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Warrington Borough Council Proposed Submission Version Local Plan

Habitat Regulations Assessment

Warrington Borough Council

15 March 2019

Quality information

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Revision History

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0	19/02/19	For client review	JR	James Riley	Technical Director
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Table of Contents

1. Introduction

Scope of the Project

1.1 AECOM was appointed by Warrington Borough Council to assist in undertaking a Habitats Regulation Assessment (HRA) of their Proposed Submission Local Plan 2017-2037. Documented within the Local Plan is Warrington's overarching strategic policies and the location and level of development within the Borough.

1.2 The purpose of this report is to provide analysis of all policies and site allocations documented with the Local Plan. The report also identifies other plans or projected what could pose a likely significant effect to Natura 2000 sites, also known as European Sites that are located within influence of Warrington Borough.

Legislation

1.3 The need for HRA is set out within Article 6 of the EC Habitats Directive 1992, and interpreted into British law by the Conservation of Habitats & Species Regulations 2017 (as amended). The ultimate aim of the Habitats Directive is to "*maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest*" (Habitats Directive, Article 2(2)). This aim relates to habitats and species, not the European sites themselves, although the sites have a significant role in delivering favourable conservation status. European sites (also called Natura 2000 sites) can be defined as actual or proposed/candidate Special Areas of Conservation (SAC) or Special Protection Areas (SPA). It is also Government policy for sites designated under the Convention on Wetlands of International Importance (Ramsar sites) to be treated as having equivalent status to Natura 2000 sites.

1.4 The Habitats Directive applies the precautionary principle to protected areas. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. This is in contrast to the SEA Directive which does not prescribe how plan or programme proponents should respond to the findings of an environmental assessment; merely that the assessment findings (as documented in the 'environmental report') should be 'taken into account' during preparation of the plan or programme. In the case of the Habitats Directive, plans and projects may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

1.5 In order to ascertain whether or not site integrity will be affected, a HRA should be undertaken of the plan or project in question.

Habitats Directive 1992

Article 6 (3) states that:

"*Any plan of project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives."*

Conservation of Habitats and Species Regulations 2017 (as amended)

Regulation 105 states that:

"*Where a land use plan is likely to have a significant effect on a European site … the plan making authority must make an appropriate assessment of the implications for the plan or project in view of that site's conservation objectives… The plan making authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site."*

Figure 1: The legislative basis for HRA

1.6 Over the years, ‘Habitats Regulations Assessment’ (HRA) has come into wide currency to describe the overall process set out in the Habitats Regulations, from screening through to identification of IROPI. This has arisen in order to distinguish the overall process from the individual stage of "Appropriate Assessment". Throughout this Report the term HRA is used for the overall process and restricts the use of Appropriate Assessment to the specific stage of that name.

2. Methodology

Introduction

2.1 This section sets out the approach and methodology for undertaking the HRA. HRA itself operates independently from the Planning Policy system, being a legal requirement of a discrete Statutory Instrument. Therefore there is no direct relationship to the 'Test of Soundness'.

2.2 The HRA is being carried out in the absence of formal Government guidance. The Department for Communities and Local Government (now the Ministry of Housing, Communities and Local Government) released a consultation paper on Appropriate Assessment (AA) of Plans in 2006[1]. As yet, no further formal guidance has emerged. However, Court Judgements can be used to shape the approaches used.

2.3 The draft MHCLG guidance[2] makes it clear that when implementing HRA of land-use plans, the AA should be undertaken at a level of detail that is appropriate and proportional to the level of detail provided within the plan itself: "*The comprehensiveness of the [Appropriate] assessment work undertaken should be proportionate to the geographical scope of the option and the nature and extent of any effects identified. An AA need not be done in any more detail, or using more resources, than is useful for its purpose. It would be inappropriate and impracticable to assess the effects* [of a strategic land use plan] *in the degree of detail that would normally be required for the Environmental Impact Assessment (EIA) of a project*." More recently, the Court of Appeal[3] ruled that providing the Council (competent authority) was duly satisfied that proposed mitigation could be 'achieved in practice' to avoid an adverse effect, then this would suffice. This ruling has since been applied to a planning permission (rather than a Core Strategy)[4]. In this case the High Court ruled that for *'a multistage process, so long as there is sufficient information at any particular stage to enable the authority to be satisfied that the proposed mitigation can be achieved in practice it is not necessary for all matters concerning mitigation to be fully resolved before a decision maker is able to conclude that a development will satisfy the requirements of reg. 61 of the Habitats Regulations*'.

