

Appendix 5B

Scoping of Assessment Summary

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- 1.1.1 This appendix provides the rationale for the scope of the assessment and comprises two tables. **Table 5B.1** describes and justifies the level of importance assigned to the ecological features identified during the data gathering exercise carried out to inform this assessment. **Table 5B.2** determines and justifies whether those ecological features require further assessment as they have either sufficient legal protection for a breach in legislation to occur or are of sufficient importance that a significant effect may occur as a result of the Project.
- 1.1.2 Within **Table 5B.1**, consideration is given to both the importance of ecological features based on legislation and policy (see **Draft ES Chapter 5: Biodiversity Section 5.2**) and importance (see **Draft ES Chapter 5: Biodiversity Section 5.9**) with regard to the Project. The justification provided for the decision to scope in or out each ecological feature is based on information on its status both with regard to the Project, and the local, county, regional, national or international context, where available.

Table 5B.1 Importance of ecological features

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
International statutory designated biodiversity sites within 2km from the Draft Order Limits, extended to 10km for sites of bat interest features, and 20km for sites of ornithological interest features				
Mersey Estuary Special Protection Area (SPA) & Ramsar Site: all features	European/ International	European/ International	These sites are located ~826m north of the Draft Order Limits at their closest point. The Draft Order Limits and areas in proximity include habitats that were identified as being functionally linked with the Mersey Estuary SPA/Ramsar/Site of Special Scientific Interest (SSSI) during the desk study process (e.g. wet grassland, estuarine/riverine habitats, high tide roosts etc). Therefore, non-breeding bird surveys focusing on qualifying/assemblage species of European/International sites in proximity to the Draft Order Limits between October 2021 and February 2022, and also between January and June 2024 (with further surveys scheduled until December 2024). All seven qualifying species of the Mersey Estuary SPA/Ramsar Site were recorded within the Draft Order Limits and/or 500m buffer: golden plover, shelduck, wigeon, teal, dunlin, black-tailed godwit and redshank. Additionally, several assemblage species were also recorded. Therefore, these sites are scoped into the assessment.	Scoped in
Midlands Meres and Mosses Phase 2 Ramsar Site: all features	International	International	This site is located ~2.25km south-west of the Draft Order Limits at its closest point. There are no ornithological features designated as part of this Ramsar Site, and there is no hydrological connectivity between the Draft Order Limits, e.g. a river. Therefore, there are no pathways for affecting the interest features and this site is scoped out from further assessment.	Scoped out
Rostherne Mere Ramsar Site: all features	International	International	This site is located ~2.65km east of the Draft Order Limits at its closest point. This site’s features are unlikely to forage within the Draft Order Limits or 500m buffer, given the distance from this internationally designated site in addition to there being no hydrological connectivity between the Draft Order Limits, e.g. a river. Therefore, there are no pathways for affecting the interest features and this site is therefore scoped out from further assessment.	Scoped out
The Dee Estuary SPA and Ramsar Site: all features	European/ International	European/ International	These sites are located ~13.7km west of the Draft Order Limits at the closest point. Given the distance between this site and the Draft Order Limits, none of the qualifying features would be susceptible to direct effects resulting from direct habitat loss as there is no land take/land use or access required within the Zone of Influence (ZoI) of these sites. There is potential Functionally linked land (FLL) relating to these sites within the Draft Order Limits but this	Scoped out

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
			was not used regularly and in significant numbers during surveys in 2020/21 and 2024. Although some SPA qualifying (and waterbird assemblage) species were recorded “regularly” in “significant numbers” within 500m of the Project (e.g. black-tailed godwit and shoveler), it is considered that these birds are likely to be related to waterbird populations supported by the Mersey Estuary. There is no hydrological connectivity between the Draft Order Limits and these sites. Therefore, there are no pathways for affecting the interest features, and these sites are scoped out from further assessment.	
Liverpool Bay/Bae Lerpwl SPA: all features	European	European	This site is located ~14.5km west of the Draft Order Limits at its closest point. This sites largely marine features are unlikely to forage within the Draft Order Limits or 500m buffer, given the distance from this internationally designated site in addition to there being no hydrological connectivity between the Draft Order Limits and the site. Therefore, there are no pathways for affecting the interest features and this site is therefore scoped out from further assessment.	Scoped out
Mersey Narrows and North Wirral Foreshore SPA and Ramsar Site: all features	European/ International	European/ International	These sites are located ~17.1km west of the Draft Order Limits at the closest point. These sites largely estuarine- and/or marine-associated qualifying features are unlikely to forage within the Draft Order Limits or 500m buffer, given the distance from these internationally designated sites. Furthermore, there is no hydrological connectivity between the Draft Order Limits and the Ramsar Site. Therefore, there are no pathways for affecting the interest features, and these sites are scoped out from further assessment.	Scoped out
Ribble and Alt Estuaries SPA and Ramsar Site: all features	European/ International	European/ International	These sites are located ~19.1km north-west of the Draft Order Limits at the closest point. Apart from pink-footed goose, these sites qualifying features are not considered to have potential connectivity with the habitats within the Draft Order Limits or 500m buffer. The upper limit of pink-footed goose foraging activity from winter roost sites is 15-20km with farmland (particularly grassland) the principal foraging habitat in winter ¹ . Given the amount of grassland habitat within the wider area, impacts on this species are considered negligible. There is no hydrological connectivity between the Draft Order Limits and the Ramsar site, e.g. a river. Therefore, there are no pathways for affecting the interest features, and these sites are therefore scoped out from further assessment.	Scoped out
National statutory designated biodiversity sites with ornithological interest features located within 10km from the Draft Order Limits				
Woolston Eyes SSSI	National	National	This site is located ~135m north-west of the Draft Order Limits at its closest point. A nationally important site for its breeding bird assemblage of lowland open waters and their margins (including nationally important numbers of	Scoped out

¹ Pendlebury, C., Zisman, S., Walls, R., Sweeney, J., McLoughlin, E., Robinson, C., et al. (2011) Literature Review to Assess Bird Species Connectivity to Special Protection Areas. Scottish Natural Heritage Commissioned Report No. 390.

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
			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. Any Project infrastructure/ noise impacts on the SSSI would be physically screened by a currently operational industrial plant and therefore it is considered that there are no pathways (e.g. disturbance to breeding and/or wintering birds) for affecting the notified features. Embedded environmental measures (such as 13: Sensitive lighting design , described within Table 5.23 within Chapter 5: Biodiversity ; also see measures included in Chapter 10: Noise and Vibration) further minimise the potential effect of disturbance from increased noise, vibration and light. This site is therefore scoped out from further assessment.	
Mersey Estuary SSSI	National	National	This site is located ~720m north of the Draft Order Limits at its closest point. 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. The Draft Order Limits fall within 500m of FLL and therefore this site is scoped into the assessment.	Scoped in
Rostherne Mere SSSI and NNR	National	National	This site is located ~2.5km east of the Draft Order Limits at its closest point. 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 of the Mere. 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. Given the distance from the Draft Order Limits to this site, it is considered that there are no pathways (e.g. disturbance to the wintering roost site) for affecting the interest features and this site is therefore scoped out from further assessment.	Scoped out
Stanley Bank Meadow SSSI	National	National	This site is located ~2.89km north-east of the Draft Order Limits at its closest point. "The diversity of habitats present supports a wide range of insect and bird life. Breeding birds include willow warbler (<i>Phylloscopus trochilus</i>), reed bunting, yellowhammer (<i>Emberiza citrinella</i>) and redpoll (<i>Carduelis spp.</i>)." ² Given the distance from the Draft Order Limits to this site, it is considered that there are no pathways for affecting the interest features (breeding passerines) and this site is therefore scoped out from further assessment.	Scoped out

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
Rixton Clay Pits SSSI	National	National	This site is located ~3.52km north-west of the Draft Order Limits at its closest point. Diverse populations of birds are associated with the range of wetland, grassland and woodland habitats within the site. Given the distance from the Draft Order Limits to this site, it is considered that there are no pathways for affecting the interest features and this site is therefore scoped out from further assessment.	Scoped out
Risley Moss SSSI	National	National	This site is located ~4.37km north-east of the Draft Order Limits at its closest point. 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. Given the distance from the Draft Order Limits to this site, it is considered that there are no pathways for affecting the interest features (breeding bird assemblage and wintering wildfowl and raptors) and this site is therefore scoped out from further assessment.	Scoped out
Plumley Lime Beds SSSI	National	National	This site is located ~4.51km east of the Draft Order Limits at its closest point. Little ringed plover (<i>Charadrius dubius</i>) is known to have bred within the site. Given the distance from the Draft Order Limits to this site, it is considered that there are no pathways for affecting the interest features (little ringed plover) and this site is therefore scoped out from further assessment.	Scoped out
Astley and Bedford Mosses SSSI	National	National	This site is located ~5.4km north of the Draft Order Limits at its closest point. 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. Given the distance from the Draft Order Limits to this site and the level of impacts from the Project, it is considered that there are no pathways for affecting the interest features and this site is therefore scoped out from further assessment.	Scoped out
Tatton Meres SSSI	National	National	This site is located ~5.4km south-east of the Draft Order Limits at its closest point. 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. Given the distance from the Draft Order Limits to this site, it is considered that there are no pathways for affecting the interest features (breeding and wintering bird assemblage) and this site is therefore scoped out from further assessment.	Scoped out
Sandbach Flashes SSSI	National	National	This site is located ~6.54km east of the Draft Order Limits at its closest point.	Scoped out

