

5.8.29

The features/effects detailed in **Table 5.17** have been scoped out from being subject to further assessment because the potential effects are not considered likely to be significant. Details of the environmental changes, the respective Zol and rationale for excluding them from the assessment are in **Appendix 5A**.

**Table 5.17 Summary of features scoped out of the biodiversity assessment**

| Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>International statutory designated biodiversity sites with terrestrial ecology features located within 2km and ornithological features located within 20km of the Preliminary Order Limits: Midlands Meres and Mosses Phase 2 Ramsar Site, all features; Rostherne Mere Ramsar Site, all features; The Dee Estuary SPA, all features; The Dee Estuary Ramsar Site, all features; Liverpool Bay SPA, all features; Mersey Narrows and North Wirral Foreshore SPA, all features; Mersey Narrows and North Wirral Foreshore Ramsar Site, all features; Ribble and Alt Estuaries SPA, all features.</b> | Features are located beyond the Zol for all environmental changes. Therefore, there are no pathways for a significant effect on sedentary cited features. Where mobile features are cited, the range of the features fall outside the Zol and thus there is no pathway for a significant effect; or these features are not considered sensitive to the potential indirect environmental changes (increased noise, vibration, light and movement levels) at the distance from the Preliminary Order Limits.                                                                                                           |
| <b>National statutory designated biodiversity sites with terrestrial ecology features located within 2km of the Preliminary Order Limits: Hatton's Hey Wood, Whittles Corner and Bank Rough SSSI; Pettypool Brook Valley SSSI; Flood Brook Clough SSSI; Frodsham Railway and Road Cuttings SSSI; Witton Lime Beds SSSI; Brookheys Covert SSSI; Dunsdale Hollow SSSI; Red Brow Cutting SSSI; Dunham Park SSSI; Beechmill Wood and Pasture SSSI; Warburton's Wood and Well Wood SSSI.</b>                                                                                                                | Features are located beyond the Zol for all environmental changes. Therefore, there are no pathways for a significant effect on sedentary cited features. Where mobile features are cited, the range of the features fall outside the Zol and thus there is no pathway for a significant effect; or these features are not considered sensitive to the potential indirect environmental changes (increased noise, vibration, light and movement levels) at the distance from the Preliminary Order Limits, and embedded environmental measures further minimise the potential impact of these environmental changes. |
| <b>National statutory designated biodiversity sites with ornithological interest features located within 10km from the Preliminary Order Limits: Woolston Eyes SSSI;</b>                                                                                                                                                                                                                                                                                                                                                                                                                               | Where mobile ornithological features are cited, the range of the features fall outside the Zol and thus there is no pathway for a significant effect; or these features are not considered sensitive to the potential indirect                                                                                                                                                                                                                                                                                                                                                                                       |

| Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Rostherne Mere SSSI;</b><br><b>Stanley Bank Meadow SSSI;</b><br><b>Rixton Clay Pits SSSI;</b><br><b>Risley Moss SSSI;</b><br><b>Plumley Lime Beds SSSI;</b><br><b>Astley &amp; Bedford Mosses SSSI;</b><br><b>Tatton Meres SSSI;</b><br><b>Sandbach Flashes SSSI;</b><br><b>Tabley Mere SSSI;</b><br><b>River Dee (England) SSSI;</b><br><b>Cotteril Clough SSSI.</b>                                                                                                                                                                                     | <p>environmental changes (increased noise, vibration, light and movement levels) at the distance from the Preliminary Order Limits, and embedded environmental measures further minimise the potential impact of these environmental changes.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Other statutory biodiversity sites within 2km of the Preliminary Order Limits: Thatto Heath Meadows LNR;</b><br><b>Daresbury Firs LNR; Runcorn Hill LNR; Oxmoor Wood LNR; Paddington Meadows LNR; Marshall's Arm, Hartford LNR; Helsby Quarry LNR;</b><br><b>Murdishaw Wood and Valley LNR; Dorchester Park LNR; Parr Hall Millennium Green LNR.</b>                                                                                                                                                                                                      | <p>None of these LNRs are located within the ZoI for direct or indirect environmental changes. Therefore, there is no pathway for a significant effect on sedentary cited features, and no mobile features are cited with the exception of Parr Hall Millennium Green LNR (see below).</p> <p>Thatto Heath Meadows LNR is located adjacent to the Preliminary Order Limits, however embedded environmental measures would minimise the risk of impacts to negligible.</p> <p>Water vole is a cited feature of Parr Hall Millennium Green LNR, however the LNR is approximately 1.72km from the Preliminary Order Limits, and thus beyond the ZoI for all indirect environmental changes.</p> |
| <b>Non-statutory designated biodiversity sites located within &lt;0.5km of the Preliminary Order Limits: Partington Nature Reserve SBI; Dutton Dean LWS; Clifton Cloughs_B LWS; Park Brow LWS;</b><br><b>Morts Wood LWS; Rows Wood LWS; Whatcroft Hedge LWS; Lowes Wood LWS; Fields Behind Ye Olde No. 3_B LWS; Broadoak Wood SBI; Fields Behind Ye Olde No. 3_A LWS; Clifton Cloughs_A LWS; Lodge Wood LWS;</b><br><b>Puddinglake Brook Wood LWS; Whatcroft Lane Wetlands LWS;</b><br><b>River Dane, Bostock LWS; Model Farm Pasture LWS; Moore Meadows</b> | <p>None of these sites are located within the ZoI for direct or indirect environmental changes. Therefore, there is no pathway for potentially significant effect. Several of these sites are located adjacent to the Preliminary Order Limits, however embedded environmental measures would minimise the risk of impacts to negligible.</p>                                                                                                                                                                                                                                                                                                                                                |

| Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Justification                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>LWS; Birds Wood LWS; Dutton Dingles LWS; Garden Wood LWS; Old mineral line Lea Green LWS; Fury Tip LWS; Whatcroft Woodland LWS; Hefferston Grange Farm Meadows LWS; Hopyards Wood LWS; Wharton Green Pasture LWS; Cuddington Brook (North) LWS; Long Acre Wood LWS; Station Road Railway Site LWS; Witton Flashes LWS; New Pool and Wood LWS; Nursery Wood LWS; Carrington Power Station SBI</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           |
| <p>Non-statutory designated biodiversity sites located between 0.5-2km of the Preliminary Order Limits:</p> <p>Pettypool Wood LWS; First Pit, Ellis Lane LWS; Park Brow Pool LWS; Boundary Farm Pond LWS; Weston Marsh Lagoon LWS; Mersey Valley Golf Course LWS; Marbury Big Wood LWS; Lower Weaver Valley Floodplain LWS; Gatewarth LWS; Alexandra Colliery LWS; Greenbank Wood LWS; Catsclough LWS; Silver Well Wood LWS; Friar's Rough LWS; St Helens Canal Disused_B LWS; Ash Trees along Trent and Mersey Canal, Billinge Green LWS; Crowholt Wood and Whitley Brook LWS; Bradley Meadow Wood, Hawton Clough and Little Leigh Ponds LWS; Hob Hey Wood LWS; Marbury Lime Bed and Forge Pool LWS; Meadow by Earls Wood and River Dane LWS; Dennow Wood LWS; Moss Wood SBI; Southern Verge Embankment LWS; Paddington Meadows LWS; Peck Mill Valley LWS; Whiteoaks Wood SBI; Dutton Hospital Wood LWS; Sankey Canal Central_B LWS; Petty Pool Brook and Woods LWS; Frodsham and Overton Woods LWS; Barnton Cut Wood LWS; Budworth Mere LWS; Land off Lunts Heath Road_A LWS; Hoblane Ponds LWS; Widnes Warth Saltmarsh LWS;</p> | <p>None of these sites are located within the Zol for the direct or indirect environmental changes that have been identified. Therefore, there is no pathway for significant effects.</p> |

| Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Justification |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <p>Sankey Canal Central_A; Brookheys Covert SBI; St Helens Canal LWS; Merryfall Wood LWS; Fox Covert and Meadows SBI; Lodge Plantation LWS; Upper Mersey Estuary LWS; Harmers Wood LWS; Billinge Green Farm Pond LWS; Land off Lunts Heath Road_B LWS; Helsby Allotments and Cemetery LWS; Black Moss Covert SBI; Red Brook SBI; Norbury Wood LWS; Drakelow Gorse LWS; Upper Mersey Estuary Intertidal Areas and Mudflats LWS; Sutton Brook (SJ530935-SJ526945) LWS; Bawsgate Pond and Grassland LWS; Pickering's Oxbow LWS; Bridgewater Canal SBI; Brickkiln Nursery Wood SBI; Blackamoor Wood and the Coppice LWS; Big Wood LWS; B W Lagoon, Kingsley LWS; Sandymoor Wood LWS; The Glen LWS; Bull's Wood and Meadow LWS; Ashton's and Neumann's Flashes LWS; Oak Wood near School Lane SBI; Murdishaw Wood and Valley LWS; Dorchester Park LWS; Helsdale Wood and Newhey's Plantation LWS; Westy Point LWS; Sutton Mill Dam LWS; Forge Wood LWS; Grappenhall Heys_B LWS; Dunham Park SBI; Pear Tree Farm LWS; Cartledge Moss LWS; Acton Cliff Meadow LWS; Thatto Heath Dam LWS; Wades Lane Clough LWS; Sixes Pool LWS; Hogswood Covert SBI; Astmoor Saltmarsh and Swamp LWS; Deakin Yard Wood LWS; The Bongs and the Gorse LWS; Land North of Hallwood Park LWS; Marston Meadows LWS; Stretton Moss LWS; Thelwall Meadow LWS; Kennel Wood, Sandiway LWS; Wetland at Carrington Moss SBI; Cliff Brook Meadows LWS; The Twiggeries LWS; Flixton Sludge Beds SBI; Woolston New Cut Canal LWS; Grappenhall Heys_A LWS; Grey's</p> |               |

| Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Justification                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Gorse LWS; Old River Irwell SBI; Pex Hill Country Park LWS; Daresbury LWS; Heatley Lake_B LWS; Heatley Lake_A LWS; Bank Hall Farm Flush LWS; Mill Wood, Big Wood &amp; Willowbed Wood LWS; The Rough woodland LWS; Beauty Bank LWS; Bewsey Meadows LWS; Flint Mill Reedbeds LWS; River Gowy LWS; Snipe Island LWS; Owley Wood LWS; Jack Lane SBI; Birchmoss Covert SBI; Blundell Hills Golf Course LWS; The Dingle and Ford's Rough LWS; Beach Hill Wood LWS; Marston Flashes LWS; The Willowbeds LWS; Land, west of Gerrards Lane LWS; Ravensclough LWS; St Helens Canal, south of Haresfinch Burgy Bank LWS; Haresfinch Burgy Banks LWS; Lymm Dam Complex LWS; Stenhills Open Space LWS; Rough Grassland around Sutton Dam Stream LWS; Parr Hall Millenium Green and Canal LWS; Norton Priory_A LWS; Veteran Ash Tree - Bank Hall Farm LWS; Altrincham Sewage Works SBI; Wervin Meadows LWS; Leg O'Mutton Dam LWS; Stockton Heath Quarry LWS; Coroners Wood SBI; Ravensclough Marsh LWS; Bostock Road Orchards LWS; Redmoor Covert SBI; Booth's Wood LWS; Tunstalls Farm LWS; Eccleston Top Dam LWS; Twenty Acre Wood LWS; The Bongs and the Gorse LWS; Malljurs Covert SBI; Sankey Brook LWS; Veteran Ash Tree - Bank Farm, Bostock LWS.</p> |                                                                                                                                                                                                                                                                                           |
| <p>Great crested newt (all areas except St Helens)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>The Project will join a Natural England-led great crested newt DLL scheme, in districts where it is currently available. This recommends the non-mandatory employment of standard best practice Reasonable Avoidance Measures, included in the embedded environmental measures; By</p> |

| Features                                                     | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                              | default, under the DLL scheme no significant effects on this feature would result.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>SPI and other conservation-notable vertebrate species</b> | Although, SPI and other conservation-notable vertebrate species are assumed to be present within the Zols of both direct and indirect environmental changes and the Project will result in a loss of habitat for these species, the reduction will be minimal and affect a small area of habitat currently occupied. Embedded environmental measures outlined in <b>Section 5.7</b> will ensure that permanent loss and fragmentation of these habitats is minimised and avoided where possible, and that the risk of injury/death and disturbance to these species is minimised. Temporary land take would be re-instated and permanent land take would be compensated for and added to through the provision of BNG. |
| <b>Wintering birds</b>                                       | <p>Wintering bird surveys aimed at detecting SPA/Ramsar Site qualifying species using FLL were undertaken during winter 2021/22 and are detailed within the Mersey Estuary SPA/Ramsar Site section.</p> <p>Wider wintering bird surveys targeted at those species that are not qualifying species of the designated site have been scoped out the assessment as it is considered that any effects on wintering birds would be negligible and temporary, plus can also be mitigated by best practice embedded environmental measures (see <b>Section 5.7</b>).</p>                                                                                                                                                      |
| <b>Non-Schedule 1 breeding birds</b>                         | It is considered that any effects upon active nests of breeding birds can be mitigated by best practice embedded environmental measures (see <b>Section 5.7</b> ) such as timing of vegetation clearance works outside the breeding bird season, and where this is not possible carrying out pre-construction nest checks and avoiding active nests.                                                                                                                                                                                                                                                                                                                                                                   |

## 5.9 Habitat Regulations Assessment

- 5.9.1 In line with the Planning Inspectorate's Advice Note 10, the relevant Secretary of State is the competent authority for the purposes of the Habitats Regulations in relation to applications for Nationally Significant Infrastructure Projects (NSIPs). The Habitats Regulations require competent authorities, before granting consent for a plan or project, to carry out an Appropriate Assessment (AA) in circumstances where the plan or project is likely to have a significant effect on a European site (either alone or in combination with other plans or projects).
- 5.9.2 A HRA NSER detailing the HRA Screening has been undertaken and in accordance with the Planning Inspectorate's Advice Note 10 the Screening determined whether the Project would have LSEs on any European sites (please refer to **Appendix 5B**). No LSE were identified in the NSER. Further consultation with Natural England will be undertaken to confirm the adequacy of the NSER, and the HRA process to agree the NSER screening conclusions. This consultation will detail and confirm the agreement for either a NSER or HRA Report to be produced prior to the submission of the DCO application.

## 5.10 Methodology for PEIR assessment

### Introduction

- 5.10.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 3: Approach to preparing the PEIR**, and specifically in **Sections 3.7 to 3.10**. However, whilst this has informed the approach that has been used in this biodiversity assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this biodiversity assessment.
- 5.10.2 At this PEIR stage, the assessment is based upon the results of the desk study and field surveys (partially complete at present), and relevant published information (for example on the status, distribution, sensitivity to environmental changes and ecology of the features scoped into the assessment, where this information is available), technical engagement with stakeholders (see **Section 5.3**), and professional knowledge of ecological processes and functions. The assessment will be reviewed and updated for the ES when further surveys and Project design details are available.
- 5.10.3 The assessment methodology is aligned with the standard industry guidance provided by CIEEM<sup>2</sup>. The assessment is based upon not only the results of the desk study and field surveys, but also relevant published information (for example on potential ecological features' status, distribution, sensitivity to environmental changes and ecology, where this information is available), technical engagement with Natural England and other key consultees, and professional knowledge of ecological processes and functions.
- 5.10.4 For each scoped-in feature, effects are assessed against the baseline conditions for that ecological feature during construction and operation. Throughout the assessment process, findings about potentially significant effects will be used to inform the definition of requirements for additional baseline data collection and the

identification of embedded environmental measures to avoid or reduce adverse effects or to deliver enhancements. Measures to comply with relevant policies and legislation are included. The results of the assessment reflect the Project design (i.e. incorporating the embedded environmental measures where identified to date – see **Section 5.7**).