2.4 In other words, there is a tacit acceptance that HRA can be tiered and that all impacts are not necessarily appropriate for consideration to the same degree of detail at all tiers.

2.5 **Figure 2** below outlines the stages of HRA according to current draft MHCLG guidance. The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations and any relevant changes to the plan until no significant adverse effects remain.

[1] MHCLG (was CLG) (2006) Planning for the Protection of European Sites, Consultation Paper
[2] Ibid
[3] No Adastral New Town Ltd (NANT) v Suffolk Coastal District Council Court of Appeal, 17th February 2015
[4] High Court case of R (Devon Wildlife Trust) v Teignbridge District Council, 28 July 2015

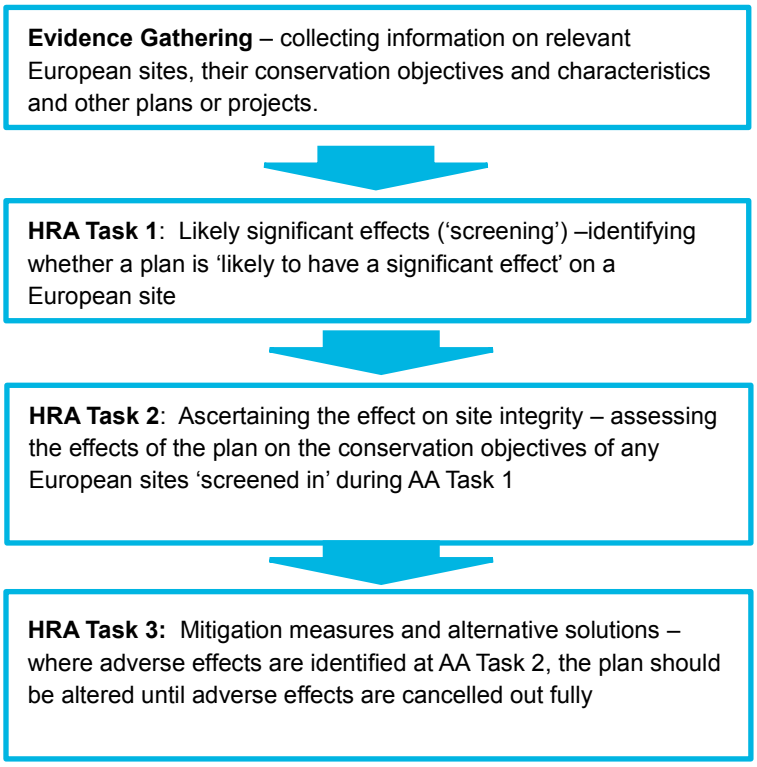


Figure 2: Four-Stage Approach to Habitats Regulations Assessment (Source: CLG, 2006)

Likely Significant Effects (LSE)

2.6 The first stage of any Habitats Regulations Assessment (HRA Task 1) is a Likely Significant Effect (LSE) test - essentially a risk assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is:

2.7 "Is the Plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?"

2.8 The objective is to 'screen out' those plans and projects that can, without any detailed appraisal, be said to be unlikely to result in significant adverse effects upon European sites, usually because there is no mechanism for an adverse interaction with European sites.

2.8.1 The level of detail in land use plans concerning developments that will be permitted under the plans is rarely sufficient to allow the fullest quantification of potential adverse effects. It is therefore necessary to be cognisant of the fact that HRAs for plans can be tiered, with assessments being undertaken with increasing specificity at lower tiers. This is in line with DCLG guidance and court rulings that the level of detail of the assessment, whilst meeting the relevant requirements of the Habitats Regulations, should be '*appropriate'* to the level of plan or project that it addresses. This 'tiering' of assessment is summarised in Figure 2-2.