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
			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. Given the distance from the Draft Order Limits to this site, it is considered that there are no pathways for affecting the interest features (breeding and wintering bird assemblage) and this site is therefore scoped out from further assessment.	
Tabley Mere SSSI	National	National	This site is located ~6.60km east of the Draft Order Limits at its closest point. A large heronry is present in the woodland and the undisturbed meres attract numerous wildfowl. Given the distance from the Draft Order Limits to this site, it is considered that there are no pathways for affecting the interest features (heronry and waterbird assemblage) and this site is therefore scoped out from further assessment.	Scoped out
River Dee (England) SSSI	National	National	This site is located ~8.54km south-west of the Draft Order Limits at its closest point. 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. This site’s qualifying features are unlikely to forage within the Draft Order Limits or 500m buffer, given the distance from this site. Therefore, there are no pathways for affecting the interest features and therefore it is scoped out from further assessment.	Scoped out
Cotteril Clough SSSI	National	National	This site is located ~8.67km east of the Draft Order Limits at its closest point. 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. Given the distance from the Draft Order Limits to this site, it is considered that there are no pathways for affecting the interest features (breeding bird assemblage) and this site is therefore scoped out from further assessment.	Scoped out
National statutory designated biodiversity sites with terrestrial ecology features located within 2km of the Draft Order Limits: Hatton’s Hey Wood, Whittles Corner and Bank Rough SSSI;	National	National	These SSSIs support a range of species and habitats. As a precautionary measure all are considered to be of National importance in relation to the Project, based on legislation and their location within the Study Area.	Scoped in

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
Pettypool Brook Valley SSSI; Flood Brook Clough SSSI; Frodsham Railway and Road Cuttings SSSI; Brookheys Covert SSSI; Dunsdale Hollow SSSI; Dunham Park SSSI; Beechmill Wood and Pasture SSSI; Warburton’s Wood and Well Wood SSSI.				
Other statutory biodiversity sites within 2km of the Draft Order Limits: Thatto Heath Meadows Local Nature Reserve (LNR); Colliers Moss Common 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; Parr Hall Millenium Green LNR.	County	County	These sites support a range of species and habitats. As a precautionary measure all are considered to be of County importance in relation to the Project, based on legislation and their location within the Study Area.	Scoped in
Non-statutory designated biodiversity sites located within 2km of the Draft Order Limits: Acton Bridge Meadows Local Wildlife Site (LWS); Acton Cliff Meadow LWS; Altrincham Sewage Works SBI; Ansdells Wood LWS; Appleton Reservoir LWS; Ash Trees along Trent and Mersey Canal, Billinge Green LWS; B W Lagoon, Kingsley LWS; Bank Hall Farm Flush LWS; Barker’s Hollow Wood LWS; Bawsgate Pond and Grassland LWS; Beach Hill Wood LWS; Beechwood LWS; Big Wood LWS; Billinge Green Farm Pond LWS; Birchmoss Covert SBI; Birds Wood LWS; Black Moss Covert SBI; Blundell Hills Golf Course LWS; Bog Rough LWS; Booth’s Wood LWS; Bostock Road Orchards LWS; Boundary Farm Pond LWS; Bradford Mill Wood and Marsh LWS; Bradley Meadow Wood, Hawton Clough and Little Leigh Ponds LWS; Blackamoor Wood and the Coppice LWS; Bridgewater Canal SBI; Broadoak Wood SBI; Brookheys Covert SBI; Bull’s Wood and Meadow LWS; Carrington Power Station SBI; Cartledge Moss LWS; Catsclough LWS; Cliff Brook Meadows LWS; Clifton Cloughs_A LWS; Clifton Cloughs_B LWS; Clifton Lagoon LWS; Clough Wood LWS; Coroners Wood SBI; Crowholt Wood and Whitley Brook LWS; Cuddington	County	County	These sites support a range of species and habitats. As a precautionary measure all are considered to be of County importance in relation to the Project based on legislation and their location within the Study Area.	Scoped in

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
Brook (North) LWS; Daresbury Firs (Keckwick Hill) LWS; Daresbury Firs LWS; Daresbury LWS; Deakin Yard Wood LWS; Dennow Wood LWS; Disused Railway Line South of Warrington Road LWS; Drakelow Gorse LWS; Dunham Park SBI; Dutton Dean LWS; Dutton Dingles LWS; East Clifton Tip LWS; Ecclestone Top Dam LWS; Fields Behind Ye Olde No. 3_A LWS; Fields Behind Ye Olde No. 3_B LWS; First Pit, Ellis Lane LWS; Flint Mill Reedbeds LWS; Flixton Sludge Beds SBI; Fox Covert and Meadows SBI; Friar’s Rough LWS; Frodsham and Overton Woods; Frodsham Field Studies Centre LWS; Frodsham, Helsby and Ince Marshes LWS; Garden Wood LWS; Gatewarth LWS; Gowy Meadows and Ditches LWS; Grappenhall Heys_A LWS; Grappenhall Heys_B LWS; Green Wood LWS; Greenbank Wood LWS; Grey’s Gorse LWS; Haresfinch Burgy Banks LWS; Harmers Wood LWS; Heath Off Bradford Road LWS; Heatley Lake_A LWS; Heatley Lake_B LWS; Hefferston Grange Farm Meadows LWS; Helsby Allotments and Cemetery LWS; Helsby Hill LWS; Helsdale Wood and Newhey’s Plantation LWS; Heys Wood and the Riddings LWS; Hob Hey Wood LWS; Hogswood Covert SBI; Jack Lane SBI; Kennel Wood, Sandiway LWS; Land North of Hallwood Park LWS; Land off Lunts Heath Road_A LWS; Land off Lunts Heath Road_B LWS; Land, west of Gerrards Lane LWS; Latchford Railway Sidings LWS; Leg O’ Mutton Dam LWS; Littledales Gorse LWS; Lodge Wood LWS; Long Acre Wood LWS; Lower Weaver Valley Floodplain LWS; Lower Weaver Valley Woods LWS; Lowes Wood LWS; Lymm Dam Complex LWS; Manor Park Woodland LWS; Meadow by Earls Wood and River Dane LWS; Merryfall Wood LWS; Mersey Valley Golf Course LWS; Mill Wood, Big Wood & Willowbed Wood LWS; Model Farm Pasture LWS; Model Farm Wood LWS; Moore Meadows LWS; Moore Nature Reserve LWS; Morts Wood LWS; Moss Wood SBI; Murdishaw Wood and Valley LWS; New Pool and Wood LWS; Newbridge Wood LWS; Norbury Wood LWS; Norton Marsh and Upper Moss Side Fields LWS; Nursery Wood LWS; Oak Wood near School Lane SBI; Old mineral line Lea Green LWS; Old River Irwell SBI; Owley Wood LWS; Oxmoor_A LWS; Oxmoor_B LWS; Paddington Meadows LWS; Park Brow LWS; Park Brow Pool LWS; Park Moss Wood LWS; Parkside Farm Wood LWS; Parr Hall Millenium Green and Canal LWS; Partington Nature Reserve SBI; Pear Tree Farm LWS; Pendlebury Brook (SJ493920-				

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
SJ515914) LWS; Petty Pool Brook and Woods LWS; Petty Pool Brook and Woods LWS; Pex Hill Country Park LWS; Pickering’s Oxbow LWS; Pitts Heath Wood LWS; Puddinglake Brook Wood LWS; Quick Woods LWS; Ravenhead Ponds LWS; Ravensclough; Ravensclough Marsh LWS; Redmoor Covert SBI; Reeve Court Woodland and grassland LWS; River Dane, Bostock LWS; River Gowy LWS; Rookery Wood and Pool LWS; Rough Grassland around Sutton Dam Stream LWS; Rows Wood LWS; Rye Grass Pipes LWS; Sandiway Golf Course LWS; Sankey Canal Central_A LWS; Sankey Canal Central_B LWS; Sherdley Park LWS; Sinderland Green Wood SBI; Snipe Island LWS; Southern Verge Embankment LWS; St Helens Canal Disused_A LWS; St Helens Canal Disused_B LWS; St Helens Canal LWS; St Helens Canal, south of Haresfinch Burgy Bank LWS; Station Road Railway Site LWS; Stenhills Open Space LWS; Stockton Heath Quarry LWS; Stretton Moss LWS; Sutton Bridge Unused Lagoon LWS; Sutton Brook (SJ530935-SJ526945) LWS; Sutton Manor LWS; Sutton Mill Dam LWS; Thatto Heath Dam LWS; Thatto Heath Meadows LWS; The Bongs and the Gorse LWS; The Dingle and Ford’s Rough LWS; The Glen LWS; The Rough, woodland LWS; The Twiggeries LWS; The Willowbeds LWS; Thelwall Meadow LWS; Trent and Mersey Canal, Whatcroft LWS; Tunstalls Farm LWS; Upper Mersey Estuary Intertidal Areas and Mudflats LWS; Upper Mersey Estuary LWS; Upper Moss Side Farm LWS; Vale Royal Wood LWS; Veteran Ash Tree - Bank Farm, Bostock LWS; Veteran Ash Tree - Bank Hall Farm LWS; Wades Lane Clough LWS; Walton Locks LWS; Weaver Valley Country Park LWS; Weaver Valley/Newbridge Pool LWS; Wervin Meadows LWS; Weston Marsh Lagoon LWS; Westy Point LWS; Wetland at Carrington Moss SBI; Wharton Green Pasture LWS; Whatcroft Hedge LWS; Whatcroft Lane Wetlands LWS; Whatcroft Woodland LWS; Whitegate Way LWS; Whiteoaks Wood SBI; Whittle Brook (SJ521902-SJ535896) LWS; Widnes Warth Saltmarsh LWS; Woolstencroft Farm Meadow LWS; Woolston New Cut Canal LWS.				