- 5.10.5 The spatial extent of the assessment of each potentially significant effect reflects the area occupied by the feature that is being assessed and the ZOI associated with the environmental changes that are likely to affect it. Thus, if part of a designated biodiversity site is located within the ZOI relating to a particular environmental change, an assessment will be made of the effects on the site as a whole. A similar approach is taken for areas of important habitat. For species that occur within an ZOI that relates to a change that could significantly affect the species, an assessment is carried out on the total area that is used by the affected individuals or population of the species (for example for foraging or as breeding territories).
- 5.10.6 For each feature, the assessment deals, in an integrated way, with the effects of construction and operation. As progressively more information is available about the Project and about the populations of important and legally protected species, and throughout the consultation process, an ongoing detailed scoping exercise will be undertaken to identify which features have the potential to be significantly affected by the Project. This may entail including features that are currently not scoped in. Each scoped-in feature will then be subject to further assessment work that addresses how it is likely to be affected by the Project, allowing for environmental changes that could affect it during construction and operation.

## Significance evaluation methodology

- 5.10.7 CIEEM<sup>2</sup> defines a significant effect as one *“that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general”*.
- 5.10.8 When considering potentially significant effects on such features, whether these are negative or positive, the following characteristics of environmental change are taken into account:
- Extent – the spatial or geographical area over which the environmental change may occur;
  - magnitude – the size, amount, intensity or volume of the environmental change;
  - duration – the length of time over which the environmental change may occur;
  - frequency – the number of times an environmental change may occur;
  - timing – the periods of the day/year/season during which an environmental change may occur; and
  - reversibility – whether the environmental change can be reversed through restoration actions or regeneration.

5.10.9 Although the characteristics described above are all important in assessing effects, the magnitude of the environmental change as a result of the Project is used, as described in **Table 5.18**, to provide a contextual understanding of the relative scale of change from the baseline position.

**Table 5.18 Guidelines for the assessment of the scale of magnitude**

| Magnitude         | Criteria for resultant effect                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>High</b>       | The change permanently (or over the long-term) affects the conservation status of a habitat/species, reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a large area of habitat or large proportion of the wider species population is affected. For designated sites, integrity is compromised. There may be a change in the level of importance of the ecological feature in the context of the Project. |
| <b>Medium</b>     | The change permanently (or over the long term) affects the conservation status of a habitat/species reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a small-medium area of habitat or small-medium proportion of the wider species population is affected. There may be a change in the level of importance of this ecological feature in the context of the Project.                                   |
| <b>Low</b>        | The quality or extent of designated sites or habitats or the sizes of species' populations, experience some small-scale reduction or increase. These changes are likely to be within the range of natural variability and they are not expected to result in any permanent change in the conservation status of the species/habitat or integrity of the designated site. The change is unlikely to modify the evaluation of the ecological feature in terms of its importance.                                                                      |
| <b>Very Low</b>   | Although there may be some effects on individuals or parts of a habitat area or designated site, the quality or extent of sites and habitats, or the size of species populations, means that they would experience little or no change. Any changes are also likely to be within the range of natural variability and there would be no short-term or long-term change to conservation status of habitats/species ecological features or the integrity of designated sites.                                                                         |
| <b>Negligible</b> | A change, the level of which is so low, that it is not discernible on designated sites or habitats or the size of species' populations, or changes that balance each other out over the lifespan of a project and result in a neutral position.                                                                                                                                                                                                                                                                                                     |

## Negative effects

- 5.10.10 A negative effect is assessed as being significant if the favourable conservation status of a biodiversity feature would be compromised or lost as a result of the Project. Conservation status is defined by CIEEM<sup>2</sup> as being:
- for habitats – *“the sum of the influences acting on the habitat and its typical species, that may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area”*; and
  - for species – *“the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area.”*
- 5.10.11 The decision as to whether the conservation status of a feature has been compromised will be made using professional judgement, drawing upon the results of the assessment of how each feature is likely to be affected by the Project.
- 5.10.12 A similar procedure will be used for designated sites that may be affected by the Project, except that the focus will be on the effects on the integrity of each site, defined by CIEEM<sup>2</sup> as:
- 5.10.13 *“the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.”*
- 5.10.14 The assessment of effects on integrity will draw upon the assessment of effects on the conservation status of the features for which the site has been designated.

## Positive effects

- 5.10.15 A development may result in positive effects where there is a resulting change from baseline that improves the quality of the environment (for example increases species diversity, increases the extent of a particular habitat and so on), or halts or slows down an existing decline. For a positive effect to be considered significant, the level of importance of an ecological feature determined at the baseline state would need to increase by one or more geographical levels (for example where an ecological feature of Local importance becomes of County importance following delivery of the Project).

## Biodiversity net gain

- 5.10.16 Embedded environmental measure 1- BNG enhancement, would be provided as part of the Project and would seek to deliver a net gain in biodiversity above the current baseline. Enhancements will be determined following the collection of additional baseline information and further discussions with key stakeholders and would align with local initiatives such as biodiversity opportunity mapping and ecological networks where reasonably practicable, appropriate and relevant. Enhancements will be confirmed in the ES and are not considered in the basis of assessment of effects.

## In-combination climate change impact

- 5.10.17 The assessment of likely significant effects on biodiversity features as a result of the Project has considered the in-combination effects of climate change on features throughout the assessment, and how climate change may affect the efficacy of proposed mitigation and ecological enhancement measures.

## 5.11 Preliminary assessment of biodiversity effects

### Introduction

- 5.11.1 Baselines are presented below where we have undertaken sufficient data gathered in the field to be able to present a detailed baseline. Where surveys are part complete or not yet started, and not further details are available, we refer to **Section 5.6** this PEIR.
- 5.11.2 Without further field survey information, it is not possible to conclusively determine the importance of some biodiversity features at the Project level at this stage, or the extent and magnitude of environmental change on certain features. In these cases, a reasonable worst-case scenario has been assumed and assessment undertaken on that basis in the following sections. The preliminary assessment outcomes have been provided below on a precautionary basis at this stage. These will be reviewed following on-going collection of baseline information, the evolution of the design, and the refinement of embedded environmental measures, and will be presented in full and final form in the ES.
- 5.11.3 Project design options (see **Chapter 2: The Project**) have been considered within the assessment for relevant ecological features.

### Mersey Estuary SPA, Ramsar Site and SSSI: all features

#### *Detailed baseline – overview*

#### *Desk Study*

- 5.11.4 The *Identification of Functionally Linked Land supporting SPA waterbirds in the North West of England* report (Bowland Ecology, 2021), highlighted the following areas of functionally linked land in proximity to the Project(i.e., within 500 m):
- Fiddlers Ferry Power Station and Lagoons / Runcorn Sands and Astmoor Saltmarsh (moderate potential) partially fall within the northern corridor;
  - Lordship Lane Fields (low potential) / Frodsham Sludge Lagoons (high) / Weaver Estuary (moderate) / Weaver Estuary to Catton Hall (moderate) partially fall within the western corridor; and
  - Woolston Eyes (high potential) lies less than 500 m from the Novelis spur terminus within the northern corridor (approximately 280 m).
- 5.11.5 The *Birds in Cheshire and Wirral: A breeding and wintering atlas* (Cheshire and Wirral Ornithological Society, 2008), reported the following SPA/Ramsar Site qualifying species in proximity to the Proposed Development:

- Pink-footed goose – only sporadic records of low numbers of birds in the area;
- Whooper swan – small numbers reported around Lordship Lane Fields;
- Golden plover – Frodsham Marsh is a favoured site in the region, with peak counts of 1,000-4,000 birds reported here, although most records were of small flocks, with a median size of 40 birds;
- Teal – the most recent Mersey Estuary SPA wintering population was estimated at 11,723 individuals (Natural England, 2019<sup>105</sup>), which forms almost half of the total county population of ~25,000 individuals. Other important sites for teal include the Dee Estuary, which averages counts of 4,400 teal, and at Woolston Eyes, which holds around 2,000 birds on average. Additionally, flocks of more than 500 birds were recorded at Fiddler's Ferry during the atlas period;
- Shelduck – the atlas highlighted that WeBS counts show that counts average 14,500 birds in the Mersey and over 11,000 on the Dee estuaries. This status is based on the moulting flock on the Mersey, which peaks in July or August, and the maximum on the Dee, is usually in October. Mid-winter counts are much lower and the numbers staying to winter on the Mersey have dropped considerably since the moulting flock became established, declining from 5,000 in the late 1990s to 3,000 in recent years. The only non-estuarine areas with three figure counts were from Frodsham Marsh (220 birds) and Fiddlers Ferry (100 birds). Both of these are feeding and loafing sites adjacent to the tidal Mersey;
- Pintail – occasional reports, including a record of 250 birds using Frodsham Marsh in winter 2004/05;
- Redshank – most redshank records were from coastal habitats during the atlas period, although 30 were recorded on flooded fields alongside the lower River Weaver at Aston; and
- Black-tailed godwit – the freshwater sites adjacent to the estuaries are important for the species where they can supplement their diet with earthworms, with Frodsham Marsh being a key area. There were few atlas records of birds away from the estuaries and adjacent sites.

5.11.6 The *Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland* (Balmer *et al.*, 2013) also reported similar distribution to that reported in the county atlas above.

### Field Survey

5.11.7 Wintering bird surveys conducted by WSP from October 2020 to March 2021 inclusive (Cadent, 2021<sup>106</sup>), recorded a total of 115 bird species, of which six are

<sup>105</sup> Natural England. (2019). European Site Conservation Objectives for Mersey Estuary SPA (UK9005131). Mersey Estuary SPA citation (22/08/2014). See: <http://publications.naturalengland.org.uk/file/6485318211469312> accessed on 28 October 2021.

<sup>106</sup> Cadent. 2021. Hydrogen Pipeline - Wintering Bird Surveys. 14 May 2021.

qualifying species of the Mersey Estuary SPA (shelduck, teal, pintail, golden plover, black-tailed godwit and redshank).

- 5.11.8 Wintering bird surveys undertaken by Wood from October 2021 to February 2022 inclusive, recorded the following seven Mersey Estuary SPA qualifying species within the Study Area: shelduck, teal, pintail, golden plover, black-tailed godwit, dunlin and redshank. Several assemblage/SSSI species were also recorded within the Study Area including shoveler, lapwing and curlew. Only shelduck, teal, pintail, black-tailed godwit, redshank and shoveler were recorded in notable numbers, with distribution largely restricted to the Ince Marshes, a high tide roost site at Frodsham Sludge Lagoon (functionally linked to the SPA)<sup>107</sup>, and around the 'Weaver Bend' (a large meander in the River Weaver, also functionally linked to the SPA). Pink-footed goose, a qualifying species of the Ribble and Alt Estuaries and Ramsar Site, were also recorded overflying the Study Area (although the Study Area lies at the extreme end of their foraging range from the SPA roost sites)<sup>108</sup>.

### *Predicted effects and their significance*

*Increased noise, vibration, light and movement levels (resulting in disturbance).*

#### *Construction phase*

- 5.11.9 There is the potential for qualifying bird species of the Mersey Estuary SPA and Ramsar site to be deterred from using functionally linked land surrounding (and within) the Preliminary Order Limits for foraging and roosting, due to disturbance during construction and decommissioning of the Proposed Development (due to noise, vehicles, machinery and the presence of operatives).
- 5.11.10 Based on the distributions and known habitat preferences of the qualifying features of the Mersey Estuary SPA and Ramsar Site, all qualifying species (shelduck, teal, pintail, golden plover, black-tailed godwit, dunlin and redshank) and SSSI notified species (e.g. curlew) could potentially utilise FLL within the Project and/or within a 500 m buffer.
- 5.11.11 Further consideration is given below, to all species recorded within potential FLL considered to be vulnerable to disturbance from the Project.
- 5.11.12 Potentially FLL was identified through the desk study, with wintering waterbird surveys focussing on these key areas.

<sup>107</sup> Natural England. 2015. Review and analysis of changes in waterbird use of the Mersey Estuary SPA, Mersey Narrows & North Wirral Foreshore pSPA and Ribble & Alt Estuaries SPA (NECR173). 27 May 2015. Annex II: Roost locations by species at a regional level. Available at: <http://publications.naturalengland.org.uk/file/5495789449117696> (Accessed 28 October 2021).

<sup>108</sup> Brides, K., Mitchell, C. & Hearn R.D. 2013. Mapping the distribution of feeding Pink-footed Geese in England. Wildfowl & Wetlands Trust / Natural England Report, Slimbridge. 43pp. Available at: <https://monitoring.wwt.org.uk/wp-content/uploads/2018/12/Mapping-feeding-Pinkfeet-in-England-Final-report-vFinal.Jan15-2.pdf> (Accessed 22 March 2022).

- 5.11.13 Most records of SPA-qualifying species from the wintering waterbird surveys related to birds roosting and/or feeding on a waterbody within Frodsham Sludge Lagoons at approximate grid reference SJ 500 780. This waterbody is a well-known high-tide roost site for SPA-qualifying black-tailed godwit, dunlin, shelduck, teal, golden plover and redshank (Natural England, 2015), as well as SSSI listed curlew, and is therefore deemed to be functionally linked to the Mersey Estuary SPA (Bowland Ecology, 2021). The winter waterbird surveys in winter 2021/22 confirmed that the waterbody was regularly used across the survey period, regardless of time of day or tidal state, by black-tailed godwit (peak count of 956 birds), pintail (peak count of 109 birds) and teal (peak count of 984 birds). Shelduck (peak count of 50 birds), redshank (peak count of nine birds) and SSSI-listed curlew (peak count of 159 birds) were also recorded here but sporadically and in low numbers. Although lower numbers of target species were expected during the low tide period, this pattern was only loosely noted in black-tailed godwit. This waterbody lies ~50 m from an established access route which is proposed to be used during the construction of the Project. A well-established bund (approximately ~10 m high and 30 m wide) associated with the Frodsham Sludge Lagoons lies between the FLL and the Preliminary Order Limits and would therefore negate any effects associated with visual and noise disturbance.
- 5.11.14 Ince Marshes also held over 1% of SPA-qualifying black-tailed godwit (peak count of 82 birds), as well as a peak count of 134 SSSI listed curlew. The Ince Marshes lies within 500 m of an established access route, which is proposed to be used during the construction of the Project. An operational industrial plant lies between the Project and FLL ~1 km to the north. This physical barrier negates any effects associated with visual and noise disturbance created from the construction, operational and/or decommissioning processes. The Weaver Estuary held important numbers of SPA-qualifying shelduck (peak count of 116 birds), teal (peak count of 166), pintail (peak count of 39), black-tailed godwit (peak count of 219) and redshank (peak count of 57) albeit sporadically over the winter period. There was no pattern to species utilisation of this area regarding time of day or tidal state and the key area used by these birds falls outwith a 500 m buffer around the Project and therefore the species would not be impacted by any construction related activities.
- 5.11.15 It was considered that although Woolston Eyes forms high potential FLL within 500 m of the Project, the spur terminus here lies between Woolston Eyes and a currently operational industrial plant and therefore no impact pathways on any qualifying species using such FLL are predicted due to this physical barrier.
- 5.11.16 It is considered that there are no pathways for any effects associated with disturbance from the construction and decommissioning of the Project, on any qualifying features using FLL.
- 5.11.17 Therefore, the preliminary conclusion is that the magnitude of change on the qualifying features of the Mersey Estuary SPA and Ramsar Site would be low, with any resulting negative effect expected to be **Not Significant** on these ecological features of European/International importance.