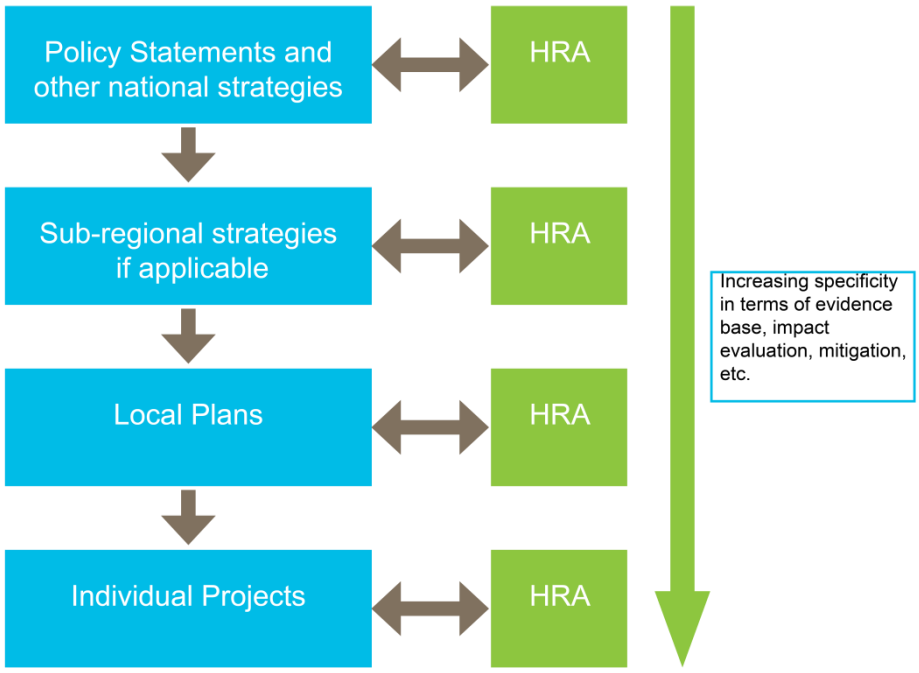


Figure 3. Tiering in HRA of land use plans

2.9 On these occasions the advice of Advocate-General Kokott[5] to the European Court of Justice is worth considering. She commented that: *"It would …hardly be proper to require a greater level of detail in preceding plans* [rather than planning applications] *or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated on one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the procedure* ***to the extent possible on the basis of the precision of the plan***. ***This assessment is to be updated with increasing specificity in subsequent stages of the procedure****"* [emphasis added].

2.10 This HRA undertook a strategic assessment 'in combination' of all polices drafted within Warrington's Proposed Submission Local Plan 2017-2037 regarding, air quality, water quality, urbanisation and other impact pathways.

HRA Task 2- Appropriate Assessment

2.11 Where it is determined that a conclusion of 'no likely significant effect' cannot be drawn, the analysis has proceeded to the next stage of HRA known as Appropriate Assessment. Case law has clarified that 'appropriate assessment' is not a technical term. In other words, there are no particular technical analyses, or level of technical analysis, that are classified by law as belonging to appropriate assessment.

2.12 By virtue of the fact that it follows Screening, there is a clear implication that the analysis will be more detailed than undertaken at the Screening stage and one of the key considerations during appropriate assessment is whether there is available mitigation that would entirely address the potential effect. In practice, the appropriate assessment would take any policies or allocations that could not be dismissed following the high-level Screening analysis and analyse the potential for an effect in more detail, with a view to concluding whether there would actually be an adverse effect on integrity (in other words, disruption of the coherent structure and function of the European site(s)).

[5] Opinion of Advocate-General Kokott, 9th June 2005, Case C-6/04. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland, paragraph 49.
http://curia.europa.eu/juris/document/document.jsf?docid=58359&doclang=EN

2.13 A 2018 decision by the European Court of Justice[6], which appears to conclude that measures intended to avoid or reduce the harmful effects of a proposed project on a European site, but which are not an integral part of the project or plan, may no longer be taken into account by competent authorities at the Likely Significant Effects or 'screening' stage of HRA. The implications of the ECJ ruling are structural, essentially meaning that the role of avoidance and measures should be discussed in the subsequent 'appropriate assessment' stage instead, with a more in-depth, reasoned scientific basis.