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
Ancient woodland/ancient replanted woodland and veteran trees	National	National	The surveys identified one Ancient woodland, Heys Wood, is present within the Draft Order Limits and one ancient/veteran tree (T1204 along the southern mainline, see Appendix 8C) was identified within the Draft Order Limits. An additional 11 ancient woodlands are situated within 100m of the Draft Order Limits. Ancient woodland/veteran trees are considered irreplaceable habitats and as such are considered to have National importance at the Project-level.	Scoped in
Lowland mixed deciduous woodland (Habitat of Principal Importance (HPI))	National	County	Lowland mixed deciduous woodland is located in discreet location within the Draft Order Limits (including East Clifton Tip LWS, Moore Nature Reserve LWS, Heys Wood and the Riddings LWS, Weaver Valley, Newbridge Pool LWS, along London Road and along Puddinglake Brook). The woodland at Heys Wood is also an Ancient woodland.	Scoped in
Wet woodland (HPI)	National	County	Wet woodland is rare within the Draft Order Limits and is found in in seven locations (East Clifton Tip LWS, Clifton Lagoons LWS, Frodsham Field Studies Centre LWS, Walton Locks LWS, two locations close to the end of the eastern and southern mainlines) along the mainlines.	Scoped in
Hedgerows (HPI)	National	County	Hedgerows are common throughout the Draft Order Limits with of the majority being species-poor. There are some species-rich hedgerows, intact and defunct hedgerows, and hedgerows with trees. Field margins are common alongside hedgerows, though a number of hedgerows lack a margin, where land has been cultivated or grazed to the hedgerow base. Where present, field margins are usually 1-2m in width and consist of species-poor modified grassland and ruderal vegetation that typically reflects the intensive agricultural practices within the adjacent fields. All native hedgerows over 20m in length, both species-poor and species-rich, are defined as HPI ³ .	Scoped in
Watercourses (rivers, stream, canals, and running and standing water ditches) (including River HPI)	International – National	International – River Mersey Regional – all rivers and streams and some ditches that are known to support species of conservation interest and/or	Several watercourses bisect the Draft Order Limits. Of the main rivers and streams that cross the Draft Order Limits, only the River Mersey was found to qualify as a HPI, as detailed in Appendix 5.C of the UKHAB Survey Report . The River Mersey is considered of International importance. Other than the Main Rivers, most of the surveyed watercourses were small, realigned, and over-deepened. These watercourses primarily served drainage purposes for grazing and arable lands, characterized by narrow channels, extensive shading, and widespread in-channel vegetation growth. Nevertheless, many contained habitats essential for species of conservation concern, specifically diadromous fish, and their passage between marine and freshwater environments. Some aquatic macroinvertebrates and macrophytes of conservation importance were also detected in these	Scoped in

³ JNCC (2016). UK Biodiversity Action Plan; Priority Habitat Descriptions: Hedgerows. (online) Available at: <https://data.jncc.gov.uk/data/ca179c55-3e9d-4e95-abd9-4edb2347c3b6/UKBAP-BAPHabitats-17-Hedgerows.pdf> (Accessed September 2024).

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
		where these were recorded Local – all other ditches and some canals where no species of conservation concern are known to occur and/or were not recorded	watercourses. All rivers and streams, and some ditches that are known to support species of conservation interest and/or where these were recorded are considered of Regional importance. All other ditches, and some canals considered to have poor habitat diversity, where no species of conservation importance are known to occur and where such species were not recorded during surveys are considered to have a Local level of importance for the purposes of this assessment. Further surveys planned for 2024 have been completed. Information and data collected during these surveys are currently being analysed, and the findings will be presented within the ES. The watercourses which are considered within each category will be kept under review as this data is analysed and the Project progresses.	
Ponds (including Ponds HPI)	National	Regional	Ponds are found throughout the Draft Order Limits, and although no specific surveys were undertaken to identify which ponds qualify as HPis, it is considered that any ponds that qualify as HPI would likely be due to supporting species of high conservation importance such as great crested newts. As the majority of the project is situated in an area where great crested newt District Level Licencing (DLL) scheme is available, surveys were conducted only in St Helens area (where the species was found present) where DLL is not applicable. Through DLL, all ponds that are likely to be affected are assumed to provide some function to the great crested newt populations and the ponds are replaced at a minimum of 1:3 ratio. It is therefore appropriate to assume that all the ponds situated within the Draft Order Limits are HPI.	Scoped in
Lowland dry acid grassland (HPI)	National	Local	Lowland dry acid grassland is rare within the Draft Order Limits and is only found within Moore Nature Reserve LWS. Acid grassland likely exists in this location due to the history of the sits as a sand quarry.	Scoped in
Arable field margins (HPI)	National	Local	Arable field margins are rare throughout the Draft Order Limits found at two locations (Clockface HAGI and in a field east of Trent and Mersey Canal, Whatcroft LWS). A single maize field, where an area has been unharvested is classified as game bird mix strips and corners (c1a8) and two fields on either side of a road have been identified (along the northern mainline) where arable field margins are managed for wildlife (c1a6). These fields are identified in the Countryside Stewardship Agreement Management Areas (Middle Tier) and margins were approximately 20-30m wide.	Scoped in
Coastal and floodplain grazing marsh (HPI)	National	County	Coastal and floodplain grazing marsh was identified within the Draft Order Limits, consisting of a series of modified grassland fields within the Frodsham, Helsby, and Ince Marshes LWS.	Scoped in

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
Reedbeds (HPI)	National	County	Reedbeds are widespread and are found scattered throughout the Draft Order Limits. The reedbeds are characterised by areas of open water and scattered trees and often found adjacent to wet woodland.	Scoped in
Intertidal mudflat (HPI)	National	Local	Intertidal mudflat is found in one location along the Mersey River (within Walton Locks LWS) and is restricted size.	Scoped in
Open mosaic on previously developed land (HPI)	National	County	Open mosaic on previously developed land are widespread and are found through the Draft Order Limits. This habitat is present in areas where hard standing or gravel substrate is present which support a mosaic of habitats including scrub, annuals, bryophytes and areas of exposed bare ground.	Scoped in
Non-priority habitats with biodiversity benefit: Other woodland (broadleaved, mixed and coniferous, including plantation); Other neutral grassland and sub-communities; Other swamp.	County to local	Local	Aside from habitats occurring within LWSs (which is assessed as part of the LWSs), small areas of non-priority habitats with biodiversity benefit are present within the Draft Order Limits including habitats such as woodlands, neutral grasslands and other swamps. These habitats are considered to be of Local importance in relation to the Project.	Scoped in
Non-priority habitats with low or negligible biodiversity interest: Dense scrub and sub-communities; Line of trees; Other hedgerows; Bracken; Other inland rock and scree; Modified grassland; Arable and horticulture and sub-communities; Built-up areas and gardens and sub-communities.	Local to negligible	Local to negligible	A large proportion of the Draft Order Limits includes non-priority habitats (or habitats which do not meet the HPI criteria) with low or negligible biodiversity interest, including extensive areas of agricultural, urban and industrial land. All habitats are considered common and widespread in the vicinity of the Project and are therefore of local to negligible importance at the Project level. Embedded environmental measures outlined in Section 5.6 ensure that permanent loss of these habitats is minimised and avoided where possible, and that temporary land take would be reinstated and permanent land take would be compensated for, while BNG will be provided as a separate enhancement.	Scoped out
Bats	International	County	The desk study (discussed within Chapter 5: Biodiversity) identified 1,696 bat records relating to at least 10 species within 2km of the Draft Order Limits. Bat surveys have been carried out during 2022/23 and are on-going during 2024. However, suitable commuting and foraging and roosting habitat has been identified within the Draft Order Limits. Surveys have recorded 11 species of bat within the Draft Order Limits and recorded four bat roosts within trees. Bat roost surveys are on-going. Bats are considered to be of County importance in relation to the Project on a precautionary basis. The importance of this species will be kept under review as baseline data collection and the Project progresses.	Scoped in
Great crested newt	International	County	The desk study identified 390 records within 2km of the Draft Order Limits. It is intended that the Project will join a Natural England-led great crested newt DLL scheme in districts of Cheshire East, Cheshire West and Chester, Halton, Greater Manchester and Warrington, so great crested newt populations in these areas are excluded from baseline surveys and assessment. Great crested newt surveys were undertaken during 2022 to 2024 in the remaining areas of the Project (St Helens), where numerous	Scoped in (St Helens only)