*Operational phase*

- 5.11.18 There is the potential for qualifying bird species of the Mersey Estuary SPA and Ramsar site to be deterred from using functionally linked land surrounding (and within) the Preliminary Order Limits for foraging and roosting, due to disturbance also during the operational phase of the Proposed Development (due to noise, vehicles, machinery and the presence of operatives).
- 5.11.19 Based on the distributions and known habitat preferences of the qualifying features of the Mersey Estuary SPA and Ramsar site, all qualifying species (shelduck, teal, pintail, golden plover, black-tailed godwit, dunlin and redshank) could potentially utilise FLL within the Project and/or within a 500 m buffer.
- 5.11.20 Further consideration is given in the previous section, to all species recorded within potential FLL considered to be vulnerable to disturbance from the Project.
- 5.11.21 Therefore, the preliminary conclusion is that the magnitude of change on the qualifying features of the Mersey Estuary SPA, Ramsar Site and SSSI would be low, with any resulting negative effect expected to be **Not Significant** on these ecological features of European/International importance.

### Non-statutory designated biodiversity sites located within the Preliminary Order Limits: See **Table 5.16**

*Detailed baseline – overview*

- 5.11.22 The baseline data collected to date is presented in **Section 5.6.3**.

*Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity*

*Construction phase*

- 5.11.23 The embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP (air quality management and dust suppression measures), 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 9 – Management of invasive species, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works and 12 – Protection of watercourses**. These measures would minimise loss and fragmentation of habitat and avoid features, which are suitable for, or confirmed to support faunal interest features as far as practicable. Several design options for the Project are currently being considered (see **Chapter 2: The Project**) which depending on design may result in land take within non-statutory designated biodiversity sites, and these options are discussed below.
- 5.11.24 There could be permanent loss of habitat interest features, or habitat that supports faunal interest features. Approximately 7.5km of the pipeline route along the West Corridor are located within Frodsham, Helsby and Ince Marshes LWS where land

take/land use change would be temporary during construction. Considering the key habitat interest features of this LWS (see **Table 5.11**), which includes intertidal mudflats, saltmarsh, wetlands and neutral grassland, the Project is predominantly located within lower value habitats, primarily agricultural land. Construction areas such as pipe laydown areas have been avoided within this site to minimise temporary land take. Where crossings of hedgerows and ditches around field boundaries are necessary, with the latter potentially supporting water vole, embedded environmental measures (see **Section 5.7** and the respective assessment sections for these features below), would avoid or minimise the effects on these interest features.

- 5.11.25 Where relevant to inform assessment, habitat and faunal interest features of non-statutory designated biodiversity sites with potential to be directly affected by the Project will be subject to surveys. Therefore, the status of these features and thus their value is yet to be determined, and the assessment will be updated in the ES. The requirement for any compensation of habitat loss would be identified in line with the EclA mitigation hierarchy and would be included in the ES following the final design of the Project, while BNG will be provided as separate enhancement.
- 5.11.26 Without further information on faunal interest features it is not possible to discount that construction works could also result in the loss of fauna and/or damage, destruction or obstruction of species rest sites. If embedded environmental measures cannot sufficiently avoid any negative impacts on faunal interest features if found during ongoing surveys, separate specific mitigation (including obtaining licences from Natural England where relevant) would be developed following further surveys (to be detailed at ES stage).
- 5.11.27 Engagement with relevant landowners and stakeholders will be undertaken during the design of mitigation and compensation within LWS sites.
- 5.11.28 Therefore, with the incorporation of appropriate mitigation and compensation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on non-statutory designated biodiversity sites located within the Preliminary Order Limits, due to land take/land cover change and fragmentation of habitat, would be low. The resulting negative effect is expected to be **Not Significant** on non-statutory designated biodiversity sites located within the Preliminary Order Limits features of County importance.

### *Operational phase*

- 5.11.29 The habitat and faunal interest features that could be affected by the Project and their importance will be subject to assessment following the completion of ongoing surveys. Therefore, the status of these features is yet to be determined, and the assessment will be updated in the ES. Nevertheless, there is potential for loss and/or fragmentation of habitat to occur in operational maintenance, albeit to a lesser extent than during the construction phase.
- 5.11.30 Without further information it is not possible to discount that operation including routine maintenance works could result in the loss of fauna and/or damage, destruction or obstruction of species rest sites. However, as for construction phase, if embedded environmental measures cannot sufficiently avoid any

negative impacts on faunal interest features if found during ongoing surveys, separate specific mitigation (including obtaining licences from Natural England where relevant) would be developed following further surveys (to be detailed at ES stage).

- 5.11.31 Thus, the preliminary conclusion is that the magnitude of change on non-statutory designated biodiversity sites located within the Preliminary Order Limits due to land take/land cover change and fragmentation of habitat, would be very low. This would result in a negative effect expected to be **Not Significant** on non-statutory designated biodiversity sites located within the Preliminary Order Limits features of County importance.

#### *Increased noise, vibration, light and movement levels (resulting in disturbance)*

##### *Construction phase*

- 5.11.32 Where present, sensitive faunal interest features may be affected by noise, vibration and lighting associated with construction. However, fauna are mobile and there is likely to be ample opportunity to avoid such disturbance during foraging, commuting and migrating without suffering a loss of fitness. Further to this, the embedded environmental measures applicable are: **2 – Standard best practice, 4 – CoCP, 8 – Protection of retained habitats, and 13 – Sensitive lighting design and other specific measures** (see **Section 5.7** and **Table 5.13**). These measures would minimise the effect of disturbance on sensitive faunal interest features associated with increased noise/vibration/light and would negate any potential negative effects upon foraging/commuting/migrating individuals.
- 5.11.33 Without further information on locations of rest sites of sensitive faunal interest features it is not possible to discount that construction works could also result in the damage, destruction or obstruction or other effects on rest sites, or that resting fauna could be disturbed. If embedded environmental measures cannot sufficiently avoid any negative impacts on faunal interest features, if found during ongoing surveys, separate specific mitigation (including obtaining licences from Natural England where relevant) would be developed following further surveys (to be detailed at ES stage).
- 5.11.34 Therefore, with the incorporation of appropriate specific mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on sensitive faunal interest features due to increased noise/vibration/light would be very low. This would result in a negative effect expected to be **Not Significant** on sensitive faunal interest features of non-statutory designated biodiversity sites (located within the Preliminary Order Limits) features of County importance.

##### *Operational phase*

- 5.11.35 Without further information it is not possible to discount that operation including routine maintenance works could result in the disturbance of sensitive faunal interest features or damage, destruction or obstruction of species rest sites (if present). However, as for construction phase, if embedded environmental

measures cannot sufficiently avoid any negative impacts on faunal interest features if found during ongoing surveys, separate specific mitigation (including obtaining licences from Natural England where relevant) would be developed following further surveys (to be detailed at ES stage).

- 5.11.36 Thus, the preliminary conclusion is that the magnitude of change on sensitive faunal interest features of non-statutory designated biodiversity sites located within the Preliminary Order Limits due to increased noise/vibration/light would be very low. This would result in a negative effect expected to be **Not Significant** on sensitive faunal interest features of non-statutory designated biodiversity sites (located within the Preliminary Order Limits) features of County importance.

### *Assessment of Project design options*

- 5.11.37 West Corridor pipeline route options WP1 and WP2 are located within Frodsham, Helsby and Ince Marshes LWS. Both route options cross approximately 1km of predominantly agricultural land, avoiding key habitat interest features of this site. The magnitude of the effect on this site due to land take/land cover change, fragmentation of habitats and increased noise/vibration/light/movement levels would be no greater for either option during construction and operation, and within the magnitude of effect assessed above for non-statutory designated biodiversity sites.
- 5.11.38 Three options are being considered for the location of the Rocksavage HAGI. RSH1 is located within Frodsham, Helsby and Ince Marshes LWS. Due to the extent of this site, permanent land take due to the HAGI and temporary land take due to the construction compound would affect only a small proportion of land within the site, located within agricultural land avoiding key habitat interest features. RSH2 and RSH3 are both located within East Clifton Tip LWS within areas of habitat interest features (including calcareous grassland and open mosaic habitat), where due to the smaller size of the site, permanent and temporary land take due to either HAGI option and associated construction compound would affect a larger proportion of land within the site. The preliminary conclusion is the magnitude of change due to and take/land cover change and fragmentation of habitat would be low and **Not Significant** for RSH1, and moderate and **Significant** for RSH2 and RSH3 on an ecological feature of County importance for the respective individual LWS sites.
- 5.11.39 Five options are being considered for the pipeline route of the North Corridor. NP1 and NP3 avoid non-statutory designated biodiversity sites. NP2 is located immediately adjacent to the eastern boundary of Morts Wood LWS and Rows Wood LWS and bisects mature treelines with connectivity to Rows Wood LWS. Morts Wood LWS is designated for lowland mixed deciduous woodland that connects to a chain of other small woodlands and provides a corridor for wildlife, and is located adjacent to Rows Wood which is designated for ancient woodland. The preliminary conclusion is the magnitude of change due fragmentation of habitat would be very low and **Not Significant** for NP2 on an ecological feature of County importance for the respective LWS sites.
- 5.11.40 NP4 and NP5 are associated with High Walton HAGI options HWH1 and HWH2 respectively. Both pipeline route options NP4 and NP5 bisect Moore Nature Reserve LWS using open cut trenches. High Walton HAGI option HWH1 and

associated construction compound are located Moore Nature Reserve LWS, while HWH2 is located outside but adjacent to this LWS site. NP4/HWH1 and NP5 would result in a similar level of temporary land take, while HWH1 would result in a small amount of permanent land take. These options would affect a small proportion of this large LWS site, located within habitat types that are more extensive throughout the site. The preliminary conclusion is the magnitude of change due land take/land use change and fragmentation of habitat would be low and **Not Significant** for NP4/HWH1 and NP5 on an ecological feature of County importance for the LWS site.

- 5.11.41 NP5 crosses Upper Moss Side Farm LWS which is an intensive arable farm where key interest features include ditches, hedgerows, a pond and areas of set aside, and associated botanical interest and farmland bird fauna. NP5 would involve open cut crossing of three boundary features which includes hedgerows, ditches and areas of arable field, and all land take would be temporary. Embedded environmental measures would minimise the extent of land take and impacts on faunal interest features. Similar arable habitats are present within the remaining larger proportion of the LWS and the adjoining land within the locality, and all habitat that would be impacted is connected to other areas of similar habitat that would be unaffected, thus minimising fragmentation. Therefore, the preliminary conclusion is the magnitude of change due land take/land use change and fragmentation of habitat, and increased noise/vibration/light, would be low and **Not Significant** for on an ecological feature of County importance for the LWS site.
- 5.11.42 NP4 infringes a minor amount of habitat at the northeast corner of Norton Marsh and Upper Moss Side Fields LWS, avoiding the key habitat interest features of the site. The embedded environmental measures would minimise impacts on the faunal interest features of the site and adjoining habitats, therefore the preliminary conclusion is the magnitude of change due land take/land use change and fragmentation of habitat, and increased noise/vibration/light (for faunal interest features) would be very low and **Not Significant** for on an ecological feature of County importance for the LWS site.
- 5.11.43 Four options are being considered for the pipeline route of the South Corridor. All four options involve trenchless crossings of Weaver Valley/Newbridge Pool LWS. SP2 crosses Weaver Valley/Newbridge Pool LWS only. SP1 would involve two additional trenchless crossings beneath Heys Wood and the Riddings LWS. Trenchless crossings would avoid impacts of land take/land use change and fragmentation of habitat on these LWS sites.
- 5.11.44 In addition to the trenchless crossing of Weaver Valley/Newbridge Pool LWS, SP3 and SP4 would involve one open cut crossing of Rookery Wood and Pool LWS, while SP4 would involve a second open cut crossing of Bradford Mill Wood and Marsh LWS, resulting in temporary land take of a small proportion of the woodland interest features within these sites, and temporary fragmentation of habitat that forms a wildlife corridor connecting to the adjoining Weaver Valley/Newbridge Pool LWS and associated habitats along the Weaver Navigation corridor. The preliminary conclusion is the magnitude of change due land take/land use change and fragmentation of habitat would be low and **Not Significant** for SP3 and SP4 on an ecological feature of County importance for the respective LWS sites.

- 5.11.45 Two options are being considered for Runcorn/Rocksavage Spur pipeline route. RSp1 would involve trenchless crossings of the Weaver Navigation and River Weaver, requiring two trenchless crossing compounds and a section of open cut trench within Frodsham Field Studies Centre LWS, and one trenchless crossing compound within Clifton Lagoon LWS. This option would temporarily affect a moderate amount of land within each of these LWS sites which potentially supports site interest features. The preliminary conclusion is the magnitude of change due temporary land take/land use change and fragmentation of habitat would be low to moderate and **Not Significant** for RSp1 on an ecological feature of County importance for the respective LWS sites.
- 5.11.46 RSp2 would involve a trenchless crossing of the Weaver Navigation and River Weaver, passing beneath Frodsham Field Studies Centre LWS avoiding impacts of land take/land use change and fragmentation on this site. This trenchless crossing would require a compound in Frodsham, Helsby and Ince Marshes LWS, and due to the extent of this site, temporary land take due to the trenchless crossing compound would affect only a small proportion of land within the site, located within agricultural land avoiding key habitat interest features. The preliminary conclusion is the magnitude of change due land take/land use change and fragmentation of habitat would be very low and **Not Significant** for RSp2 on an ecological feature of County importance for this LWS site.
- 5.11.47 Two options are being considered for the Warrington Spurs pipeline route. WSp1 would require a trenchless crossing beneath Walton Locks LWS, which would avoid impacts of land take/land use change and fragmentation of habitats on this LWS site. WSp2 avoids LWS sites.

**Non-statutory designated biodiversity sites located within <0.5km of the Preliminary Order Limits outside the Preliminary Order Limits: See Table 5.16**

#### *Detailed baseline – overview*

- 5.11.48 The baseline data collected to date is presented in **Section 5.6.3**.

#### *Predicted effects and their significance*

*Increased noise, vibration, light and movement levels (resulting in disturbance)*

#### *Construction phase*

- 5.11.49 Where present, sensitive faunal interest features may be affected by noise, vibration and lighting associated with construction. However, fauna are mobile and there is likely to be ample opportunity to avoid such disturbance during foraging, commuting and migrating without suffering a loss of fitness. Further to this, the embedded environmental measures applicable are: **2 – Standard best practice, 4 – CoCP, 8 – Protection of retained habitats, and 13 – Sensitive lighting design and other specific measures** (see **Section 5.7** and **Table 5.13**). These measures would minimise the effect of disturbance on sensitive faunal interest features associated with increased noise/vibration/light, and would negate any potential negative effects upon foraging/commuting/migrating individuals.

- 5.11.50 Without further information on locations of rest sites of sensitive faunal interest features it is not possible to discount that construction works could also result in the damage, destruction or obstruction or other effects on rest sites, or that resting fauna could be disturbed. If embedded environmental measures cannot sufficiently avoid any negative impacts on faunal interest features if found during ongoing surveys, separate specific mitigation (including obtaining licences from Natural England where relevant) would be developed following further surveys (to be detailed at ES stage).
- 5.11.51 Therefore, with the incorporation of appropriate specific mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on sensitive faunal interest features of non-statutory designated biodiversity sites located within <0.5km of the Preliminary Order Limits outside the Preliminary Order Limits, due to increased noise/vibration/light, would be very low. This would result in a negative effect expected to be **Not Significant** on sensitive faunal interest features of non-statutory designated biodiversity sites (located within <0.5km of the Preliminary Order Limits, outside the Preliminary Order Limits) features of County importance.