2.14 A more recent 2018 case[7] also confirmed that an appropriate assessment must consider the interest features of European sites even where those features may be found outside the strict boundaries of those sites and must also consider other habitat types or species, which are present on the site, but for which that site has not been listed but which are necessary to the conservation of the habitat types and species listed for the protected area. The former matter is captured in this HRA through consideration of impacts on land within 500m of Rixton Clay Pits SAC and which could therefore be functionally of high importance for the great crested newt population of that site.

HRA Task 3 – Avoidance and Mitigation

2.15 Where necessary, measures are recommended for incorporation into the Plan in order to avoid or mitigate adverse effects on European sites. There is considerable precedent concerning the level of detail that a Local Plan document needs to contain regarding mitigation for recreational impacts on European sites. The implication of this precedent is that it is not necessary for all measures that will be deployed to be fully developed prior to adoption of the Plan, but the Plan must provide an adequate policy framework within which these measures can be delivered.

2.16 In evaluating significance, AECOM has relied on professional judgement as well as the results of previous stakeholder consultation regarding development impacts on the European sites considered within this assessment.

2.17 When discussing 'mitigation' for the proposed development sites, one is concerned primarily with the policy framework to enable the delivery of such mitigation rather than the details of the mitigation measures themselves since the Local Plan document is a high-level policy document.

Confirming other Plans and Projects that may act 'in combination'

2.18 The Conservation of Habitats and Species Regulations (2017 as amended) require that plans are not considered purely in isolation but 'in combination' with other projects and plans. Those in relation to the Warrington Borough include:

- St. Helens Local Plan 2014-2037: Draft publication 2017[8]
- St. Helens Local Plan 2018-2033: Preferred Options 2016[9]
- Halton Local Plan 2014-2037: Delivery and Allocations Local Plan[10]
- Cheshire West and Chester Council Local Plan: Part One Strategic Policies 2015[11]
- Cheshire West and Chester Council Local Plan: Part Two Land Allocation and Detailed Policies[12]
- Cheshire East Local Plan Strategy 2010-2030 (adopted 2017)[13]
- Cheshire East Site Allocations and Development Policies Document (Developing 2018)[14]
- Trafford Local Plan: Core Strategy (Adopted 2012)[15]

[6] People Over Wind and Sweetman v Coillte Teoranta (C-323/17)
[7] Holohan et al vs. An Bord Pleanála (C-461/17)
[8] http://councillors.halton.gov.uk/documents/s49211/1.%20Draft%20Local%20Plan%20EB%20Rev1.pdf
[9] https://www.sthelens.gov.uk/media/5058/1600596-local-plan-preferred-options-1-168.pdf
[10] http://councillors.halton.gov.uk/documents/s49211/1.%20Draft%20Local%20Plan%20EB%20Rev1.pdf
[11] http://consult.cheshirewestandchester.gov.uk/portal/cwc_ldf/adopted_cwac_lp/lp_1_adopted?tab=files
[12] http://consult.cheshirewestandchester.gov.uk/portal/cwc_ldf/cw_lp_part_two/sub/parttwosub
[13] https://www.cheshireeast.gov.uk/planning/spatial_planning/cheshire_east_local_plan/local-plan-strategy/local_plan_strategy.aspx
[14] https://www.cheshireeast.gov.uk/planning/spatial_planning/cheshire_east_local_plan/site_allocations_and_policies.aspx
[15] https://www.trafford.gov.uk/planning/strategic-planning/docs/core-strategy-adopted-final.pdf

- Draft Salford Local Plan 2015-2035[16]
- Wigan Local Plan Core Strategy (Adopted 2013)[17]