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
			suitable waterbodies (ponds and ditches) and suitable terrestrial habitats are present, and eDNA analysis confirmed presence of great crested newt on two waterbodies within 250m of the Draft Order Limits.	
Otter	International	Local	The desk study identified 45 records of otter within 2km of the Draft Order Limits. Otter surveys were undertaken during 2022/23 and are on-going during 2024. Short sections of various watercourses bisect the Draft Order Limits, which in combination with adjoining riparian habitats, provide suitable commuting, foraging and holt/resting habitat. Evidence of otter was occasionally recorded on watercourses within the Draft Order Limits. In recent years otters have become more widespread and common and as such are considered to be of Local importance in relation to the Project, on a precautionary basis. The importance of this species will be kept under review as baseline data collection and the Project progresses.	Scoped in
Water vole	National	County	The desk study identified 28 records of water vole within 2km of the Draft Order Limits. Water vole surveys were undertaken during 2022/23 and are on-going during 2024. Short sections of various watercourses bisect the Draft Order Limits, and ditches are relatively frequent, which in combination with adjoining riparian habitats, provide suitable habitat for commuting, foraging and burrows. Potential burrows and evidence of water voles was recorded at a number of locations within the Draft Order Limits, with the majority of activity found along the Western Mainline. Water voles are considered to be of County importance in relation to the Project on a precautionary basis. The importance of this species will be kept under review as baseline data collection and the Project progresses.	Scoped in
Reptiles	National	County	The desk study identified 285 records of reptiles within 2km of the Draft Order Limits and Helsby Allotments and Cemetery LWS is located approximately 1km south-east which is noted to support a population of reptiles. Informed by the results of the desk study and UKHab survey, reptile presence/likely absence surveys were undertaken during 2022/23 of sites with the potential to support important assemblages of reptiles in areas likely to be subject to significant effects, which recorded presence of adder at a single site.	Scoped in
Badger	National	Local ⁴	The desk study identified records 1,291 badger records within 2km of the Draft Order Limits. Badger surveys were undertaken during 2022/23 and are on-going during 2024. Areas of suitable badger habitat within the Draft Order Limits include arable, grassland, woodland, scrub and watercourse corridors and are suitable for commuting, foraging and sett creation. Surveys identified a number of main setts, and regularly recorded evidence of badger activity	Scoped in

⁴ Badgers are listed as local importance within **Chapter 5: Biodiversity**, however the species is common and widespread within the UK and has been included within the chapter because of its legal protection (which relates to persecution) only, rather than conservation status/importance.

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
			throughout the Draft Order Limits. Badgers are considered common and widespread; therefore they are considered to be of Local importance in relation to the Project.	
Dormice	National	N/A	The potential for significant effects on dormice 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 dormice from within 2km of the Draft Order Limits, an absence of records within the National Dormouse Database ⁵ maintained by the People’s Trust for Endangered Species (PTES) and the current PTES dormouse distribution map ⁶ . Although there is an introduced population of dormice known to be present in the Wych Valley, this is the only known population present within Cheshire and there is no suitable connective habitat between the land within the Draft Order Limits and this population.	Scoped out
Fish	National to Local	European eel – Regional Salmon – County Lamprey species – County Atlantic herring – County European bullhead – County Other species - Local	Desk searches identified 178 fish records within 2km of the Draft Order Limits ^{7;8;9} . Desk searches and consultation with the Environment Agency and Marine Management Organisation (MMO) identified several fish species of interest including European eel (<i>Anguilla Anguilla</i>), brown/sea (<i>Salmo trutta</i>), Atlantic salmon (<i>Salmo salar</i>), river lamprey (<i>Lampetra fluviatilis</i>), brook lamprey (<i>Lampetra planeri</i>), sea lamprey (<i>Petromyzon marinus</i>), Atlantic herring (<i>Clupea harengus</i>) and European bullhead (<i>Cottus gobio</i>). eDNA samples were collected at 38 watercourses. European eel (<i>A. Anguilla</i>) was detected at 8 sites. Traces of European bullhead (<i>Cottus gobio</i>) and/or chabot fluviatile (<i>Cottus perifretum</i>) and river lamprey (<i>L. fluviatilis</i>) and/or brook lamprey (<i>L. planeri</i>) were detected at three and one site, respectively ¹⁰ . Further fish eDNA surveys planned for 2024 have been completed at six out of the 11 planned sites. Four sites were dry, preventing sampling, and access restrictions prevented surveying at one additional site. Information and data collected during these surveys are being analysed, and the findings will be presented within the ES. The level of importance of these species in relation to the Project and their distribution throughout the Draft Order Limits will be kept under review this data is analysed and the Project progresses.	Scoped in
White clawed crayfish	National	Regional to County – TBC	Watercourses within the Draft Order Limits have potential to support populations of white-clawed crayfish (<i>Austropotamobius pallipes</i>). This legally protected species and SPI has historically been recorded throughout some	Scoped in

⁵ 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 (Accessed 01 July 2022).

⁶ PTES dormouse distribution map. (online) Available at: <https://ptes.org/wp-content/uploads/2016/01/Current-Dormouse-Distribution-Map.png> (Accessed 01 July 2022).

⁷ J.R. Ellis *et al.* Spawning and nursery grounds of selected fish species in UK waters, 2012. Available at: <https://tethys.pnnl.gov/sites/default/files/publications/Ellisetal2012.pdf>

⁸ EA Data Explorer. Available at: <https://environment.data.gov.uk/ecology/explorer/>

⁹ K.A. Coull *et al.* Fisheries Sensitivity Maps in British Waters. Published and distributed by UKOOA Ltd, 1998. https://www.cefas.co.uk/media/o0fgfobd/sensi_maps.pdf

¹⁰ eDNA surveys could not differentiate between species of Cottus or Lampetra.

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
		pending further surveys	areas of the Weaver/Dane and Bollin catchments ¹¹. Consultation with the Environment Agency also revealed historic records of white-clawed crayfish across the Southern branch of the Draft Order Limits. The only known post-2007 record of the species is within an unnamed tributary of the Weaver Navigation. Records are outdated, and the current presence of the species within the Draft Order Limits is unconfirmed. eDNA samples were collected at 38 watercourses, including 21 within the Weaver/Dane and Bollin catchments. No traces of white-clawed crayfish were identified in any of the samples. Further eDNA surveys planned for 2024 have been completed at six out of the 11 planned sites. Four sites were dry, preventing sampling, and access restrictions prevented surveying at one additional site. Information and data collected during these surveys are being analysed, and the findings will be presented within the ES. The level of importance of this species (if present) in relation to the Project and the potential distribution throughout the Draft Order Limits will be kept under review as baseline data is analysed and the Project progresses.	
SPI (brown hare, common toad, harvest mice, hedgehog, polecat) and other conservation-notable terrestrial vertebrate species	National	Local	The desk study identified 650 records of five conservation-notable vertebrate species within 2km of the Draft Order Limits. These species are widespread and numerous, although there have been large declines in the national population. Although 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 Section 5.6 ensure that permanent loss of these habitats is minimised and avoided where possible, and that the risk of injury/death to these species is minimised. Temporary land take would be reinstated, and permanent land take would be compensated for, while BNG will be provided as a separate enhancement.	Scoped out
SPI and other conservation-notable terrestrial invertebrate species	International to Local	Local	The desk study identified 1,282 records relating to 54 conservation-notable terrestrial invertebrate species within 2km of the Draft Order Limits. Based on the results of the UKHabs survey, surveys were undertaken of sites with the potential to support important species or assemblages of terrestrial invertebrates in areas likely to be subject to significant effects. The surveys recorded six species with a nationally significant status, although all of these are now considered by many recording schemes and invertebrate specialists to be much more common than their current statuses suggest. Surveys found that these habitat areas do not support high value assemblages or species of genuine conservation value.	Scoped in

¹¹ 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 September 2024).