### *Operational phase*

- 5.11.52 Without further information it is not possible to discount that operation including routine maintenance works could result in the disturbance of sensitive faunal interest features or damage, destruction or obstruction of species rest sites (if present). However, as for construction phase, if embedded environmental measures cannot sufficiently avoid any negative impacts on faunal interest features if found during ongoing surveys, separate specific mitigation (including obtaining licences from Natural England where relevant) would be developed following further surveys (to be detailed at ES stage).
- 5.11.53 Thus, the preliminary conclusion is that the magnitude of change on sensitive faunal interest features of non-statutory designated biodiversity sites located within <0.5km of the Preliminary Order Limits, outside the Preliminary Order Limits, due to increased noise/vibration/light, would be very low. This would result in a negative effect expected to be **Not Significant** on sensitive faunal interest features of non-statutory designated biodiversity sites (located within <0.5km of the Preliminary Order Limits, outside the Preliminary Order Limits) features of County importance.

## Ancient and semi-ancient woodland/ancient replanted woodland and veteran trees

### *Detailed baseline – overview*

- 5.11.54 The baseline data collected to date is presented in **Section 5.6.3**. Several parcels of ancient woodland have been identified within the Study Area, with the most extensive areas within the Preliminary Order Limits occurring along river corridors such as the Weaver Navigation.

### *Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss; fragmentation of habitats resulting in a reduction in connectivity*

#### *Construction phase*

- 5.11.55 Habitat and arboricultural surveys are ongoing. Therefore, the status and distribution of these features and thus their value is yet to be determined, and the assessment will be updated in the ES.
- 5.11.56 However, embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP (air quality management and dust suppression measures), 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 7 – Protection of ancient/veteran trees, 8 – Protection of retained habitats, 9 – Management of invasive species, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works.** In addition measures included in a Tree and Hedge Management Plan as an output of the Arboriculture Impact Assessment would avoid or minimise the loss of ancient and semi-ancient woodland/ancient replanted woodland and veteran trees if present.
- 5.11.57 Ancient woodland occurs along the Weaver Navigation corridor at Vale Royal Park which is crossed by the South Corridor. Four route options are being considered at this location, with two options, SP1 and SP3, crossing ancient woodland. It is expected that these crossing options would use trenchless crossings to pass beneath the areas of ancient woodland, thus avoiding habitat loss and/or fragmentation.
- 5.11.58 Nevertheless, where impacts cannot be avoided through embedded environmental measures, there could be permanent loss and/or fragmentation of minor areas of ancient and semi-ancient woodland/ancient replanted woodland and veteran trees from direct land take or from works situated adjacent to these features (e.g., which infringe tree canopy or root zones). The requirement for any compensation of habitat loss would be identified in line with the EcIA mitigation hierarchy, and would be included in the ES following the final design of the Project.
- 5.11.59 Considering the embedded environmental measures described, and in the absence of complete baseline information and final design of the Project, the preliminary conclusion is that the magnitude of change on ancient and semi-ancient woodland/ancient replanted woodland and veteran trees, due to land take/land cover change and fragmentation of habitat, would be very low, resulting in a negative effect expected to be **Not Significant** on ancient and semi-ancient woodland/ancient replanted woodland and veteran tree features of National importance.

#### *Operational phase*

- 5.11.60 Habitat and arboricultural surveys are ongoing. Therefore, the status of these features is yet to be determined, and the assessment will be updated in the ES.

- 5.11.61 However, as for construction phase, embedded environmental measures would avoid or minimise the loss of ancient and semi-ancient woodland/ancient replanted woodland and veteran trees if present. Nevertheless, there is potential for loss and/or fragmentation of habitat to occur in operational maintenance, albeit to a lesser extent than during the construction phase. The requirement for any compensation of habitat loss would be identified in line with the EclA mitigation hierarchy, and would be included in the ES following the final design of the Project.
- 5.11.62 Thus, the preliminary conclusion is that the magnitude of change on ancient and semi-ancient woodland/ancient replanted woodland and veteran trees, due to land take/land cover change and fragmentation of habitat, would be very low, resulting in a negative effect expected to be **Not Significant** on ancient and semi-ancient woodland/ancient replanted woodland and veteran tree features of National importance.

### Assessment of Project design options

- 5.11.63 Five options are being considered for the pipeline route of the North Corridor. Of these, NP2 is located immediately adjacent to the eastern boundary of ancient woodland at Rows Wood. The pipeline route bisects mature treelines with connectivity to this woodland, where there would be temporary loss and fragmentation of habitat. The preliminary conclusion is the magnitude of change due fragmentation of habitat would be negligible and **Not Significant** for NP2 on ancient woodland at Rows Wood feature of National importance within the locality.
- 5.11.64 Four options are being considered for the pipeline route of the South Corridor. Of these, SP1 and SP3 would involve trenchless crossings beneath ancient woodland, which would avoid impacts of land take/land use change and fragmentation of habitat of ancient woodland.

## Broad-leaved, semi-natural woodland

### Detailed baseline – overview

- 5.11.65 The baseline data collected to date is presented in **Section 5.6.3**.

### Predicted effects and their significance

*Permanent or temporary land take/land use change resulting in habitat loss; fragmentation of habitats resulting in a reduction in connectivity*

#### Construction phase

- 5.11.66 Habitat and arboricultural surveys are ongoing during 2022. Therefore, the status and distribution of these features and thus their value is yet to be determined, and the assessment will be updated in the ES.
- 5.11.67 However, embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP (air quality management and dust suppression measures), 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained**

**habitats, 9 – Management of invasive species, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works.** In addition measures included in the Tree and Hedge Management Plan as an output of the Arboricultural Impact Assessment would avoid or minimise the loss of broad-leaved semi-natural woodland if present.

- 5.11.68 Nevertheless, there could be permanent loss and/or fragmentation of these features. The requirement for any compensation of habitat loss would be identified in line with the EclA mitigation hierarchy and would be included in the ES following the final design of the Project.
- 5.11.69 Considering the embedded environmental measures described, and in the absence of complete baseline information and final design of the Project, the preliminary conclusion is that the magnitude of change on broad-leaved semi-natural woodland, due to land take/land cover change and fragmentation of habitat, would be very low, resulting in a negative effect expected to be **Not Significant** on broad-leaved semi-natural woodland features of County importance.

### *Operational phase*

- 5.11.70 Habitat and arboricultural surveys are ongoing during 2022. Therefore, the status of these features is yet to be determined, and the assessment will be updated in the ES.
- 5.11.71 However, as for construction phase, embedded environmental measures would avoid or minimise the loss of broad-leaved semi-natural woodland if present. Nevertheless, there is potential for loss and/or fragmentation of habitat to occur in operational maintenance, albeit to a lesser extent than during the construction phase. The requirement for any compensation of habitat loss would be identified in line with the EclA mitigation hierarchy and would be included in the ES following the final design of the Project.
- 5.11.72 Thus, the preliminary conclusion is that the magnitude of change on broad-leaved semi-natural woodland, due to land take/land cover change and fragmentation of habitat, would be very low, resulting in a negative effect expected to be **Not Significant** on broad-leaved semi-natural woodland features of County importance.

### *Assessment of Project design options*

- 5.11.73 One of the three options for the Rocksavage HAGI, RSH3, is located within a stand of deciduous woodland identified on the Priority Habitat Inventory. This area of land is located within an LWS site which includes open mosaic habitat on previously developed land as an interest feature. Open mosaic habitats usually occur through natural colonisation, therefore woodland habitat occurring in this area would potentially be semi-natural. RSH3 would result in the permanent loss of a moderate amount of this stand of woodland which is relatively isolated in the locality. The preliminary conclusion is that the magnitude of change due to land take/land use change and fragmentation of habitat would be moderate and **Significant** for RSH3 on this stand of deciduous woodland feature of County importance for the affected habitat parcel.

- 5.11.74 Two of the options for the pipeline route along the North Corridor, NP4 and NP5, pass through parcels of deciduous woodland identified on the Priority Habitat Inventory, which are potentially semi-natural woodland, with NP5 crossing a greater extent these habitat parcels. This would result in temporary land take and fragmentation of habitat, but the habitat is relatively extensive and well connected within the locality. The preliminary conclusion is the magnitude of change due to land take/land use change and fragmentation of habitat would be very low and **Not Significant** for NP4 and NP5 on parcels of deciduous woodland features of County importance for affected habitat parcels.
- 5.11.75 Four options are being considered for the pipeline route of the South Corridor, where it crosses the Weaver Navigation. Several of these options cross parcels of deciduous woodland recorded on the Priority Habitat Inventory, which is potentially semi-natural considering the extent of woodland habitat along the river corridor and prevalence of ancient woodland in the locality. SP1, SP2 and SP3 involve trenchless crossings of deciduous woodland habitat along the Weaver Navigation corridor, which would avoid impacts of land take/land use change and fragmentation of this habitat type.
- 5.11.76 SP3 and SP4 cross parcels further parcels of deciduous woodland identified on the Priority Habitat Inventory where open cut crossings would result in temporary land take and fragmentation of a small area of woodland habitat. More extensive areas of well-connected woodland habitats exist adjacent to these locations and within the adjoining Weaver Navigation corridor. The preliminary conclusion is the magnitude of change due land take/land use change and fragmentation of habitat would be very low and **Not Significant** for SP3 and SP4 on parcels of deciduous woodland features of County importance for affected habitat parcels.
- 5.11.77 One of the options being considered for the Warrington Spurs, WSp1, would involve a trenchless crossing of parcels of deciduous woodland identified on the Priority Habitat Inventory, which is potentially semi-natural woodland. This would avoid impacts of land take/land use change and fragmentation of this habitat type.

## Hedgerows

- 5.11.78 The baseline data collected to date is presented in **Section 5.6.3**. Hedgerows are scattered throughout the Study Area, regularly occurring as boundary features around agricultural fields and pastures. Most hedgerows are native species-poor, and hedgerow trees are often present.

### *Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss; fragmentation of habitats resulting in a reduction in connectivity*

#### *Construction phase*

- 5.11.79 Habitat and arboricultural surveys are ongoing. Therefore, the status and distribution of these features and thus their value is yet to be determined, and the assessment will be updated in the ES.

- 5.11.80 However, embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP (air quality management and dust suppression measures), 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 9 – Management of invasive species, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works.** In addition measures included in a Tree and Hedge Management Plan as an output of the Arboricultural Impact Assessment would avoid or minimise the loss of hedgerows where present. Any necessary loss of hedgerow is expected to predominantly be limited to temporary loss of only very short sections of each hedgerow. Where hedgerows occur within the Preliminary Order Limits they are usually connected to other hedgerows extending beyond the Preliminary Order Limits that would be unaffected, and thus fragmentation would be very low.
- 5.11.81 Nevertheless, there could be permanent loss and/or fragmentation of these features. The requirement for any compensation of habitat loss would be identified in line with the EcIA mitigation hierarchy and would be included in the ES following the final design of the Project.
- 5.11.82 Considering the embedded environmental measures described, and in the absence of complete baseline information and final design of the Project, the preliminary conclusion is that the magnitude of change on hedgerows, due to land take/land cover change and fragmentation of habitat, would be low, resulting in a negative effect expected to be **Not Significant** on hedgerow features of County importance.

### *Operational phase*

- 5.11.83 Habitat and arboricultural surveys are ongoing. Therefore, the status of these features is yet to be determined, and the assessment will be updated in the ES.
- 5.11.84 However, as for construction phase, embedded environmental measures would avoid or minimise the loss of hedgerows where present. Nevertheless, there is potential for loss and/or fragmentation of habitat to occur in operational maintenance, albeit to a lesser extent than during the construction phase. The requirement for any compensation of habitat loss would be identified in line with the EcIA mitigation hierarchy and would be included in the ES following the final design of the Project.
- 5.11.85 Thus, the preliminary conclusion is that the magnitude of change on hedgerows, due to land take/land cover change and fragmentation of habitat, would be very low, resulting in a negative effect expected to be **Not Significant** on hedgerow features of County importance.

## Standing water (ponds and wet ditches)

### *Detailed baseline – overview*

- 5.11.86 The baseline data collected to date is presented in **Section 5.6.3**. Ponds and wet ditches occur regularly throughout the Study Area, with the latter often occurring along boundaries of agricultural fields and pastures.

### *Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss; fragmentation of habitats resulting in a reduction in connectivity*

#### *Construction phase*

- 5.11.87 Habitat surveys are ongoing. Therefore, the status and distribution of these features and thus their value is yet to be determined, and the assessment will be updated in the ES.
- 5.11.88 However, embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP (air quality management and dust suppression measures), 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 9 – Management of invasive species, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 12 – Protection of watercourses.** These measures would avoid or minimise the loss of standing water features where present.
- 5.11.89 Ditch crossings would predominantly be via open cut trench and is expected to predominantly be limited to temporary loss of only very short sections of each wet ditch. Where wet ditches occur within the Preliminary Order Limits they are often connected to other wet ditches extending beyond the Preliminary Order Limits that would be unaffected, and thus fragmentation would be very low.
- 5.11.90 Nevertheless, there could be permanent loss and/or fragmentation of these features. The requirement for any compensation of habitat loss would be identified in line with the EcIA mitigation hierarchy and would be included in the ES following the final design of the Project.
- 5.11.91 Considering the embedded environmental measures described, and in the absence of complete baseline information and final design of the Project, the preliminary conclusion is that the magnitude of change on standing water features, due to land take/land cover change and fragmentation of habitat, would be low, resulting in a negative effect expected to be **Not Significant** on standing water features of County importance.

#### *Operational phase*

- 5.11.92 Habitat surveys are ongoing. Therefore, the status of these features is yet to be determined, and the assessment will be updated in the ES.
- 5.11.93 However, as for construction phase, embedded environmental measures would avoid or minimise the loss of standing water features where present. Nevertheless, there is potential for loss and/or fragmentation of habitat to occur in operational maintenance, albeit to a lesser extent than during the construction phase. The requirement for any compensation of habitat loss would be identified in line with the EcIA mitigation hierarchy and would be included in the ES following the final design of the Project.

- 5.11.94 Thus, the preliminary conclusion is that the magnitude of change on standing water features, due to land take/land cover change and fragmentation of habitat, would be very low, resulting in a negative effect expected to be **Not Significant** on standing water feature of County importance.

## Running water (rivers, streams and ditches)

### *Detailed baseline – overview*

- 5.11.95 The baseline data collected to date is presented in **Section 5.6.3**. The Preliminary Order Limits are bisected by a range of water courses including main rivers (e.g. the River Mersey and River Weaver), canals (e.g. the Weaver Navigation, Manchester Ship Canal, Trent and Mersey Canal, Bridgewater Canal and St Helens Canal), minor rivers and streams, and ditches. Ditches are the most frequently occurring water courses, often occurring as drains along boundaries of agricultural fields and pastures.

### *Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss; fragmentation of habitats resulting in a reduction in connectivity*

#### *Construction phase*

- 5.11.96 Habitat surveys are ongoing. Therefore, the status and distribution of these features and thus their value is yet to be determined, and the assessment will be updated in the ES.
- 5.11.97 However, embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP (air quality management and dust suppression measures), 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 9 – Management of invasive species, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 12 – Protection of watercourses**. These measures would avoid or minimise the loss of running water features where present.
- 5.11.98 Nevertheless, there could be permanent loss and/or fragmentation of these features. Watercourse crossing methods vary depending on the size of watercourse, with HDD used to cross main rivers and canals, microtunnel used to cross some canals and minor rivers, avoiding habitat loss or fragmentation of main watercourses. Open cut trenches would be used to cross the majority of ditches and is expected to predominantly be limited to temporary loss of only very short sections of each ditch. Where running water ditches occur within the Preliminary Order Limits they are often connected to other ditches extending beyond the Preliminary Order Limits that would be unaffected, and thus fragmentation would be very low.

- 5.11.99 The requirement for any compensation of habitat loss would be identified in line with the EclA mitigation hierarchy and would be included in the ES following the final design of the Project.
- 5.11.100 Considering the embedded environmental measures described, and in the absence of complete baseline information and final design of the Project. The preliminary conclusion is that the magnitude of change on running water features, due to land take/land cover change and fragmentation of habitat, would be low, resulting in a negative effect expected to be **Not Significant** on an running water feature of County importance.