Internationally Designated Sites within and around Warrington Borough

2.19 There are several internationally designated sites within 10km of Warrington borough. These are:

- Manchester Mosses Special Area of Conservation SAC, consisting of:
  - Risley Moss Site of Special Scientific Interest (SSSI) and Local Nature Reserve (LNR)
  - Holcroft Moss SSSI
  - Astley and Bedford Mosses SSSI
- Rixton Clay Pits SAC
- Rostherne Mere Ramsar site
- Mersey Estuary SPA and Ramsar site
- Midland Mere and Mosses – Phase 1 and 2 Ramsar site
- West Midlands Mosses SAC

Table 1: Physical scope of the HRA

European sites	Location
Manchester Mosses SAC	Within Warrington Borough
Rixton Clay Pits SAC	Within Warrington Borough
Rostherne Mere Ramsar	– 3km south east of the Borough boundary.
Mersey Estuary SPA and Ramsar	– 3.5km south west of the Borough boundary. The upper River Mersey is located within the Borough.
Midland Meres and Mosses - Phase 1 Ramsar	– 4km south east of the Borough boundary.
Midland Meres and Mosses – Phase 2 Ramsar	– 6.7km south of the Borough boundary.

Ecological Context and interest features of designated sites

Manchester Mosses SAC

Introduction

2.20 Before the urbanisation of Manchester, the River Mersey had an extensive flood plain that supported a variety of bog habitats and species. However, post 20th century extreme changes in flooding behaviour of the river were brought about due to river and runoff modifications[18]. As a result, much of the specialist bog habitats and species have been lost either due to drainage for agriculture and development. Manchester Mosses SAC hold some of the largest remaining raised bog within Greater Manchester, Merseyside and southern Lancashire. There are three components of this SAC within and around Warrington: Risley Moss, Holcroft Moss (both within the borough) and Astley & Bedford Mosses (600m north-east of the borough).

[16] https://www.salford.gov.uk/media/389542/161102-draft-local-plan.pdf
[17] https://www.wigan.gov.uk/docs/pdf/council/strategies-plans-and-policies/planning/adopted-core-strategy.pdf
[18] https://www.mangeogsoc.org.uk/egm/5_1.pdf [Accessed: 07/11/2018]

Features of European Interest[19]

2.21 The Manchester Mosses SAC qualities for its Annex I habitats. This includes:

- Degraded raised bogs still capable of natural regeneration.

2.22 Species of interest that can be found at the SAC include:

- Purple moor grass *Molinia cearulea;*
- Common cotton grass *Eriophorum angustiflolia;*
- Hare's cotton grass *Eriophorum vaginaum;* and
- Bog mosses *Shagnum sp.*

Conservation objectives

2.23 '*Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;*

- *The extent and distribution of qualifying natural habitats;*
- *The structure and function (including typical species) of qualifying natural habitats; and*
- *The supporting processes on which qualifying natural habitats rely*.'[20]

Historic trends and current pressures

2.24 As previously mentioned, parts of the Manchester Mosses SAC were drained in the past and subject to habitat degradation. This has led to the dominance of vegetation types such as purple moor grass, bracken *Pterdium aquilinum* and birch *Betula sp* but the 1980s. To date, these bogs have been subject to habitat management and involve the re-wetting of the bogs to allow colonisation of bog specialists such as *Sphagnum* mosses with the remaining areas at slightly higher elevations supporting wet woodland and fen habitat.

Key environmental conditions

2.25 The key environmental conditions that support the features of European interest have been defined as:

- Re-wetting project – to create wet woodland and lagg to buffer the moss and allow more natural hydrological function.
- Create new area of wetland to buffer the mosses and develop linkages between the three components of the SAC.
- Control, reduce and ameliorate atmospheric nitrogen impacts.

Rixton Clay Pits SAC

Introduction

2.26 Rixton Clay Pits was excavated before the 1960's for glacial boulder clay. However, since excavations ceased the series of hollows left filled with water developing pools of various compositions. Parts of the clay pits that are above the water level are still wet and support wetland communities of fen, swamp, wet woodland and grassland. The site is also important for recreation[21].

Features of European interest

2.27 Rixton Clay Pits SAC qualities for its Annex II species:

- Great crested newt *Triturus cristatus* – occurs in 20 ponds across the site, holding the largest breeding population of newts in Cheshire.