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
SPI and other conservation-notable aquatic macroinvertebrates	International to Local	County to local – TBC pending further surveys	Desk searches identified Environment Agency aquatic macroinvertebrates survey data¹² during the last 10 years relevance to watercourses in the Draft Order Limits. Several species of conservational importance were identified, including two species listed as nationally scarce and two species listed with near threatened designation under the Red Data List for Great Britain¹³. Species of conservation interest detected during desk searches, include smooth ramshorn (<i>Gyraulus laevis</i>), river orb mussel (<i>Sphaerium rivicola</i>), variable damselfly (<i>Coenagrion pulchellum</i>), and the diving beetle (<i>Nebrioporus depressus</i>). Aquatic macroinvertebrate surveys¹⁴ were undertaken at 10 watercourses, and e-DNA samples were collected at 38 watercourses. Two regionally notable species were identified during aquatic macroinvertebrate surveys, including scarce olive (<i>Baetis buceratus</i>) and the grannom caddisfly (<i>Brachycentrus subnubilus</i>) and one species of conservation interest was detected from eDNA surveys, river orb mussel (<i>S. rivicola</i>). eDNA and macroinvertebrate surveys using the industry standard RICT methodology¹⁵ planned for 2024 have been completed. eDNA surveys were planned for 11 sites, with four sites being dry and one site inaccessible due to access restrictions. Macroinvertebrate sampling was planned at 15 sites, with four sites dry, and two sites inaccessible due to access restrictions. Information and data from both surveys are being analysed, and the findings will be presented within the ES. The level of importance of these species in relation to the Project and their distribution throughout the Draft Order Limits will be kept under review as this data is analysed and the Project progresses.	Scoped in
SPI and other conservation-notable aquatic macrophytes	International to Local	County to local – TBC pending further surveys	Desk searches identified Environment Agency macrophyte survey data during the last 10 relevance to watercourses in the Draft Order Limits. One species of conservation note was detected, Flat-stalked Pondweed (<i>Potamogeton friesii</i>)¹⁶. Aquatic macrophyte surveys have been completed at 19 watercourses. One species of conservation note was detected, the slender-leaved Pondweed (<i>P. filiformis</i>). Further macrophyte surveys planned for 2024 have been completed at 10 out of the 11 planned sites, with one site with access restrictions that prevented sampling. Information and data collected during these surveys are being analysed, and the findings will be presented within the ES. The level of importance of these species in relation to the Project and their distribution	Scoped in

¹² EA Fish and Ecology Data Explorer. Available at: <https://environment.data.gov.uk/ecology/explorer/> (Accessed August 2024).

¹³ Daguet, C., French, G. & Taylor, P. The Odonta Red List for Great Britain – British Dragonfly Society, 2008 <https://data.jncc.gov.uk/data/8e18c30d-794e-4b0c-8d1c-378c3faf0e7c/SpeciesStatus-11-Odonata-WEB-2008.pdf>

¹⁴ Environment Agency (EA). Hydroecological validation using macroinvertebrate data: Operational Instruction 318_10, 2012.

¹⁵ UKTAG (2014) UKTAG River Assessment Method Benthic Invertebrate Fauna; River Invertebrates Classification Tool (RICT). December 2008

¹⁶ C.M. Cheffings & L. Farrell. The Vascular Plant Red Data List for Great Britain (No. 7), 2005. Available at: <https://data.jncc.gov.uk/data/cc1e96f8-b105-4dd0-bd87-4a4f60449907/SpeciesStatus-7-VascularPlant-WEB-2005.pdf>

Ecological feature	Importance – legislation and policy	Importance – project level	Justification	Scoped in/out of assessment
			throughout the Draft Order Limits will be kept under review this data is analysed and the Project progresses.	
SPI and other protected/conservation-notable terrestrial plant species	International to Local	National to Local – TBC pending further surveys	The desk study identified 362 records relating to 50 SPI and protected/conservation-notable plant species within 2km of the Draft Order Limits. Detailed botanical surveys (National Vegetation Classification) are on-going during 2024 at targeted locations with potential to support high floristic diversity, priority habitats, and non-statutory designated sites with habitats listed as a reason for designation which could be directly affected. The level of importance of these species (if present) in relation to the Project will be kept under review as baseline data collection and the Project progresses.	Scoped in
Non-breeding birds: general	European to Local	County to Local	General non-breeding bird surveys targeted at those species that are not qualifying species of the aforementioned designated sites (which are scoped in as features of the Mersey Estuary SPA and Ramsar Site), have been scoped out the assessment as it is considered that any effects on non-breeding birds would be negligible and temporary and can also be mitigated by best practice embedded environmental measures (see Section 5.6).	Scoped out
Breeding birds: Schedule 1 listed species	National	National to Local	Schedule 1 breeding bird surveys were carried out in the 2022 and 2024 breeding seasons. The following Schedule 1 species were recorded exhibiting breeding behaviour within the Draft Order Limits and/or 500m buffer: quail, avocet, barn owl, marsh harrier, kingfisher and Cetti’s warbler. The desk study identified records of the following additional Schedule 1 species within 2km of the Draft Order limits: black-necked grebe, bittern, avocet, little ringed plover, peregrine and hobby. Due to their legal protection these species are of National importance in relation to the Project and are therefore scoped into the assessment.	Scoped in
Breeding birds: general	European to Local	County to Local	It is considered that any effects upon active nests of breeding birds can be mitigated by best practice embedded environmental measures (see Section 5.6) 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. Therefore, general breeding birds are scoped out of the assessment.	Scoped out
Invasive non-native plant species	National	Local	It is illegal to cause the spread of invasive non-native species in the wild in accordance with the Wildlife and Countryside Act (1981 as amended) ¹⁷ . The risk of spreading non-native invasive plant species across and beyond the Draft Order Limits from construction or operational activities associated with the Project will be controlled via the implementation of embedded environmental measures - see Section 5.6 .	Scoped out

¹⁷ UK Government (1981). Wildlife and Countryside Act 1981, c.69. (online) Available from <https://www.legislation.gov.uk/ukpga/1981/69/contents> (Accessed September 2024).

1.1.3 For those ecological features that remain scoped in following the process as described in **Table 5B.1** the following are provided in **Table 5B.2**: description of the potential environmental change and associated effect; a description of the Zol relevant for each ecological feature; justification of the decision to scope in or out each ecological feature based on the likely scale of the potential effect and general working measures (i.e. those covered within the Construction Environmental Management Plan) that negate the effect; and relevant information on the features status within the local, county, regional, national or international context where that is available.

Table 5B.2 Scoping of ecological features of Local or above importance and those receiving legal protection

Ecological feature	Environmental change ¹⁸ and potential effect	Zol	Scoped in/out	Justification
Mersey Estuary SPA, Ramsar Site and SSSI: all features	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Potential FLL lies within the Draft Order Limits and therefore qualifying features using FLL are at risk of displacement from permanent and/or temporary land take/land use change, and therefore is scoped into the assessment.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	Although potential FLL lies within the Draft Order Limits, it is not considered that the Project would cause fragmentation to any habitats associated with these statutory designated sites as birds will be free to move across the Draft Order Limits and is therefore scoped out of the assessment.
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the construction works for sensitive species	Scoped in	FLL lies within 500m of the Draft Order Limits and therefore qualifying features using FLL are at risk of disturbance and/or displacement from increased noise, vibration, light and movement levels, and therefore is scoped into the assessment.
National statutory designated biodiversity sites with terrestrial ecology features located within 2km of the Draft 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; Brookheys Covert SSSI; Dunsdale Hollow SSSI; Dunham Park SSSI; Beechmill Wood and Pasture SSSI; Warburton’s Wood and Well Wood SSSI.	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped out	None of these SSSIs are located within the Zol. Therefore, there is no pathway for a significant effect on sedentary cited features. Where mobile features are cited, the Zol falls outside the range of these species, and there is no pathway for a significant effect.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	None of these SSSIs are located within the Zol. Therefore, there is no pathway for a significant effect on sedentary cited features. Where mobile features are cited, the Zol falls outside the range of these species, and there is no pathway for a significant effect.
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the construction works for sensitive species	Scoped out	The cited habitat features are not considered sensitive to this environmental change. Where species are cited within the potential Zol (invertebrate fauna; Pettypool Brook Valley SSSI) these species are not considered sensitive to this environmental change at the distance from the Draft Order Limits (approximately 0.18km), and embedded environmental measures outlined in Section 5.6 , specifically Table 5.23 (such as 13. Sensitive

¹⁸ Consideration of increased noise, vibration, light and movement levels is not relevant for any habitats and therefore has not been included as an environmental change for any habitats listed in **Table 5B.2**

Ecological feature	Environmental change ¹⁸ and potential effect	Zol	Scoped in/out	Justification
				lighting design ; also see measures included in Chapter 10: Noise and Vibration) further minimise the potential impact of this environmental change. Therefore, there is no pathway for a significant effect.
Other statutory biodiversity sites within 2km of the Draft 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; Parr Hall Millenium Green LNR; Colliers Moss Common LNR.	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped out	None of these LNRs are located within the Zol. Therefore, there is no pathway for a significant effect on sedentary cited features, and no mobile features are cited. Thatto Heath Meadows LNR is located adjacent to the Draft Order Limits, however, embedded environmental measures outlined in Section 5.6 , specifically Table 5.23 (such as 2. Standard best practice; 3. Minimise land take and micro-site; 6. Maintaining habitat connectivity; 8. Protection of retained habitats; and 11. Sensitive access and enabling works) would minimise the risk of impacts to negligible.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	None of these LNRs are located within the Zol. Therefore, there is no pathway for a significant effect on sedentary cited features, and no mobile features are cited. Thatto Heath Meadows LNR is located adjacent to the Draft Order Limits, however embedded environmental measures outlined in Section 5.6 , specifically Table 5.23 (such as 2. Standard best practice; 3. Minimise land take and micro-site; 6. Maintaining habitat connectivity; 8. Protection of retained habitats; and 11. Sensitive access and enabling works) would minimise the risk of impacts to negligible.
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the construction works for sensitive species	Scoped out	The cited habitat features are not considered sensitive to this environmental change, there is no pathway for a significant effect. Water vole is a cited feature of Parr Hall Millenium Green LNR, however considering this distance of the LNR from the Draft Order Limits (approximately 1.68km) the LNR is outside of the Zol for this species, therefore there is not pathway for significant effect.
Non-statutory designated biodiversity sites located within the Draft Order Limits: Acton Bridge Meadows LWS; Ansdells Wood LWS; Clifton Cloughs_A LWS; Clifton Cloughs_B LWS; Clifton Lagoon LWS; Disused Railway Line South of Warrington Road	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	The following sites are within the Zol where land take/land use change may occur: Acton Bridge Meadows LWS; Clifton Cloughs_A LWS; Clifton Cloughs_B LWS; Clifton Lagoon LWS; Disused Railway Line South of Warrington Road LWS; East Clifton Tip LWS; Frodsham Field Studies Centre LWS; Frodsham, Helsby and Ince Marshes LWS; Moore Nature Reserve LWS; Pendlebury Brook (SJ493920-SJ515914) LWS; Upper Moss Side Farm LWS.