### *Operational phase*

- 5.11.101 Habitat surveys are ongoing. Therefore, the status of these features is yet to be determined, and the assessment will be updated in the ES.
- 5.11.102 However, as for construction phase, embedded environmental measures would avoid or minimise the loss of running water features where present. Nevertheless, there is potential for loss and/or fragmentation of habitat to occur in operational maintenance, albeit to a lesser extent than during the construction phase and likely restricted to minor watercourses/ditches. The requirement for any compensation of habitat loss would be identified in line with the EclA mitigation hierarchy and would be included in the ES following the final design of the Project.
- 5.11.103 Thus, the preliminary conclusion is that the magnitude of change on running water features, due to land take/land cover change and fragmentation of habitat, would be very low, resulting in a negative effect expected to be **Not Significant** on an running water feature of County importance.

### *Assessment of Project design options*

- 5.11.104 Four options are being considered for the pipeline route of the South Corridor, all of which would involve trenchless crossings of the Weaver Navigation, which would avoid impacts of land take/land use change and fragmentation of this habitat type.
- 5.11.105 One of the options being considered for the Warrington Spurs, WSp2, would involve two trenchless crossings of the River Mersey, which would avoid impacts of land take/land use change and fragmentation of this habitat type.

### *Other HPIs/Other non-priority habitats with biodiversity benefit*

#### *Detailed baseline – overview*

- 5.11.106 The baseline data collected to date is presented in **Section 5.6.3**. The desk study identified a range of HPIs within the Preliminary Order Limits including coastal floodplain and grazing marsh, coastal saltmarsh, lowland calcareous grassland, lowland fens, lowland meadows, lowland raised bog, mudflats, open mosaic habitats on previously developed land, traditional orchard and woodland pasture and parkland.

### *Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss; fragmentation of habitats resulting in a reduction in connectivity*

#### *Construction phase*

- 5.11.107 Habitat surveys are ongoing. Therefore, the status and distribution of these features and thus their value is yet to be determined, and the assessment will be updated in the ES.
- 5.11.108 However, embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP (air quality management and dust suppression measures), 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 9 – Management of invasive species, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 12 – Protection of watercourses.** These measures would avoid or minimise the loss of these features where present.
- 5.11.109 Nevertheless, there could be permanent loss and/or fragmentation of these features. The requirement for any compensation of habitat loss would be identified in line with the EcIA mitigation hierarchy and would be included in the ES following the final design of the Project.
- 5.11.110 Considering the embedded environmental measures described, and in the absence of complete baseline information and final design of the Project, the preliminary conclusion is that the magnitude of change on these features, due to land take/land cover change and fragmentation of habitat, would be low, resulting in a negative effect expected to be **Not Significant** on an ecological feature of County to Local importance<sup>109</sup>.

#### *Operational phase*

- 5.11.111 Habitat surveys are ongoing. Therefore, the status of these features is yet to be determined, and the assessment will be updated in the ES.
- 5.11.112 However, as for construction phase, embedded environmental measures would avoid or minimise the loss of these features where present. Nevertheless, there is potential for loss and/or fragmentation of habitat to occur in operational maintenance, albeit to a lesser extent than during the construction phase. The requirement for any compensation of habitat loss would be identified in line with the EcIA mitigation hierarchy and would be included in the ES following the final design of the Project.
- 5.11.113 Thus, the preliminary conclusion is that the magnitude of change on these features, due to land take/land cover change and fragmentation of habitat, would be very low, resulting in a negative effect expected to be **Not Significant** on a range of HPis (within the Preliminary Order Limits) features of County to Local importance<sup>109</sup>.

### Assessment of Project design options

- 5.11.114 One of the options for the pipeline route along the North Corridor, NP4, passes through parcels of coastal floodplain and grazing marsh. This would result in temporary land take and fragmentation of habitat, but the habitat is relatively extensive and well connected within the locality. The preliminary conclusion is the magnitude of change due land take/land use change and fragmentation of habitat would be very low and **Not Significant** for NP4 on parcels of coastal floodplain and grazing marsh features of County importance for affected habitat parcels.
- 5.11.115 One of the options for the Runcorn/Rocksavage Spur, RSp1, crosses lowland calcareous grassland, and a trenchless crossing compound associated with this spur is located in this habitat parcel. This would result in temporary loss of a moderate amount of this stand of lowland calcareous grassland which is relatively isolated in the locality. The preliminary conclusion is the magnitude of change due land take/land use change and fragmentation of habitat would be moderate and **Not Significant** for RSp1 on lowland calcareous grassland feature of County importance for the affected habitat parcel.
- 5.11.116 One of the options being considered for the Warrington Spurs, WSp1, would involve a trenchless crossing of the mudflat, which would avoid impacts of land take/land use change and fragmentation of this habitat type.
- 5.11.117 One of the options being considered for the Northwich Spur, NSp2, crosses a narrow tract of 'good quality semi-improved grassland' and 'no main habitat but additional habitats present' are recorded on the Priority Habitat Inventory but do not otherwise correspond with key HPI habitat types. The spur route would result in temporary loss of a very small area of habitat at the edge of each habitat parcel, with more extensive areas of habitat being unaffected in the locality. The preliminary conclusion is the magnitude of change due land take/land use change and fragmentation of habitat would be negligible and **Not Significant** for NSp2 on good quality semi-improved grassland and other habitats recorded on the Priority Habitat Inventory features of County importance for the affected habitat parcels.

## Bats

### Detailed baseline – overview

- 5.11.118 The baseline data collected to date is presented in **Section 5.6.3**.
- 5.11.119 During the preliminary field surveys, a number of individual trees, blocks of woodland and buildings within the Preliminary Order Limits were noted to have suitability to support roosting bats Potential Roost Features (PRFs); surveys are on-going.

### *Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity*

#### *Construction phase*

- 5.11.120 The embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 13 – Sensitive lighting design, 14 – Construction traffic speed limits, and 15 – Pre-construction update surveys.** These measures would minimise loss and fragmentation of habitat and avoid features which are either suitable or confirmed roosts as far as practicable. Nevertheless, there could be permanent loss of suitable foraging and commuting habitat for bats. Bats are mobile species and extensive areas of suitable well-connected habitat for foraging would remain surrounding most of the Project, which would not be affected.
- 5.11.121 There is potential for fragmentation of habitat to occur due to reduction of suitable habitat where it provides linear habitat features, such as the Weaver Navigation Canal, which is lined in part with mature trees and scrub. Such features in areas of urban fringe may potentially provide a key habitat linkage for bats commuting between bat roost(s) on buildings and foraging grounds within the wider landscape. All such habitat features with potential to support foraging and commuting bats that could be affected by the Project will be subject to bat activity monitoring during 2022. Therefore, the status of these features and thus their value to bats is yet to be determined, and the assessment will be updated in the ES.
- 5.11.122 Without further information on locations of bat roosts it is not possible to discount that construction works could also result in the damage, destruction or obstruction or other effects to the viability of one or more roosts (of any type), or that roosts could be disturbed. If embedded environmental measures cannot sufficiently avoid any negative impacts on a bat roost if found during ongoing surveys, separate specific mitigation in the form of an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)) from Natural England would be obtained for the Project to proceed while avoiding contravening legislation. By default, an EPS licence does not allow for a significant negative effect on the favourable conservation status (FCS) of those species affected and usually requires mitigation for habitat loss. Therefore, with the incorporation of appropriate licensable mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on bats and their roosts due to land take/land cover change, would be very low, resulting in a negative effect expected to be **Not Significant** on bat features of County importance.

*Operational phase*

- 5.11.123 There is potential for fragmentation of habitat to occur due to reduction of suitable habitat where it provides linear habitat features, such as the Weaver Navigation Canal which is lined in part with mature trees and scrub. Such features in areas of urban fringe may potentially provide a key habitat linkage for bats commuting between bat roost(s) on buildings and foraging grounds within the wider landscape. All such habitat features with potential to support foraging and commuting bats that could be affected by the Project will be subject to bat activity monitoring during 2022. Therefore, the status of these features and thus their value to bats is yet to be determined, and the assessment will be updated in the ES.
- 5.11.124 Without further information on locations of bat roosts it is not possible to discount that operation including routine maintenance works could result in the damage, destruction or obstruction or other effects to the viability of one or more roosts (of any type), or that roosts could be disturbed during the operational phase.
- 5.11.125 However, as for construction phase, if embedded environmental measures cannot sufficiently avoid any negative impacts on any bat roost, separate specific mitigation in the form of an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)) from Natural England would be obtained that requires that the FCS of the feature is not significantly affected.
- 5.11.126 Thus, the preliminary conclusion is that the magnitude of change on bats and their roosts due to land take/land cover change, would be very low, resulting in a negative effect expected to be **Not Significant** on a bat features of County importance.

*Increased noise, vibration, light and movement levels (resulting in disturbance)**Construction phase*

- 5.11.127 Bats may be affected by noise, vibration and lighting associated with construction. However, bats are mobile and there is likely to be ample opportunity to avoid such disturbance during foraging, commuting and migrating without suffering a loss of fitness. Further to this, the embedded environmental measures applicable are **8 – Protection of retained habitats, and 13 – Sensitive lighting design and other specific measures** (see **Section 5.7** and **Table 5.13**). These measures would minimise the effect of disturbance on bats associated with increased noise/vibration/light and would negate any potential negative effects upon foraging/commuting/migrating individuals.
- 5.11.128 Without further information on locations of bat roosts it is not possible to discount that construction works could also result in the damage, destruction or obstruction or other effects to the viability of one or more roosts (of any type), or that roosts could be disturbed. If embedded environmental measures cannot sufficiently avoid any negative impacts on a bat roost if found during ongoing surveys, separate specific mitigation in the form of an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)) from Natural England would be obtained for the Project to proceed while avoiding contravening legislation. By default, an EPS licence does not allow for a significant negative

effect on the favourable conservation status of those species affected and usually requires mitigation for habitat loss. Therefore, with the incorporation of appropriate licensable mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on bats and their roosts due to increased noise/vibration/light would be very low, resulting in a negative effect expected to be **Not Significant** on bat features of County importance.

### *Operational phase*

- 5.11.129 Without further information on locations of bat roosts it is not possible to discount that operation including routine maintenance works could result in the damage, destruction or obstruction or other effects to the viability of one or more roosts (of any type), or that roosts could be disturbed during the operational phase.
- 5.11.130 However, as for construction phase, if embedded environmental measures cannot sufficiently avoid any negative impacts on any bat roost, separate specific mitigation in the form of an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)) from Natural England would be obtained that requires that the FCS of the feature is not significantly affected.
- 5.11.131 Thus, the preliminary conclusion is that the magnitude of change on bats and their roosts due to increased noise/vibration/light in operation would be very low, resulting in a negative effect expected to be **Not Significant** on bat features of County importance.

### *Assessment of Project design options*

- 5.11.132 Three options are being considered for the Rocksavage HAGI location. Of these, RSH1 is located within an agricultural field with scattered hedgerows on the margins, which is of low value to bats, while other more extensive areas of suitable habitat are present in the locality. Likely effects on bats would be limited to indirect disturbance of commuting/foraging bats due to increased light/noise/vibration. Options RSH2 and RSH3 are located within higher value habitat for commuting and foraging bats, and potentially roosting bats for RSH3, where a mix of grassland, open mosaic habitat and woodland are present between the Weaver Navigation and River Weaver. RSH2 and RSH3 would result in permanent loss of a small areas of suitable commuting/foraging habitat, and potentially roost habitat for RSH3, and indirect disturbance of commuting/foraging bats due to increased light/noise/vibration. However, the embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on bats and their roosts due to land take/land cover change and increased light/noise/vibration would be negligible and **Not Significant** for RSH1 and low and **Not Significant** for RSH2 and RSH3, on bat features of County importance in the locality.
- 5.11.133 Of the options being considered for the pipeline route of the North Corridor, NP2 is located immediately adjacent to the eastern boundary of ancient woodland and other connected woodland habitats. The woodland edge and treeline habitats are likely to be suitable for foraging and commuting bats, while mature trees are

potentially suitable for roosting bats. Pipeline construction may therefore result in temporary loss and fragmentation of a small amount of foraging and commuting habitat and suitable roost habitat, while increased light/noise/vibration may result in temporary indirect disturbance of commuting, foraging and roosting bats.

However, the embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on bats and their roosts due to land take/land cover change and increased light/noise/vibration would be very low and **Not Significant** for NP2 on bat features of County importance in the locality.

- 5.11.134 Two of the options for the pipeline route along the North Corridor, NP4 and NP5, pass through parcels of woodland habitat which may be suitable for foraging, commuting and roosting bats. These options would result in similar levels of temporary loss and fragmentation of suitable habitat. However, more extensive areas of well-connected woodland habitat are present adjacent to these pipeline route options, and the embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on bats and their roosts due to land take/land cover change and increased light/noise/vibration would be very low and **Not Significant** for NP4 and NP5 on bat features of County importance in the locality.
- 5.11.135 Four options are being considered for the pipeline route of the South Corridor. All four options, SP1-4, are located close to or within mature woodlands adjoining the Weaver Navigation corridor where there is relatively extensive and well-connected woodland and river corridor habitat that provides suitable habitat for commuting, foraging and potentially roosting bats. While trenchless crossings avoid loss of habitat in the most extensive areas of woodland and river corridor habitat, SP1-4 all include trenchless crossing compounds located adjacent to woodland blocks, where increased light/noise/vibration may result in temporary indirect disturbance of commuting, foraging and roosting bats. Options SP3 and SP4 also cross narrow tracts of mature woodland where open cut crossings would result in temporary land take and fragmentation of a small amount of commuting, foraging and potentially roosting habitat, while increased light/noise/vibration may result in indirect disturbance of bats using adjacent habitat.
- 5.11.136 The embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on bats and their roosts due to land take/land cover change and increased light/noise/vibration would be very low and **Not Significant** for SP1 and SP2, and low and **Not Significant** for SP3 and SP4, on bat features of County importance in the locality.
- 5.11.137 Two options are being considered for Runcorn/Rocksavage Spur pipeline route, which cross suitable bat commuting/foraging and potential roosting habitats along the corridors of the Weaver Navigation, River Weaver and the land surrounding Frodsham Substation located between the two watercourses. Both options, RSp1 and RSp2, would involve trenchless crossings of these watercourses, resulting in temporary loss of suitable habitat for bats within the trenchless crossing compounds, and indirect disturbance of foraging/commuting and potentially

roosting bats due to increased light/noise/vibration. While RSp2 would involve a single trenchless crossing of both watercourses and the intervening land, RSp1 would require two trenchless crossings (crossing each watercourse separately) and a section of open cut trench, therefore magnitude of the effect would be greater for RSp1. However, the embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on bats and their roosts due to land take/land cover change and increased light/noise/vibration would be low and **Not Significant** for RSp1, and very low and **Not Significant** for RSp2, on bat features of County importance in the locality.

## Great crested newt

### *Detailed baseline – overview*

- 5.11.138 The baseline data collected to date is presented in **Section 5.6.3**.
- 5.11.139 Data gathering in 2022 and 2023 will be conducted in St Helens district. The preliminary assessment below reflects effects only for that area as DLL is applying elsewhere.