Ecological feature	Environmental change ¹⁸ and potential effect	Zol	Scoped in/out	Justification
LWS; East Clifton Tip LWS; Frodsham Field Studies Centre LWS; Frodsham, Helsby and Ince Marshes LWS; Heys Wood and the Riddings LWS; Moore Nature Reserve LWS; Pendlebury Brook (SJ493920-SJ515914) LWS; Ravenhead Ponds LWS; St Helens Canal Disused_A LWS; Trent and Mersey Canal, Whatcroft LWS; Upper Mersey Estuary LWS; Upper Moss Side Farm LWS; Walton Locks LWS; Weaver Valley/Newbridge Pool LWS			Scoped out	Heys Wood and the Riddings LWS; St Helens Canal Disused_A LWS; Trent and Mersey Canal, Whatcroft LWS; Upper Mersey Estuary LWS; Walton Locks LWS; Weaver Valley/Newbridge Pool LWS: These sites are outside of the Zol due to there being no temporary or permanent land take as a result of trenchless crossing techniques. Ansdells Wood LWS: There is no land take/land use change expected to occur within this site as the works would be restricted to access via an existing hard-standing track. Ravenhead Ponds LWS: Although this site falls within the Draft Order Limits, no works are expected to take place within this site. Therefore there would be no land take/land use change.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	The following sites are within the Zol where fragmentation of habitats may occur: Acton Bridge Meadows LWS; Clifton Cloughs_A LWS; Clifton Cloughs_B LWS; Clifton Lagoon LWS; Disused Railway Line South of Warrington Road LWS; East Clifton Tip LWS; Frodsham Field Studies Centre LWS; Frodsham, Helsby and Ince Marshes LWS; Moore Nature Reserve LWS; Pendlebury Brook (SJ493920-SJ515914) LWS; Upper Moss Side Farm LWS.
			Scoped out	Heys Wood and the Riddings LWS; St Helens Canal Disused_A LWS; Trent and Mersey Canal, Whatcroft LWS; Upper Mersey Estuary LWS; Walton Locks LWS; Weaver Valley/Newbridge Pool LWS: These sites are outside of the Zol as fragmentation of habitats would be avoided as a result of trenchless crossing techniques. Ansdells Wood LWS: There would be no fragmentation of habitat expected to occur within this site as the works will be restricted to access via an existing hard-standing track. Ravenhead Ponds LWS: Although this site falls within the Draft Order Limits, there is no land take/land use change expected to occur within this site.

Ecological feature	Environmental change ¹⁸ and potential effect	Zol	Scoped in/out	Justification
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the construction works for sensitive species	Scoped in	Disused Railway Line South of Warrington Road LWS; Frodsham Field Studies Centre LWS; Frodsham, Helsby and Ince Marshes LWS; Heys Wood and the Riddings LWS; Moore Nature Reserve LWS; Pendlebury Brook (SJ493920-SJ515914) LWS; St Helens Canal Disused_A LWS; Upper Mersey Estuary LWS; Upper Moss Side Farm LWS; Walton Locks LWS; Weaver Valley/Newbridge Pool LWS: Sites within the Zol with cited faunal and/or ornithological features which are potentially sensitive to this environmental change.
			Scoped out	Acton Bridge Meadows LWS; Ansdells Wood LWS; Clifton Cloughs_A LWS; Clifton Cloughs_B LWS; Clifton Lagoon LWS; East Clifton Tip LWS; Ravenhead Ponds LWS; Trent and Mersey Canal, Whatcroft LWS: Sites within the Zol with cited habitat features which are not sensitive to this environmental change.
Non-statutory designated biodiversity sites located within <0.5km of the Draft Order Limits with faunal/ornithological interest features: Helsby Hill LWS; Lower Weaver Valley Woods LWS; Lowes Wood LWS; Morts Wood LWS; Newbridge Wood LWS; Norton Marsh and Upper Moss Side Fields LWS; Rye Grass Pipes LWS; Sherdley Park LWS; St Helens Canal Disused_B LWS; Sutton Manor LWS; Vale Royal Wood LWS; Whittle Brook (SJ521902-SJ535896) LWS.	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped out	None of these sites are located within the Zol. Therefore, there is no pathway for a significant effect. Several of these sites are located adjacent to the Draft Order Limits, however embedded environmental measures outlined in Section 5.6 , specifically Table 5.23 (such as 2. Standard best practice; 3. Minimise land take and micro-site; 6. Maintaining habitat connectivity; 8. Protection of retained habitats; and 11. Sensitive access and enabling works) would minimise the risk of impacts to negligible.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	None of these sites are located within the Zol. Therefore, there is no pathway for a significant effect. Several of these sites are located adjacent to the Draft Order Limits, however embedded environmental measures outlined in Section 5.6 , specifically Table 5.23 (such as 2. Standard best practice; 3. Minimise land take and micro-site; 6. Maintaining habitat connectivity; 8. Protection of retained habitats; and 11. Sensitive access and enabling works) would minimise the risk of impacts to negligible.
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the construction works for sensitive species	Scoped in	The cited habitat features are not considered sensitive to this environmental change. Feature is however, potentially within Zol for faunal species. All of these sites either include cited faunal species, or the cited features are unknown therefore potentially include faunal species. Disturbance/displacement effects are scoped in as a precaution due to the potential for sensitive faunal

Ecological feature	Environmental change ¹⁸ and potential effect	Zol	Scoped in/out	Justification
Non-statutory designated biodiversity sites located within <0.5km of the Draft Order Limits with habitat/botanical interest features: Birds Wood LWS; Broadoak Wood SBI; Carrington Power Station SBI; Cuddington Brook (North) LWS; Dutton Dean LWS; Dutton Dingles LWS; Fields Behind Ye Olde No. 3_A LWS; Fields Behind Ye Olde No. 3_B LWS; Garden Wood LWS; Hefferston Grange Farm Meadows LWS; Latchford Railway Sidings LWS; Littledales Gorse LWS; Lodge Wood LWS; Long Acre Wood LWS; Model Farm Pasture LWS; Model Farm Wood LWS; Nursery Wood LWS; Old mineral line Lea Green LWS; Park Brow LWS; Park Moss Wood LWS; Partington Nature Reserve SBI; Puddinglake Brook Wood LWS; Reeve Court Woodland and grassland LWS; River Dane, Bostock LWS; Rookery Wood and Pool LWS; Rows Wood LWS; Sandiway Golf Course LWS; Sinderland Green Wood SBI; Station Road Railway Site LWS; Sutton Bridge Unused Lagoon LWS; Thatto Heath Meadows LWS; Weaver Valley Country Park LWS; Wharton Green Pasture LWS; Whatcroft Hedge LWS; Whatcroft Lane Wetlands LWS; Whatcroft Woodland LWS.	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped out	species to be present and affected by the environmental change. None of these sites are located within the Zol. Therefore, there is no pathway for a significant effect. Several of these sites are located adjacent to the Draft Order Limits, however embedded environmental measures outlined in Section 5.6 , specifically Table 5.23 (such as 2. Standard best practice ; 3. Minimise land take and micro-site ; 6. Maintaining habitat connectivity ; 8. Protection of retained habitats ; and 11. Sensitive access and enabling works) would minimise the risk of impacts to negligible.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	None of these sites are located within the Zol. Several of these sites are located adjacent to the Draft Order Limits, however embedded environmental measures outlined in Section 5.6 , specifically Table 5.23 (such as 2. Standard best practice ; 3. Minimise land take and micro-site ; 6. Maintaining habitat connectivity ; 8. Protection of retained habitats ; and 11. Sensitive access and enabling works) would minimise the risk of impacts to negligible. With regards to fragmentation of habitats outside the designated site such as hedgerows connecting to the wider landscape, the LWSs are situated in predominantly agricultural landscape where similar connecting habitats remain unaffected in the locality. Any indirect fragmentation effects would be localised, temporary and of short duration. In addition, embedded environmental measures outlined above such as 6. Maintaining habitat connectivity which includes temporarily infilling gaps in hedgerows where this is required, would minimise the risk of impacts to negligible.
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the construction works for sensitive species	Scoped out	Cited features for all of these sites include solely vegetation communities, and no faunal species that could be affected by the environmental change. Therefore, there is no pathway for a significant effect.