### *Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity*

#### *Construction phase*

- 5.11.140 The embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 13 – Sensitive lighting design, 14 – Construction traffic speed limits, and 15 – Pre-construction update surveys**. These measures would minimise loss and fragmentation of habitat and avoid features which are either suitable or confirmed roosts as far as practicable. Nevertheless, there could be permanent loss of suitable foraging and commuting habitat for bats. GCN are mobile species and extensive areas of suitable well-connected habitat for breeding and foraging would remain surrounding the majority of the Project which would not be affected.
- 5.11.141 Fragmentation of habitat due to removal or management of linear habitat features may result in reduction of connectivity between hibernation, foraging and breeding sites. These habitat features that could be affected by the Project and their importance will be subject to assessment following the completion of ongoing GCN e DNA surveys. Therefore, the status of these features and thus their value to GCN is yet to be determined, and the assessment will be updated in the ES.
- 5.11.142 Without further information on GCN it is not possible to discount that construction works could result in the loss, damage, destruction or obstruction or other effects

to the viability of one or more breeding ponds or other supporting habitat. If embedded environmental measures cannot sufficiently avoid any negative impacts on GCN if present, separate specific mitigation in the form of an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)) from Natural England would be obtained for the Project to proceed while avoiding contravening legislation. By default, an EPS licence does not allow for a significant negative effect on the favourable conservation status (FCS) of those species affected and usually requires mitigation for habitat loss. Therefore, with the incorporation of appropriate licensable mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on GCN and their habitats due to land take/land cover change, would be low, resulting in a negative effect expected to be **Not Significant** on GCN features of County importance.

### *Operational phase*

- 5.11.143 As for construction, there is potential for fragmentation of habitat to occur in operational maintenance. These habitat features that could be affected by the Project and their importance will be subject to assessment following the completion of ongoing GCN eDNA surveys. Therefore, the status of these features and thus their value to GCN is yet to be determined, and the assessment will be updated in the ES.
- 5.11.144 Without further information on GCN it is not possible to discount that operation including routine maintenance works could result in the loss, damage, destruction or obstruction or other effects to the viability of one or more breeding ponds or other supporting habitat.
- 5.11.145 However, as for construction phase, if embedded environmental measures cannot sufficiently avoid any negative impacts on GCN, separate specific mitigation in the form of an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)) from Natural England would be obtained that requires that the FCS of the feature is not significantly affected.
- 5.11.146 Thus, the preliminary conclusion is that the magnitude of change on GCN and their habitats due to land take/land cover change, would be very low, resulting in a negative effect expected to be **Not Significant** on GCN features of County importance.

### *Otter and water vole*

#### *Detailed baseline – overview*

- 5.11.147 The baseline data collected to date is presented in **Section 5.6.3**.

*Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration, light and movement levels (resulting in disturbance)*

*Construction phase*

5.11.148 The embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 9 – Management of invasive species, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 12 – Protection of watercourses, 13 – Sensitive lighting design, 14 – Construction traffic speed limits, and 15 – Pre-construction update surveys.** These measures would minimise loss, damage and fragmentation of habitat and avoid features which are either suitable or confirmed holts, resting sites or burrows as far as practicable. Nevertheless, there could be permanent loss of suitable refuge, foraging and commuting habitat and disturbance to otter and water vole whilst in the holts, rest areas or burrows. Otter and water vole are mobile and adaptable species and extensive areas of suitable well-connected habitat for foraging would remain surrounding the majority of the Project which would not be affected.

5.11.149 There is potential for fragmentation of habitat to occur due to reduction of suitable habitat where it provides linear habitat features, such as the Weaver Navigation Canal which is lined in part with mature trees and scrub and thus offering commuting, foraging and refuge habitats. Along with several other key watercourses, these features in areas of urban fringe may potentially provide a key habitat linkage for otters and water voles commuting within the wider landscape. All such habitat features with potential to support otter and water vole that could be affected by the Project will be subject to surveys during 2022 and into 2023. Therefore, the status of these features and thus their value to otter and water vole is yet to be determined, and the assessment will be updated in the ES.

Without further information on otter and water vole it is not possible to discount that construction works could result in the loss, damage, destruction or obstruction or other effects to the viability of one or more breeding refuges or other supporting habitat. If embedded environmental measures cannot sufficiently avoid any negative impacts on the species if present, separate specific mitigation in the form of an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)) for otter, or a licence (under the Wildlife and Countryside Act 1981 (as amended)) for water vole, from Natural England would be obtained for the Project to proceed while avoiding contravening legislation. By default, such derogations do not allow for a significant negative effect on the favourable conservation status (FCS) of those species affected and usually requires mitigation for habitat loss. Therefore, with the incorporation of appropriate licensable mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on otter and water vole and their habitats due to land take/land cover change, and increased

noise/vibration/light would be low, resulting in a negative effect expected to be **Not Significant** on otter and water vole features of County to Local importance<sup>109</sup>.

### *Operational phase*

- 5.11.150 As for construction, there is potential for fragmentation of habitat to occur in operational maintenance. These habitat features that could be affected by the Project and their importance will be subject to assessment following the completion of ongoing otter and water vole surveys. Therefore, the status of these features and thus their value to otter and water vole is yet to be determined, and the assessment will be updated in the ES.
- 5.11.151 Without further information on otter and water vole it is not possible to discount that construction works could result in the loss, damage, destruction or obstruction or other effects to the viability of one or more breeding ponds or other supporting habitat.
- 5.11.152 However, as for construction phase, if embedded environmental measures cannot sufficiently avoid any negative impacts on any bat roost, separate specific mitigation in the form of an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)) for otter, or a licence (under the Wildlife and Countryside Act 1981 (as amended)) for water vole, from Natural England would be obtained that requires that the FCS of the feature is not significantly affected.
- 5.11.153 Thus, the preliminary conclusion is that the magnitude of change on otter and water vole and their roosts due to land take/land cover change and increased noise/vibration/light, would be very low, resulting in a negative effect expected to be **Not Significant** on otter and water vole features of County to Local importance<sup>109</sup>.

## **Badger**

### *Detailed baseline – overview*

- 5.11.154 The baseline data collected to date is presented in **Section 5.6.3**. Specific locations are not provided due to confidentiality associated with such sensitive records.

### *Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration, light and movement levels (resulting in disturbance)*

### *Construction phase*

- 5.11.155 The embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 10 – Habitat reinstatement, 11 – Sensitive access and**

**enabling works, 13 – Sensitive lighting design, 14 – Construction traffic speed limits, and 15 – Pre-construction update surveys.** These measures would minimise loss and fragmentation of habitat and avoid features which are either suitable or confirmed setts as far as practicable. Nevertheless, there could be permanent loss of setts, and/or home range foraging and commuting habitat and disturbance to badgers whilst in the setts. Badgers are mobile species and extensive areas of suitable well-connected habitat for foraging would remain surrounding the majority of the Project which would not be affected.

- 5.11.156 There is potential for fragmentation of habitat to occur due to reduction of linear habitat features. Such features in areas of urban fringe may potentially provide a key habitat linkage for badgers commuting between setts and foraging grounds within the wider landscape. All such habitat features with potential to support setts that could be affected by the Project will be subject to surveys during 2022 and into 2023. Therefore, the status of these features and thus their value to badgers is yet to be determined, and the assessment will be updated in the ES.
- 5.11.157 Without further information on locations of setts it is not possible to discount that construction works could also result in the damage, destruction, disturbance to or obstruction of, or other effects to the viability of one or more setts (of any type). If embedded environmental measures cannot sufficiently avoid any negative impacts on a sett, separate specific mitigation in the form of a derogation licence (under the Protection of Badgers Act 1992) would be obtained for the Project to proceed while avoiding contravening legislation.
- 5.11.158 Therefore, with the incorporation of appropriate licensable mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on badgers and their setts due to land take/land cover change, and increased noise/vibration/light would be very low. This would result in a negative effect expected to be **Not Significant** on badger features of Local importance.

### *Operational phase*

- 5.11.159 Without further information on locations of setts it is not possible to discount that operation including routine maintenance works could result in the damage, destruction or obstruction or other effects to the viability of one or more setts (of any type), or that setts could be disturbed during the operational phase.
- 5.11.160 However, as for construction phase, if embedded environmental measures cannot sufficiently avoid any negative impacts, separate specific mitigation in the form of a licence (under the Protection of Badgers Act 1992) from Natural England to ensure that the works proceed without contravening legislation.
- 5.11.161 Thus, the preliminary conclusion is that the magnitude of change on badgers and setts due to land take/land cover change in operation would be very low, resulting in a negative effect expected to be **Not Significant** on a badger features of Local importance.

## Freshwater fish

### *Detailed baseline – overview*

5.11.162 The baseline data collected to date is presented in **Section 5.6.3**.

### *Predicted effects and their significance*

*Increased noise, vibration, light and movement levels (resulting in behavioural avoidance); in channel obstructions and land take resulting in temporary or permanent habitat loss or degradation and/or loss of fauna and/or fragmentation of habitats resulting in a reduction in connectivity*

#### *Construction phase*

- 5.11.163 The embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 9 – Management of invasive species, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 12 – Protection of watercourses, 13 – Sensitive lighting design, and 15 – Pre-construction update surveys**. These measures would minimise disturbance and the loss of habitat suitable for fish, and the obstruction of migratory pathways as far as practicable. Nevertheless, there could be temporary or permanent loss of or damage to suitable salmonid and lamprey spawning and juvenile habitat, as well as disruption to the migratory pathways for fish.
- 5.11.164 All such habitat features with such potential that could be affected by the Project will be subject to surveys during 2022 and into 2023. Therefore, the status of these features and thus their value to fish populations is yet to be determined, and the assessment will be updated in the ES.
- 5.11.165 Without further information on affected fish populations it is not possible to discount that construction works could also result in the damage, destruction or obstruction or other effects to the viability of one or more supporting habitats or that fish could be disturbed. If embedded environmental measures cannot sufficiently avoid any negative impacts on fish populations, separate specific mitigation such as fish relocation would be undertaken prior to construction or alternative habitat enhancement undertaken enabling the Project to proceed while avoiding contravening legislation.
- 5.11.166 Therefore, with the incorporation of appropriate licensable mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on fish due to in channel land take/land cover change, and increased noise/vibration/light would be low. This would result in a negative effect expected to be **Not Significant** on fish features of County importance.

### Operational phase

- 5.11.167 Without further information on fish populations, it is not possible to discount that operation including routine maintenance works could result in the damage, destruction or obstruction or other effects to the habitat of one or more fish population or that fish could be disturbed during the operational phase.
- 5.11.168 However, it is considered that embedded environmental measures will be sufficient to avoid any negative impacts on fish, and that separate specific mitigation measures would not be required to protect the FCS of the feature.
- 5.11.169 Thus, the preliminary conclusion is that the magnitude of change on fish populations due to increased noise/vibration/light during routine maintenance work would be low, resulting in a negative effect expected to be **Not Significant** on fish features of County importance.

## Other freshwater fauna

### Detailed baseline – overview

- 5.11.170 The baseline data collected to date is presented in **Section 5.6.3**.

### Predicted effects and their significance

Permanent or temporary loss of wetted channel bed resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity;

### Construction phase

- 5.11.171 The embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 9 – Management of invasive species, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 12 – Protection of watercourses, 13 – Sensitive lighting design, and 15 – Pre-construction update surveys**. These measures would minimise loss and fragmentation of habitat and avoid features which are either suitable or confirmed for other freshwater fauna features as far as practicable. Nevertheless, there could be permanent loss of or damage to suitable breeding, foraging and commuting habitat.
- 5.11.172 There is potential for destruction, degradation or disturbance of habitat features to occur due to crossing of smaller water courses where they are identified as open cut as set out in the Crossing Schedule in **Appendix 2.A**. Such features may potentially provide a key breeding, foraging and migratory habitat. All such habitat features with such potential that could be affected by the Project will be subject to surveys during 2022 and into 2023. Therefore, the status of these features and thus their value to other freshwater fauna populations is yet to be determined, and the assessment will be updated in the ES.

- 5.11.173 Without further information on affected other freshwater fauna populations it is not possible to discount that construction works could also result in the damage, destruction or obstruction or other effects to the viability of one or more supporting habitats or that other freshwater fauna could be disturbed. If embedded environmental measures cannot sufficiently avoid any negative impacts on other freshwater fauna populations, separate specific mitigation such as relocation (e.g. of white-clawed crayfish) would be obtained for the Project to proceed while avoiding contravening legislation.
- 5.11.174 Therefore, with the incorporation of appropriate licensable mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on other freshwater fauna due to permanent or temporary loss of wetted channel, and increased noise/vibration/light would be low, resulting in a negative effect expected to be **Not Significant** on freshwater fauna features of County importance

### *Operational phase*

- 5.11.175 Without further information on other freshwater fauna populations, it is not possible to discount that operation including routine maintenance works could result in the indirect damage, destruction or obstruction or other effects to the habitat of other freshwater fauna or that other freshwater fauna could be disturbed during the operational phase.
- 5.11.176 However, it is considered that embedded environmental measures will be sufficient to avoid any negative impacts on other freshwater fauna, and that separate specific mitigation measures would not be required to protect the FCS of the feature.
- 5.11.177 Thus, the preliminary conclusion is that the magnitude of change on other freshwater fauna populations due to permanent or temporary loss of wetted channel and increased noise/vibration/light would be low, resulting in a negative effect expected to be **Not Significant** on freshwater fauna features of County importance.

## Schedule 1 breeding birds

### *Detailed baseline – overview*

- 5.11.178 The desk study identified the historical records of the following Schedule 1 species breeding within the Study Area: barn owl, Cetti's warbler, hobby, kingfisher, marsh harrier, peregrine and quail.
- 5.11.179 Schedule 1 bird surveys and other wider ecology surveys undertaken during the 2022 breeding season have recorded the following Schedule 1 species exhibiting breeding behaviour: barn owl, Cetti's warbler, kingfisher, marsh harrier and quail.

*Predicted effects and their significance**Increased noise, vibration, light and movement levels (resulting in disturbance)**Construction phase*

- 5.11.180 Currently there is only interim survey data and historical data regarding the distribution and abundance of breeding Schedule 1 species within the Preliminary Order Limits (and a 500m disturbance buffer). Within the ES a full assessment of potential disturbance effects on Schedule 1 species will be undertaken once the scheduled breeding season survey work is complete. Both pre-construction enabling works and construction activities have the potential for increased noise, vibration, light and movement that may result in disturbance to Schedule 1 birds, if present within 500m and permanent or temporary land take/land use change (e.g. HAGIs) may result in habitat loss or degradation and/or loss of fauna (e.g. nest site removal).
- 5.11.181 However, whilst surveys are as yet incomplete, it can be stated that works (as required under the Wildlife and Countryside Act 1981 (as amended)) within the Preliminary Order Limits and an associated species specific 500 m disturbance buffer will not disturb breeding Schedule 1 birds due to the implementation of embedded environmental measures.
- 5.11.182 Embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats,, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 13 – Sensitive lighting design and other specific measures** (such as visual screening; see **Table 5.13**) and **15 – Pre-construction update surveys**. These measures would minimise the magnitude of any environmental changes associated with the Project.
- 5.11.183 The construction works programme would incorporate and account for all Schedule 1 species nests and avoid, amend or reduce works during sensitive periods i.e. breeding season. Where works are unavoidable during the bird nesting season, appropriate control measures would be followed including pre-works surveys (embedded environmental measure **16 – pre-construction update surveys**) for nests. If a nest is found, measures would be implemented appropriate to the species and may include a defined disturbance minimisation protective buffer, a behavioural method statement with ecological monitoring, and if necessary, suitable screening around working areas to avoid significant human disturbance. The exact nature of the measures and the species involved will be further informed by increased quantities of baseline data and current best practice for each relevant species. Successful implementation of these measures would minimise the risk of disturbing Schedule 1 species, and contravening legislation (Wildlife and Countryside Act 1981 (as amended)).
- 5.11.184 Such site-specific measures (to be detailed further within the ES) would ensure that the magnitude of change is temporary and negligible, and that there would be no impact to the favourable conservation status of breeding Schedule 1 birds. The preliminary conclusion is therefore that effects on breeding Schedule 1 birds due

to increased noise, vibration, light and movement levels (resulting in disturbance) would be negative and assessed as **Not Significant** on breeding Schedule 1 bird features of National importance.

### *Operational phase*

- 5.11.185 Operational activities have the potential for increased noise, vibration, light and movement that may result in disturbance to breeding Schedule 1 birds, if present within 500m.
- 5.11.186 However, whilst surveys are as yet incomplete, it can be stated that works (as required under the Wildlife and Countryside Act 1981 (as amended)) within the Preliminary Order Limits and an associated species specific 500m disturbance buffer will not disturb breeding Schedule 1 birds due to the implementation of embedded environmental measures (see **Section 5.7** and **Table 5.13**).

### *Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna*

### *Construction*

- 5.11.187 The construction works programme would incorporate and account for all Schedule 1 species nests and avoid, amend or reduce works during sensitive periods i.e. breeding season. Where works are unavoidable during the bird nesting season, appropriate control measures would be followed including pre-works surveys (embedded environmental measure **15 – pre-construction update surveys**) for nests. If a nest is found, measures would be implemented appropriate to the species and may include a defined disturbance minimisation protective buffer, a behavioural method statement with ecological monitoring, and if necessary, suitable screening around working areas to avoid significant human disturbance. The exact nature of the measures and the species involved will be further informed by increased quantities of baseline data and current best practice for each relevant species. Successful implementation of these measures would minimise the risk of disturbing Schedule 1 species, and contravening legislation (Wildlife and Countryside Act 1981 (as amended)).
- 5.11.188 Such site-specific measures (to be detailed further within the ES) would ensure that the magnitude of change is temporary and negligible, and that there would be no impact to the favourable conservation status of breeding Schedule 1 birds. The preliminary conclusion is therefore that effects on breeding Schedule 1 birds due to increased noise, vibration, light and movement levels (resulting in disturbance) would be negative and assessed as **Not Significant** on breeding Schedule 1 bird features of National importance.

### *Operational phase*

- 5.11.189 The embedded environmental measures including **11 – Sensitive access and enabling works** and **5 – Sensitive vegetation removal for nesting birds** seeks to avoid direct impacts on nesting Schedule 1 species and would minimise habitat loss wherever possible. Nevertheless, the most extensive permanent habitat loss would be throughout the operation of the HAGIs. Extensive areas of suitable well-

connected habitat for breeding Schedule 1 species would remain surrounding the majority of the Proposed Development which would not be affected; minimising the effects of habitat loss such as displacement.

- 5.11.190 In addition to the embedded environmental measures referred to above, other measures including **8 – Protection of retained habitats** and **13 – Sensitive lighting design**, and other specific embedded mitigation measures should ensure that the resultant effect on this species group as a result of habitat loss is negligible. The preliminary conclusion is that the effect is assessed as **Not Significant** on breeding Schedule 1 bird features of National importance.

## Reptiles

### *Detailed baseline – overview*

- 5.11.191 The baseline data collected to date is presented in **Section 5.6.3**

### *Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity  
Increased noise, vibration, light and movement levels (resulting in disturbance)*

### *Construction phase*

- 5.11.192 The embedded environmental measures applicable are: **2 – Standard best practice**, **3 – Minimise land take and micro-site**, **4 – CoCP**, **5 – Sensitive vegetation removal**, **6 – Maintaining habitat connectivity**, **8 – Protection of retained habitats**, **10 – Habitat reinstatement**, **11 – Sensitive access and enabling works**, **13 – Sensitive lighting design**, **14 – Construction traffic speed limits**, and **15 – Pre-construction update surveys**. These measures would minimise loss and fragmentation of habitat and avoid features which are either suitable or confirmed key reptile sites as far as practicable. Nevertheless, there could be permanent loss of hibernacula, breeding, basking, resting and foraging habitats. Reptiles are mobile species and extensive areas of suitable well-connected habitat would remain surrounding the majority of the Project which would not be affected.
- 5.11.193 There is potential for fragmentation of habitat to occur due to reduction of linear habitat features. Such features in areas of urban fringe may potentially provide a key habitat for reptiles. Habitat features with potential to support key reptile populations that could be affected by the Project will be subject to surveys during 2022 and into 2023. Therefore, the status of these features and thus their value to reptiles is yet to be determined, and the assessment will be updated in the ES.
- 5.11.194 Without further information on locations of key reptile sites it is not possible to discount that construction works could also result in the damage, destruction, disturbance to or obstruction of, or other effects to their viability. If these embedded environmental measures cannot sufficiently avoid any negative impacts, separate specific measures in the form of translocation method statement

would be undertaken for the Project to ensure that the FCS of the feature is not significantly affected.

- 5.11.195 Therefore, with the incorporation of appropriate specific measures which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on reptiles due to land take/land cover change, and increased noise/vibration/light would be low, resulting in a negative effect expected to be **Not Significant** on reptile features of County to Local importance<sup>109</sup>.

### *Operational phase*

- 5.11.196 Without further information on locations of key reptiles sites it is not possible to discount that operation including routine maintenance works could result in the damage, destruction or obstruction or other effects to their viability or that reptiles could be disturbed during the operational phase.
- 5.11.197 However, as for construction phase, if embedded environmental measures cannot sufficiently avoid any negative impacts, separate specific measures in the form of a method statement to ensure that the FCS of the feature is not significantly affected.
- 5.11.198 Thus, the preliminary conclusion is that the magnitude of change on reptiles due to due to land take/land cover change in operation would be very low, resulting in a negative effect expected to be **Not Significant** on reptile features of County to Local importance<sup>109</sup>.

### *Assessment of Project design options*

- 5.11.199 Habitat features with potential to support key reptile populations that could be affected by the Project will be subject to surveys during 2022 and into 2023. Therefore, the status of these features and thus their value to reptiles is yet to be determined.
- 5.11.200 Three options are being considered for the Rocksavage HAGI location. Of these, RSH1 is located within an agricultural field with scattered hedgerows on the margins, which is of negligible value to reptiles. However, RSH2 and RSH3 are located within areas of favourable habitat for reptiles, which based on the type and extent of habitat present could potentially support key reptile populations (though this may be limited due to isolation between the Weaver Navigation and River Weaver). Habitat present includes calcareous grassland and open mosaic habitats on previously developed land. RSH2 and RSH3 would result in permanent loss of a small areas of suitable reptile habitat, and indirect disturbance of reptiles due to increased light/noise/vibration. However, the embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on reptiles due to land take/land cover change and increased light/noise/vibration

<sup>109</sup> Level of importance will be confirmed following further survey work as outlined in **Table 5.8**.

would be low and **Not Significant** for RSH2 and RSH3, on reptile features of County to Local importance<sup>109</sup> in the locality.

5.11.201 Two options are being considered for Runcorn/Rocksavage Spur pipeline route, which cross areas of favourable habitat for reptiles, which based on the type and extent of habitat present could potentially support key reptile populations adjacent to the Weaver Navigation, River Weaver and the land surrounding Frodsham Substation located between the two watercourses. Both options, RSp1 and RSp2, would involve trenchless crossings of these watercourses, resulting in temporary loss of suitable habitat for reptiles within the trenchless crossing compounds and indirect disturbance due to increased light/noise/vibration. The magnitude of the effect would be greater for RSp1 which would require two trenchless crossings (crossing each watercourse separately) and a section of open cut trench, affecting a mix of habitats including wetland, scrub, tall ruderal and calcareous grassland habitat. RSp2 would involve a single trenchless crossing of both watercourses and the intervening land, with favourable reptile habitat being affected at the trenchless crossing compound to the north of the Weaver Navigation, consisting of a mosaic of habitat including bare ground, grassland, tall ruderal vegetation and scrub. However, the embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on reptiles due to land take/land cover change and increased light/noise/vibration would be low and **Not Significant** for RSp1, and very low and **Not Significant** for RSp2, on reptile features of County to Local importance<sup>109</sup> in the locality.

## SPI and other conservation notable terrestrial and aquatic invertebrates

### Detailed baseline – overview

5.11.202 The baseline data collected to date is presented in **Section 5.6.3**.

### Predicted effects and their significance

*Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration, light and movement levels (resulting in disturbance)*

### Construction phase

5.11.203 The embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 13 – Sensitive lighting design, 14 – Construction traffic speed limits, and 15 – Pre-construction update surveys**. These measures would minimise loss and fragmentation of habitat and avoid features which are either suitable or confirmed key invertebrate sites as far as practicable. Nevertheless, there could be permanent loss of supporting habitats.

- 5.11.204 There is potential for fragmentation of habitat to occur due to reduction of connecting habitat features. Such features in these areas of urban fringe may potentially provide a key habitat for invertebrate. Habitat features with potential to support SPI and notable invertebrate populations that could be affected by the Project will be subject to surveys during 2022 and into 2023. Therefore, the status of these features and thus their value is yet to be determined, and the assessment will be updated in the ES.
- 5.11.205 Without further information on locations of SPI and other conservation notable terrestrial and aquatic invertebrate sites it is not possible to discount that construction works could also result in the damage, destruction, disturbance to or obstruction of, or other effects to their viability. If these embedded environmental measures cannot sufficiently avoid any negative impacts, separate specific measures in the form of a method statement would be undertaken for the Project to ensure that the FCS of the feature is not significantly affected.
- 5.11.206 Therefore, with the incorporation of appropriate specific mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on SPI and notable invertebrate due to land take/land cover change, and increased noise/vibration/light would be low, resulting in a negative effect expected to be **Not Significant** on SPI and notable invertebrate features of National to Local importance<sup>109</sup>.

### *Operational phase*

- 5.11.207 Without further information on locations of SPI and notable invertebrate populations it is not possible to discount that operation including routine maintenance works could result in the damage, destruction or other effects to their viability could be disturbed during the operational phase.
- 5.11.208 However, as for construction phase, if these embedded environmental measures cannot sufficiently avoid any negative impacts, separate specific mitigation in the form of separate specific mitigation measures in the form of a method statement to ensure that the works proceed without contravening legislation.
- 5.11.209 Thus, the preliminary conclusion is that the magnitude of change on SPI and notable invertebrates due to land take/land cover change and disturbance effects in operation would be very low, resulting in a negative effect expected to be **Not Significant** on SPI and notable invertebrate features of National to Local importance<sup>109</sup>.

### *Assessment of Project design options*

- 5.11.210 Habitat features with potential to support SPI and notable invertebrate populations that could be affected by the Project will be subject to surveys during 2022 and into 2023. Therefore, the status of these features and thus their value is yet to be determined.
- 5.11.211 Three options are being considered for the Rocksavage HAGI location. Of these, RSH1 is located within an agricultural field with scattered hedgerows on the margins, which is of negligible value to SPI and other conservation notable

terrestrial and aquatic invertebrates. However, RSH2 and RSH3 are located within areas of potentially favourable habitat for invertebrates, which based on the type and extent of habitat present could potentially support notable invertebrate populations. Habitat present includes calcareous grassland and open mosaic habitats on previously developed land. RSH2 and RSH3 would result in permanent loss of a small areas of potentially suitable habitat, and indirect disturbance due to increased light/noise/vibration. However, the embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on SPI and other conservation notable terrestrial and aquatic invertebrates due to land take/land cover change and increased light/noise/vibration would be low and **Not Significant** for RSH2 and RSH3, on SPI and other conservation notable terrestrial and aquatic invertebrates features of National to Local importance<sup>109</sup> in the locality.

- 5.11.212 Two options are being considered for Runcorn/Rocksavage Spur pipeline route, which cross areas of potentially favourable habitat for invertebrates, which based on the type and extent of habitat present could potentially support notable invertebrate populations adjacent to the Weaver Navigation, River Weaver and the land surrounding Frodsham Substation located between the two watercourses. Both options, RSp1 and RSp2, would involve trenchless crossings of these watercourses, resulting in temporary loss of potentially suitable habitat for invertebrates within the trenchless crossing compounds and indirect disturbance due to increased light/noise/vibration. The magnitude of the effect would be greater for RSp1 which would require two trenchless crossings (crossing each watercourse separately) and a section of open cut trench, affecting a mix of habitats including wetland, scrub, tall ruderal and calcareous grassland habitat. RSp2 would involve a single trenchless crossing of both watercourses and the intervening land, with favourable reptile habitat being affected at the trenchless crossing compound to the north of the Weaver Navigation, consisting of a mosaic of habitat including bare ground, grassland, tall ruderal vegetation and scrub. However, the embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on SPI and other conservation notable terrestrial and aquatic invertebrates due to land take/land cover change and increased light/noise/vibration would be low and **Not Significant** for RSp1, and very low and **Not Significant** for RSp2, on SPI and other conservation notable terrestrial and aquatic invertebrates features of National to Local importance<sup>109</sup> in the locality.

## SPI and other protected/conservation notable plant species

### *Detailed baseline – overview*

- 5.11.213 The baseline data collected to date is presented in **Section 5.6.3**.

### *Predicted effects and their significance*

*Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss; fragmentation of habitats resulting in a reduction in connectivity*

#### *Construction phase*

- 5.11.214 The embedded environmental measures applicable are: **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – CoCP, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Protection of retained habitats, 10 – Habitat reinstatement, 11 – Sensitive access and enabling works, 13 – Sensitive lighting design, 14 – Construction traffic speed limits, and 15 – Pre-construction update surveys.** These measures would minimise loss and fragmentation of habitat as far as practicable. Nevertheless, there could be permanent loss of habitats and thus component species.
- 5.11.215 Habitat features with potential to support SPI and notable plant species that could be affected by the Project will be subject to surveys during 2022 and into 2023. Therefore, the status of these features and thus their value is yet to be determined, and the assessment will be updated in the ES.
- 5.11.216 Without further information on locations of SPI and other protected/conservation notable plant species sites it is not possible to discount that construction works could also result in the damage, destruction, or other effects to their viability. If these embedded environmental measures cannot sufficiently avoid any negative impacts, separate specific measures in the form of a method statement would be undertaken for the Project to ensure that the FCS of the feature is not significantly affected.
- 5.11.217 Therefore, with the incorporation of appropriate specific mitigation which would be developed following further surveys (to be detailed at ES stage), in combination with the embedded environmental measures, the preliminary conclusion is that the magnitude of change on SPI and other protected/conservation notable plant species due to land take/land cover change, would be low, resulting in a negative effect expected to be **Not Significant** on SPI and other protected/conservation notable plant species features of National to Local importance<sup>109</sup>.

#### *Operational phase*

- 5.11.218 Without further information on locations of SPI and other protected/conservation notable plant species it is not possible to discount that operation including routine maintenance works could result in the damage, destruction or obstruction or other effects to their viability during the operational phase.
- 5.11.219 However, as for construction phase, if these embedded environmental measures cannot sufficiently avoid any negative impacts, separate specific mitigation in the form of a method statement to ensure that the works proceed without contravening legislation.
- 5.11.220 Thus, the preliminary conclusion is that the magnitude of change on SPI and other protected/conservation notable plant species due to land take/land cover change

and disturbance effects in operation would be very low, resulting in a negative effect expected to be **Not Significant** on SPI and other protected/conservation notable plant species features of National to Local importance<sup>109</sup>.

- 5.11.221 For all scoped in biodiversity features, the full assessment of effects during all Project phases will be provided within the ES following completion of baseline data collection, remaining consultations including specialist technical engagement, final design and final appropriate feature-specific embedded environmental measures.