Ecological feature	Environmental change ¹⁸ and potential effect	Zol	Scoped in/out	Justification
Non-statutory designated biodiversity sites located between 0.5-2km of the Draft Order Limits: Acton Cliff Meadow LWS; Alexandra Colliery LWS ; Altrincham Sewage Works SBI; Ash Trees along Trent and Mersey Canal, Billinge Green LWS; B W Lagoon, Kingsley LWS; Bank Hall Farm Flush LWS; Barker’s Hollow Wood LWS; Bawsgate Pond and Grassland LWS; Beach Hill Wood LWS; Big Wood LWS; Billinge Green Farm Pond LWS; Birchmoss Covert SBI; Black Moss Covert SBI; Blundell Hills Golf Course LWS; Booth’s Wood LWS; Bostock Road Orchards LWS; Boundary Farm Pond LWS; Bradford Mill Wood and Marsh LWS; Bradley Meadow Wood, Hawton Clough and Little Leigh Ponds LWS; Bridgewater Canal SBI; Brookheys Covert SBI; Bull’s Wood and Meadow LWS; Cartledge Moss LWS; Catsclough LWS; Cliff Brook Meadows LWS; Coroners Wood SBI; Crowholt Wood and Whitley Brook LWS; Daresbury Firs (Keckwick Hill) LWS; Daresbury Firs LWS; Daresbury LWS; Deakin Yard Wood LWS; Dennow Wood LWS; Drakelow Gorse LWS; Dunham Park SBI; Ecclestone Top Dam LWS; First Pit, Ellis Lane LWS; Flint Mill Reedbeds LWS; Flixton Sludge Beds SBI; Fox Covert and Meadows SBI; Friar’s Rough LWS; Frodsham and Overton Woods; Gowy Meadows and Ditches LWS; Grappenhall Heys_A LWS; Grappenhall Heys_B LWS; Green Wood	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped out	None of these sites are located within the Zol. Therefore, there is no pathway for a significant effect.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	None of these sites are located within the Zol. Therefore, there is no pathway for a significant effect.
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the construction works for sensitive species	Scoped out	None of these sites are located within the Zol. Therefore, there is no pathway for a significant effect.

Ecological feature	Environmental change ¹⁸ and potential effect	ZoI	Scoped in/out	Justification
LWS; Greenbank Wood LWS; Grey’s Gorse LWS; Haresfinch Burgy Banks LWS; Harmers Wood LWS; Heath Off Bradford Road LWS; Heatley Lake_A LWS; Heatley Lake_B LWS; Helsby Allotments and Cemetery LWS; Helsdale Wood and Newhey’s Plantation LWS; Hob Hey Wood LWS; Hogswood Covert SBI; Jack Lane SBI; Kennel Wood, Sandiway LWS; Land North of Hallwood Park LWS; Land off Lunts Heath Road_A LWS; Land off Lunts Heath Road_B LWS; Land, west of Gerrards Lane LWS; Leg O’ Mutton Dam LWS; Lower Weaver Valley Floodplain LWS; Lymm Dam Complex LWS; Manor Park Woodland LWS; Meadow by Earls Wood and River Dane LWS; Merryfall Wood LWS; Mersey Valley Golf Course LWS; Mill Wood, Big Wood & Willowbed Wood LWS; Moore Meadows LWS; Moss Wood SBI; Murdishaw Wood and Valley LWS; New Pool and Wood LWS; Norbury Wood LWS; Oak Wood near School Lane SBI; Old River Irwell SBI; Owley Wood LWS; Oxmoor_A LWS; Oxmoor_B LWS; Paddington Meadows LWS; Park Brow Pool LWS; Parkside Farm Wood LWS; Parr Hall Millenium Green and Canal LWS; Pear Tree Farm LWS; Petty Pool Brook and Woods LWS; Pex Hill Country Park LWS; Pickering’s Oxbow LWS; Pitts Heath Wood LWS; Quick Woods LWS; Ravensclough; Ravensclough Marsh LWS; Redmoor Covert SBI; River Gowy LWS; Rough Grassland				

Ecological feature	Environmental change ¹⁸ and potential effect	Zol	Scoped in/out	Justification
around Sutton Dam Stream LWS; Sankey Canal Central_A LWS; Sankey Canal Central_B LWS; Snipe Island LWS; Southern Verge Embankment LWS; St Helens Canal LWS; St Helens Canal, south of Haresfinch Burgy Bank LWS; Stenhills Open Space LWS; Stockton Heath Quarry LWS; Stretton Moss LWS; Sutton Brook (SJ530935-SJ526945) LWS; Sutton Mill Dam LWS; Thatto Heath Dam LWS; The Bongs and the Gorse LWS; The Dingle and Ford’s Rough LWS; The Glen LWS; The Rough, woodland LWS; The Twiggeries LWS; The Willowbeds LWS; Thelwall Meadow LWS; Tunstalls Farm LWS; Upper Mersey Estuary Intertidal Areas and Mudflats LWS; Veteran Ash Tree - Bank Farm, Bostock LWS; Veteran Ash Tree - Bank Hall Farm LWS; Wades Lane Clough LWS; Wervin Meadows LWS; Weston Marsh Lagoon LWS; Westy Point LWS; Wetland at Carrington Moss SBI; Whitegate Way LWS; Whiteoaks Wood SBI; Widnes Warth Saltmarsh LWS; Woolston New Cut Canal LWS.				
Ancient woodland/ancient replanted woodland and veteran trees	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped out	Project design considerations and embedded environmental measures outlined in outlined in Section 5.6 , specifically Table 5.23 (such as 3. Minimise land take and micro-site ; 6. Protection of ancient/veteran trees ; and 8. Protection of retained habitats) will ensure that permanent loss of these habitats is avoided. One Ancient woodland, Heys Wood, and one ancient/veteran tree (T1204 along the Southern Mainline) were identified within the Draft Order Limits (presented within Appendix 8C). Heys Wood will be avoided by the works through trenchless crossing method at a depth of at least 6m and a min 25m standoff from the edge of the wood to avoid root damage and disturbance. Tree T1204

Ecological feature	Environmental change ¹⁸ and potential effect	ZoI	Scoped in/out	Justification
				will be retained through the implementation of protection measures which will ensure either a buffer zone of 15 times the diameter of the tree or 5m from the edge of the tree’s canopy will be maintained. In addition, all ground works will be restricted to areas in excess of 25m from the edge of all Ancient woodland that are situated in close proximity of the Draft Order Limits.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scope out	No ancient woodland or veteran trees will be lost as a result of the works and fragmentation of habitats would be avoided as a result of trenchless crossing techniques/suitable standoff zones where these habitat types occur.
Lowland mixed deciduous woodland (HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss is envisaged.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss leading to fragmentation is envisaged.
Wet woodland (HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss is envisaged.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss leading to fragmentation is envisaged.
Hedgerows (HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss is envisaged.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss leading to fragmentation is envisaged.
Watercourses (rivers, stream, canals, and running and standing water ditches) (including River HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI, and permanent or temporary land take resulting in habitat loss and/or degradation may occur to watercourses, including rivers, streams, ditches and canals.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI, and permanent or temporary land take resulting in fragmentation may occur to watercourses, including rivers, streams, ditches and canals.

Ecological feature	Environmental change ¹⁸ and potential effect	ZoI	Scoped in/out	Justification
Ponds (including Ponds HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI, and permanent or temporary land take resulting in fragmentation may occur to open standing water, including pond HPI.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI, and permanent or temporary land take resulting in fragmentation may occur to standing open water, including pond HPI.
Lowland dry acid grassland (HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss is envisaged.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss leading to fragmentation is envisaged.
Coastal and floodplain grazing marsh (HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss is envisaged.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss leading to fragmentation is envisaged.
Arable field margins (HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss is envisaged.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss leading to fragmentation is envisaged.
Reedbeds (HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss is envisaged.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss leading to fragmentation is envisaged.
Intertidal mudflat (HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped out	Feature is outside of the ZoI as land take/land use change would be avoided as a result of trenchless crossing techniques of all intertidal areas where the habitat type occurs.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	Feature is outside of the ZoI as fragmentation of habitats would be avoided as a result of trenchless crossing techniques of all intertidal areas where the habitat type occurs.

Ecological feature	Environmental change ¹⁸ and potential effect	ZoI	Scoped in/out	Justification
Open mosaic on previously developed land (HPI)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss is envisaged.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss leading to fragmentation is envisaged.
Other non-priority habitats with biodiversity benefit: Other woodland (broadleaved, mixed and coniferous; including plantation); Other neutral grassland and sub-communities; Other swamp.	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss is envisaged.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	Feature is within the ZoI and direct habitat loss leading to fragmentation is envisaged.
Bats	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within ZoI: bat surveys undertaken to date have identified four bat roosts within trees, and 11 species of bats using habitats within the Draft Order Limits for foraging and commuting activities. Bats and the habitat they utilise is within the ZoI for these environmental changes and associated potential effects.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Up to ~4km from the construction/operational works	Scoped in	
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to ~100m from the construction/operational works	Scoped in	
Great crested newt (St Helens only ¹⁹)	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Up to ~250m from the construction/operational works	Scoped in	Feature is within ZoI: eDNA surveys have identified presence of great crested newts in two ponds within 250m of the Draft Order Limits, and suitable terrestrial habitat is present throughout the Draft Order Limits.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Up to ~250m from the construction/operational works	Scoped in	
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	N/A	Scoped out	Great crested newts are not sensitive to significant disturbance from this environmental change.
Otter	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within ZoI: surveys have identified evidence of otter activity and rest sites on occasional watercourses,

¹⁹ 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, but otherwise removes the requirement to include great crested newts in the Ecological Impact Assessment (EcIA). DLL is not currently available in St Helens, therefore great crested newts are included in the EcIA for this area only.

Ecological feature	Environmental change ¹⁸ and potential effect	ZoI	Scoped in/out	Justification
	Fragmentation of habitats (resulting in a reduction in connectivity)	Up to ~200m from the construction/operational works	Scoped in	and suitable habitat is relatively widespread within the Draft Order Limits.
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to ~200m from the construction/operational works	Scoped in	
Water vole	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within ZoI: surveys have identified evidence of water vole activity and burrows on occasional watercourses, and suitable habitat is relatively widespread within the Draft Order Limits.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Up to ~500m upstream and downstream from the construction/operational works within a watercourse	Scoped in	
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Minimum of ~5m from the construction/operational works	Scoped in	
Reptiles	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within ZoI: surveys have identified presence of adder at one survey site within optimal habitat, and suitable habitat is widespread throughout the Draft Order Limits.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Up to ~50m from the construction/operational works	Scoped in	
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	N/A	Scoped out	Reptiles are not sensitive to significant disturbance from this environmental change.
Badger	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Approximately 30m from the construction/operational works	Scoped in	Feature is within ZoI: surveys have identified numerous badger setts and other evidence of activity throughout the Draft Order Limits, and suitable habitat for badgers is widespread throughout the Draft Order Limits.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Approximately 30m from the construction/operational works	Scoped in	
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to approximately 30m from the construction/operational works	Scoped in	
Fish	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Fish species of conservation interest were identified from desk searches and field surveys of watercourses intersected by the Draft Order Limits, including European

Ecological feature	Environmental change ¹⁸ and potential effect	Zol	Scoped in/out	Justification
	Fragmentation of habitats (resulting in a reduction in connectivity and obstruction of migratory pathway)	Within the footprint of the construction/operational works	Scoped in	eel, brown/sea trout, Atlantic salmon, river lamprey, sea lamprey, brook lamprey, Atlantic herring, and European bullhead.
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the construction works for sensitive species	Scoped in	Species are afforded legal protection and are considered of sufficient importance that a potential likely significant effect may occur from permanent or temporary land take/land use change, fragmentation of habitats and increased noise, vibration, light and movement levels. As such, fish have been scoped in for further assessment.
White-clawed crayfish	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Although white-clawed crayfish were not confirmed present during field surveys (e-DNA), historic records suggest the species may be found across some areas of the Draft Order Limits. This species has been included based on a precautionary approach.
	Fragmentation of habitats (resulting in a reduction in connectivity and obstruction of migratory pathway)	Within the footprint of the construction/operational works	Scoped in	
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the construction works for sensitive species	Scoped in	Species are afforded legal protection and are considered of sufficient importance that a potential significant effect may occur from permanent or temporary land take/land use change, fragmentation of habitats and increased noise, vibration, light and movement levels. As such, white-clawed crayfish have been scoped in for further assessment.
SPI and other conservation-notable vertebrate species	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped out	The desk study identified 650 records of five conservation-notable vertebrate species within 2km of the Draft Order Limits. Although, features are assumed to be present within the Zol 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 outlined in Section 5.6 , specifically Table 5.23 (such as 2. Standard best practice ; 3. Minimise land take and micro-site ; 5. Sensitive vegetation removal ; 6. Maintaining habitat connectivity ; and 8. Protection of retained habitats) 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, while BNG will be provided as a separate enhancement.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to ~50m from the construction works for sensitive species	Scoped out	

Ecological feature	Environmental change ¹⁸ and potential effect	ZoI	Scoped in/out	Justification
SPI and other conservation-notable terrestrial invertebrate species	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Feature is within ZoI: target surveys of favourable habitat have identified notable SPI and other conservation-notable terrestrial invertebrate species the Draft Order Limits.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 50m from the construction works for sensitive species	Scoped out	SPI and other conservation-notable terrestrial invertebrate species identified within the Draft Order Limits are not considered sensitive to increased noise, vibration, light and movement levels. As such, the potential effect to SPI and other conservation-notable terrestrial invertebrate species has been scoped out from further assessment.
SPI and other conservation-notable aquatic invertebrate species	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Several species of conservational importance were identified from desk searches and field survey within watercourses intersected by the Draft Order Limits. Conservational important species are considered of sufficient importance that a potentially significant effect may occur from permanent or temporary land take/land use change and fragmentation of habitats. As such, potential effects from permanent or temporary land take/land use change to SPI and other conservation-notable aquatic invertebrate species has been scoped in for further assessment.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	Potential fragmentation of habitats of SPI and other conservation-notable aquatic invertebrate species identified within watercourses intersected by the Draft Order Limits is considered unlikely to result in likely significant effects to these species. Temporary fragmentation of aquatic invertebrate habitat may occur where open cut watercourse crossing methods are required, for watercourses in proximity to entry and exit pits for trenchless crossings, and where temporary culverts are used. However, fragmentation is considered temporary, and embedded mitigation outlined in Section 5.6 , specifically Table 5.23 (such as 2. Standard best practice ; 6. Maintaining habitat connectivity ; 10: Habitat reinstatement , 11. Sensitive areas and enabling works , and 8. Protection of watercourses) will ensure that fragmentation of these habitats is minimised and avoided where possible. As such, potential effects from the fragmentation of habitats to SPI and other conservation-notable aquatic invertebrate species has been scoped out from further assessment.

Ecological feature	Environmental change ¹⁸ and potential effect	Zol	Scoped in/out	Justification
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 50m from the construction works for sensitive species	Scoped out	SPI and other conservation-notable aquatic invertebrate species identified within the watercourses intersected by the Draft Order Limits are not considered sensitive to increased noise, vibration, light and movement levels. As such, potential effects from the increased noise, vibration, light and movement to SPI and other conservation-notable aquatic invertebrate species has been scoped out from further assessment.
SPI and other conservation-notable aquatic macrophytes	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Two conservation notable species of were identified from desk searches and field survey within watercourses intersected by the Draft Order Limit. Conservational important species are considered of sufficient importance that a potentially significant effect may occur from permanent or temporary land take/land use change and fragmentation of habitats. As such, SPI and other conservation-notable aquatic invertebrate species have been scoped-in for further assessment.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	Potential fragmentation of habitats of SPI and other conservation-notable macrophyte species identified within the watercourses intersected by the Draft Order Limits is considered unlikely to result in likely significant effects to these species. Temporary fragmentation of macrophyte habitat may occur where open cut watercourse crossing methods are required, for watercourses in proximity to entry and exit pits for trenchless crossings, and where temporary culverts are used. However, fragmentation is considered temporary, and embedded mitigation outlined in Section 5.6 , specifically Table 5.23 (such as 2. Standard best practice ; 5. Sensitive vegetation removal , 6. Maintaining habitat connectivity ; 10: Habitat reinstatement , 11. Sensitive areas and enabling works , and 8. Protection of watercourses) will ensure that fragmentation of these habitats is minimised and avoided where possible. As such, potential effects from the fragmentation of habitats to SPI and other conservation-notable aquatic invertebrate species has been scoped out from further assessment.
SPI and other protected/conservation-notable terrestrial plant species	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	The desk study identified records of 362 SPI and protected/conservation-notable plant species within 2km of the Draft Order Limits. Detailed botanical surveys (National Vegetation Classification) surveys are on-going during 2024 at targeted locations with potential to support high floristic diversity, priority habitats, and non-statutory designated sites with habitats listed as a reason
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped in	

Ecological feature	Environmental change ¹⁸ and potential effect	Zol	Scoped in/out	Justification
				for designation which could be directly affected. As a precaution, feature is assumed to be present within the Zol, and will be reviewed in the following completion of baseline surveys.
Breeding birds: Schedule 1 listed species	Permanent or temporary land take/land use change (resulting in habitat loss or degradation and/or loss of fauna)	Within the footprint of the construction/operational works	Scoped in	Schedule 1 breeding bird surveys undertaken in 2022 and 2024 identified the following species breeding within at the Zol (500m of the Draft Order Limits): avocet, barn owl, marsh harrier, kingfisher and Cetti's warbler. Therefore, effects on this feature through land take have been scoped in.
	Fragmentation of habitats (resulting in a reduction in connectivity)	Within the footprint of the construction/operational works	Scoped out	The fragmentation of habitats is scoped out given the temporary nature of the construction works and the mobility of this feature. Additionally embedded environmental measures outlined in Section 5.6 , specifically Table 5.23 (such as 2 – Standard best practice , 3 – Minimise land take and micro-site , 4 – CEMP , 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 15 – Pre-construction update surveys) will ensure that permanent loss and fragmentation of habitats supporting this feature is minimised and avoided where possible.
	Increased noise, vibration, light and movement levels (resulting in disturbance and/or displacement)	Up to 500m from the construction works for sensitive species	Scoped in	Feature is within the Zol and there is potential or direct habitat loss leading to fragmentation.

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