### *Assessment of Project design options*

- 5.11.222 Habitat features with potential to support SPI and other protected/ conservation notable plant species that could be affected by the Project will be subject to surveys during 2022 and into 2023. Therefore, the status of these features and thus their value is yet to be determined.
- 5.11.223 Three options are being considered for the Rocksavage HAGI location. Of these, RSH1 is located within an agricultural field with scattered hedgerows on the margins, which is of negligible value to SPI and other protected/conservation notable plant species. However, RSH2 and RSH3 are located within areas with potential for SPI and other protected/conservation notable plant species, where habitat present includes calcareous grassland and open mosaic habitats on previously developed land. RSH2 and RSH3 would result in permanent loss of a small areas of potentially suitable habitat. However, the embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on SPI and other protected/conservation notable plant species due to land take/land cover change would be low and **Not Significant** for RSH2 and RSH3, on SPI and other protected/conservation notable plant species features of National to Local importance<sup>109</sup> in the locality.
- 5.11.224 Two options are being considered for Runcorn/Rocksavage Spur pipeline route, which cross areas with potential for SPI and other protected/conservation notable plant species adjacent to the Weaver Navigation, River Weaver and the land surrounding Frodsham Substation located between the two watercourses. Both options, RSp1 and RSp2, would involve trenchless crossings of these watercourses, resulting in temporary loss of habitat with potential for SPI and other protected/conservation notable plant species within the trenchless crossing compounds. The magnitude of the effect would be greater for RSp1 which would require two trenchless crossings (crossing each watercourse separately) and a section of open cut trench, affecting a mix of habitats including wetland, scrub, and calcareous grassland habitat. RSp2 would involve a single trenchless crossing of both watercourses and the intervening land, suitable habitat being affected at the trenchless crossing compound to the north of the Weaver Navigation, consisting of a mosaic of habitat including bare ground, grassland, tall ruderal vegetation and scrub. However, the embedded environmental measures and specific mitigation outlined above would minimise the magnitude of any likely effect. Therefore, the preliminary conclusion is that the magnitude of change on SPI and other protected/conservation notable plant species due to land take/land cover change would be low and **Not Significant** for RSp1, and very low and **Not Significant** for

RSp2, on SPI and other protected/conservation notable plant species features of National to Local importance<sup>109</sup> in the locality.

## 5.12 Preliminary significance conclusions

5.12.1 A summary of the results of the preliminary biodiversity assessment is provided in **Table 5.19**.

Table 5.19 Preliminary summary of significance of effects

| Feature and summary of predicted effects                                                                                                                                                                                                                                                                                                                                                                                                                                        | Importance of feature <sup>1</sup> | Magnitude of change <sup>2</sup>                          | Significance <sup>3</sup> | Summary rationale                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Feature:</b><br><b>Mersey Estuary SPA, Ramsar Site and SSSI: all features</b><br><br><b>Predicted effect:</b> Increased noise, vibration, light and movement levels (resulting in disturbance)                                                                                                                                                                                                                                                                               | European/International/National    | Low (during construction and operation)                   | Not Significant           | Located outside of the Preliminary Order Limits. There are no pathways for any effects associated with disturbance from the construction and decommissioning of the Project, on any qualifying/notified features using FLL. |
| <b>Feature:</b><br><b>Non-statutory designated biodiversity sites located within the Preliminary Order Limits: Rookery Wood and Pool LWS; Clifton Lagoon LWS; Disused Railway Line South of Warrington Road LWS; Ravenhead Ponds LWS; Frodsham, Helsby and Ince Marshes LWS; Vale Royal Wood LWS; East Clifton Tip LWS; Rows Wood LWS; Parkside Farm Wood LWS; Ansdells Wood LWS; Heys Wood and the Riddings LWS; Park Moss Wood LWS; Acton Bridge Meadows LWS; Littledales</b> | County                             | Low (during construction)/<br>Very low (during operation) | Not Significant           | Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.                                                  |

| Feature and summary of predicted effects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Importance of feature <sup>1</sup> | Magnitude of change <sup>2</sup> | Significance <sup>3</sup> | Summary rationale |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------|---------------------------|-------------------|
| <p>Gorse LWS; Anderton Lime Beds LWS; Sinderland Green Wood SBI; Reeve Court Woodland and grassland LWS; Thatto Heath Meadows LWS; Sandiway Golf Course LWS; Upper Mersey Estuary LWS; Rye Grass Pipes LWS; Weaver Valley Country Park LWS; St Helens Canal Disused_A LWS; Newbridge Wood LWS; Latchford Railway Sidings LWS; Pendlebury Brook (SJ493920-SJ515914) LWS; Norton Marsh and Upper Moss Side Fields LWS; Upper Moss Side Farm LWS; Bradford Mill Wood and Marsh LWS; Frodsham Field Studies Centre LWS; Walton Locks LWS; Trent and Mersey Canal, Whatcroft LWS; Sutton Manor LWS; Weaver Valley/Newbridge Pool LWS; Moore Nature Reserve LWS; Sutton Bridge Unused Lagoon LWS</p> <p><u>Predicted effect:</u> Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration, light and movement levels (resulting in disturbance of faunal interest features)</p> |                                    |                                  |                           |                   |

| Feature and summary of predicted effects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Importance of feature <sup>1</sup> | Magnitude of change <sup>2</sup>             | Significance <sup>3</sup> | Summary rationale                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Feature:</b><br/>Non-statutory designated biodiversity sites located within &lt;0.5km of the Preliminary Order Limits outside the Preliminary Order Limits: Lower Weaver Valley Woods LWS; Manor Park Woodland LWS; Model Farm Wood LWS; Sherdley Park LWS; Kennel Wood, Northwich LWS; Woolstencroft Farm Meadow LWS; Bog Rough LWS; Daresbury Firs (Keckwick Hill) LWS; Appleton Reservoir LWS; Daresbury Firs LWS; Pitts Heath Wood LWS; Helsby Hill LWS; Runcorn Hill LWS; Quick Woods LWS; Whitegate Way LWS; Clough Wood LWS; Bestway Wood, Gunners Clough and Nursery Wood LWS; Green Wood LWS; Oxmoor_B LWS; Beechwood LWS; Gowy Meadows and Ditches LWS; Whittle Brook (SJ521902-SJ535896) LWS; Heath Off Bradford Road LWS; Oxmoor_A LWS; Barker's Hollow Wood LWS</p> <p><b>Predicted effect:</b> Increased noise, vibration, light and movement levels (resulting in disturbance of faunal interest features)</p> | County                             | Very low (during construction and operation) | Not Significant           | Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status. |

| Feature and summary of predicted effects                                                                                                                                                                                                                                                 | Importance of feature <sup>1</sup> | Magnitude of change <sup>2</sup>                          | Significance <sup>3</sup> | Summary rationale                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Feature:</b><br/>Ancient and semi-ancient woodland/ancient replanted woodland and veteran trees</p> <p><b>Predicted effect:</b> Permanent or temporary land take/land use change resulting in habitat loss; fragmentation of habitats resulting in a reduction in connectivity</p> | National                           | Very low (during construction and operation)              | Not Significant           | Embedded environmental measures and habitat-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status. |
| <p><b>Feature:</b><br/>Broad-leaved semi-natural woodland</p> <p><b>Predicted effect:</b> Permanent or temporary land take/land use change resulting in habitat loss; fragmentation of habitats resulting in a reduction in connectivity</p>                                             | County                             | Very low (during construction and operation)              | Not Significant           | Embedded environmental measures and habitat-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status. |
| <p><b>Feature:</b><br/>Hedgerows</p> <p><b>Predicted effect:</b> Permanent or temporary land take/land use change resulting in habitat loss;</p>                                                                                                                                         | County                             | Low (during construction)/<br>Very low (during operation) | Not Significant           | Embedded environmental measures and habitat-specific measures would render effects to a level which would not affect the feature's                                 |

| Feature and summary of predicted effects                                                                                                                                                                                                                             | Importance of feature <sup>1</sup> | Magnitude of change <sup>2</sup>                          | Significance <sup>3</sup> | Summary rationale                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| fragmentation of habitats resulting in a reduction in connectivity                                                                                                                                                                                                   |                                    |                                                           |                           | Favourable Conservation Status.                                                                                                                                    |
| <b>Feature:</b><br>Running water (rivers, streams and ditches)<br><br><b>Predicted effect:</b> Permanent or temporary land take/land use change resulting in habitat loss; fragmentation of habitats resulting in a reduction in connectivity                        | County                             | Low (during construction)/<br>Very low (during operation) | Not Significant           | Embedded environmental measures and habitat-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status. |
| <b>Feature:</b><br>Other HPIs / Other non-priority habitats with biodiversity benefit<br><br><b>Predicted effect:</b> Permanent or temporary land take/land use change resulting in habitat loss; fragmentation of habitats resulting in a reduction in connectivity | County to Local <sup>109</sup>     | Low (during construction)/<br>Very low (during operation) | Not Significant           | Embedded environmental measures and habitat-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status. |
| <b>Feature:</b><br>Bats<br><br><b>Predicted effect:</b> Permanent or temporary land take/land use change                                                                                                                                                             | County                             | Very low (during construction and operation)              | Not Significant           | Embedded environmental measures and species-specific measures would                                                                                                |

| Feature and summary of predicted effects                                                                                                                                                                                                                                                        | Importance of feature <sup>1</sup> | Magnitude of change <sup>2</sup>                          | Significance <sup>3</sup> | Summary rationale                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration, light and movement levels (resulting in disturbance)                                                                             |                                    |                                                           |                           | render effects to a level which would not affect the feature's Favourable Conservation Status.                                                                     |
| <p><b>Feature:</b><br/>Great crested newt</p> <p><b>Predicted effect:</b> Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity</p>                                | County                             | Low (during construction)/<br>Very low (during operation) | Not Significant           | Embedded environmental measures and species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status. |
| <p><b>Feature:</b><br/>Otter and water vole</p> <p><b>Predicted effect:</b> Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration,</p> | County to Local <sup>109</sup>     | Low (during construction)/<br>Very low (during operation) | Not Significant           | Embedded environmental measures and species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status. |

| Feature and summary of predicted effects                                                                                                                                                                                                                                                                                                                     | Importance of feature <sup>1</sup> | Magnitude of change <sup>2</sup>             | Significance <sup>3</sup> | Summary rationale                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>light and movement levels (resulting in disturbance)</b>                                                                                                                                                                                                                                                                                                  |                                    |                                              |                           |                                                                                                                                                                    |
| <b><u>Feature:</u></b><br><b>Badger</b><br><br><b><u>Predicted effect:</u></b> Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration, light and movement levels (resulting in disturbance)          | Local                              | Very low (during construction and operation) | Not Significant           | Embedded environmental measures and species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status. |
| <b><u>Feature:</u></b><br><b>Freshwater fish</b><br><br><b><u>Predicted effect:</u></b> Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration, light and movement levels (resulting in disturbance) | County                             | Low (during construction and operation)      | Not Significant           | Embedded environmental measures and species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status. |

| Feature and summary of predicted effects                                                                                                                                                                                                                                                                                                               | Importance of feature <sup>1</sup> | Magnitude of change <sup>2</sup>        | Significance <sup>3</sup> | Summary rationale                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Feature:</b><br/>Other freshwater fauna</p> <p><b>Predicted effect:</b> Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration, light and movement levels (resulting in disturbance)</p> | County                             | Low (during construction and operation) | Not Significant           | Embedded environmental measures and species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.                                                                  |
| <p><b>Feature:</b><br/>Breeding Schedule 1 birds</p> <p><b>Predicted effect:</b> Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; and Increased noise, vibration, light and movement levels (resulting in disturbance)</p>                                                              | National                           | Negligible                              | Not Significant           | Minimal land-take areas, embedded environmental measures and species-specific disturbance mitigation measures would render any effects to a negligible level and there would be no disturbance to breeding Schedule 1 bird species. |
| <p><b>Feature:</b><br/>Reptiles</p>                                                                                                                                                                                                                                                                                                                    | County to Local <sup>109</sup>     | Low (during construction)/              | Not Significant           | Embedded environmental                                                                                                                                                                                                              |

| Feature and summary of predicted effects                                                                                                                                                                                                                                                                                                                                                                    | Importance of feature <sup>1</sup> | Magnitude of change <sup>2</sup>                          | Significance <sup>3</sup> | Summary rationale                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>Predicted effect:</u> Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration, light and movement levels (resulting in disturbance)</b>                                                                                                        |                                    | Very low (during operation)                               |                           | measures and species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.                        |
| <b><u>Feature:</u> SPI and other conservation notable terrestrial and aquatic invertebrates</b><br><br><b><u>Predicted effect:</u> Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity; Increased noise, vibration, light and movement levels (resulting in disturbance)</b> | National to Local <sup>109</sup>   | Low (during construction)/<br>Very low (during operation) | Not Significant           | Embedded environmental measures and species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status. |
| <b><u>Feature:</u> SPI and other protected/conservation notable plant species</b>                                                                                                                                                                                                                                                                                                                           | National to Local <sup>109</sup>   | Low (during construction)/<br>Very low (during operation) | Not Significant           | Embedded environmental measures and species-specific measures would                                                                                                |

| Feature and summary of predicted effects                                                                                                                                                                    | Importance of feature <sup>1</sup> | Magnitude of change <sup>2</sup> | Significance <sup>3</sup> | Summary rationale                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------|---------------------------|------------------------------------------------------------------------------------------------|
| <b>Predicted effect: Permanent or temporary land take/land use change resulting in habitat loss or degradation and/or loss of fauna; fragmentation of habitats resulting in a reduction in connectivity</b> |                                    |                                  |                           | render effects to a level which would not affect the feature's Favourable Conservation Status. |

1. The importance of a feature is defined using the geographical frame of reference and associated criteria set out in **Section 5.8** and is defined as local, county, regional, national, international or European.
2. The magnitude of change on a receptor resulting from activities relating to the development is defined using the criteria set out in **Section 5.10** and is defined as negligible, very low, low, medium and high.
3. The significance of the environmental effects defined within this chapter is based on the combination of the importance and sensitivity of a feature, and consideration of the extent, magnitude, duration, frequency, timing and reversibility, and is expressed as 'significant' or 'not significant', subject to the evaluation methodology outlined in **Section 5.10**.

## 5.13 Additional measures

- 5.13.1 No additional mitigation measures are proposed at this stage to further reduce any effects on important ecological features that are identified in this PEIR. This is because all relevant and implementable general measures and feature-specific measures including species licences or method statements to be detailed in the ES) have been embedded into the Project and are assessed above in this chapter. These measures are considered to be likely to be effective, deliverable, and address the likely significant effects of the Project.
- 5.13.2 Embedded environmental measure **1- BNG enhancement** would be provided as part of the Project and would seek to deliver a net gain in biodiversity above the current baseline. Enhancements will be determined following the collection of additional baseline information and further discussions with key stakeholders and would align with local initiatives such as biodiversity opportunity mapping and ecological networks where reasonably practicable, appropriate and relevant. Enhancements will be confirmed in the ES and are not considered in the basis of assessment of effects.

## 5.14 Further work to be undertaken

- 5.14.1 The information provided in this PEIR is preliminary, the final assessment of likely significant effects and BNG will be reported in the ES following the ongoing suite of biodiversity surveys, consultation with technical and other stakeholders, detailed design and complementary development of embedded environmental measures. This section describes the further work to be undertaken to support the biodiversity assessment presented in the ES.

### Baseline

- 5.14.2 An extensive programme of field survey is ongoing and will inform the assessment provided in the ES. This survey programme (described in **Table 5.9**) was set out in the Scoping Report and comments made in response by stakeholders have been addressed as stated in **Section 5.3**. Further to this, discussions with technical stakeholders regarding the survey programme and methodology are ongoing (see **Section 5.3**).

### Assessment

- 5.14.3 The assessment within the ES will follow the methodology provided in **Section 5.4** and **Section 5.10**. It will, however, be informed by the ongoing baseline data collection, evolved design, technical specific consultations and detailed analysis from other environmental disciplines.
- 5.14.4 A cumulative effects assessment (CEA) will be undertaken for the Project which considers the combined impacts with other developments on the same single receptor or resource (inter-project effects). The detailed method to be followed in identifying and assessing potential cumulative effects is set out in **Section 3.9** of **Chapter 3: Approach to Preparing the PEIR**.

# HyNet North West Hydrogen Pipeline

Delivering clean growth