2.28 Other species of interest that can be found at the SAC, but which are not in themselves fundamentally important in supporting the great crested newt population, include:

- Northern marsh orchid *Dactylorhiza praetermissa*

[19] http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0030200 [Accessed: 07/11/2018]
[20] http://publications.naturalengland.org.uk/publication/5283870555504640 [Accessed: 07/11/2018]
[21] https://www.warrington.gov.uk/homepage/555/rixton_claypits_local_nature_reserve [Accessed: 19/02/2019]

- Yellow-wort *Blackstonia perfoliata*
- Blue fleabane *Erigeron acris*
- Creeping willow *Salix repens*

Conservation objectives

2.29 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of the habitats of qualifying species;*
- *The structure and function of the habitats of qualifying species;*
- *The supporting processes on which the habitats of qualifying species rely;*
- *The populations of qualifying species; and*
- *The distribution of qualifying species within the site*[22].

Historic trends and current pressures

2.30 Excavation activities are no longer a current pressure to the landscape; however, due to the isolated nature of the green space there are now direct impacts from 3rd parties in the form of fly-tipping of waste material. This acts as a pressure/ threat to the large great crested newt population supported by the SAC[23].

2.31 Historical pressures to the site include the stocking of the lakes with predatory fish species such as carp, pike and bream[24]. Predatory fish can have impacts to vulnerable great crested newt larvae and eggs. Larger fish species such as carp can have addition impacts to newts by stirring up sediment and removing weed used as an egg-laying substrate[25].

Key environmental conditions

2.32 The key environmental conditions that support the features of European interest have been defined as:

- Preservation of unpolluted open water and an adequate amount of suitable foraging and over-wintering habitat within the SAC and within 500m of its boundary;
- Removed fly-tipping waste; and
- Enforcement action to address fly-tipping.

Rostherne Mere Ramsar

Introduction

2.33 Rostherne Mere forms part of a series of open water peatland these include peat bog and marsh areas. It is one of the deepest and largest meres within the Cheshire area. Due to the depth of the mere there is little submerged vegetation, however, there is vegetation communities that fringe the circumference of the lake. Species that can be found here include Common reed *Phragmites australis*, with Lesser reedmace *Typha angustifolia* and Cweet flag *Acorus calamus*[26].

Features of European Interest

2.34 The Rostherne Mere Ramsar qualities for its Annex II species. This includes:

- Great cormorant *Phalacrocorax carbo carbo* - 273 individuals, representing an average of 1.1% of the GB population;
- Great bittern *Botaurus stellaris stellaris* - 1 individuals, representing an average of 1% of the GB population; and

[22] http://publications.naturalengland.org.uk/publication/5186918258049024 [Accessed: 27/11/2018]
[23] http://publications.naturalengland.org.uk/publication/5221653453733888 [Accessed: 27/11/2018]
[24] https://www.warrington-anglers.org.uk/Waters/StillWaters/RixtonClayPits/tabid/1711/Default.aspx [Accessed: 27/11/2018]
[25] https://freshwaterhabitats.org.uk/wp-content/uploads/2013/09/Controlling-Fish-Sept-2010-1.pdf [Accessed: 27/11/2018]
[26] https://designatedsites.naturalengland.org.uk/SiteGeneralDetail.aspx?SiteCode=UK11060&SiteName=rost&countyCode=&responsiblePerson=&SeaArea=&IFCAArea [Accessed: 27/11/2018]

- Water rail *Rallus aquaticus* - 6 individuals, representing an average of 1.3% of the GB population.

Conservation objectives

2.35 At the time of writing the management plan for the Ramsar site is under preparation. As such, there are no clear conservation objectives that have been produced. However, there are current scientific research areas that are under investigation. These include:

- Catchment management planning;
- Peatland restoration and monitoring;
- Fen rehabilitation;
- Limnology and hydrology;
- Water chemistry;
- Trophic status;
- Peat paleo-ecology; and
- Impacts of fish.

Historic trends and pressures

2.36 The site is vulnerable to air pollution and water quality issues via eutrophication and the introduction of non-native plant species.

Mersey Estuary SPA/Ramsar[27]

Introduction

2.37 The Mersey Estuary SPA/Ramsar is located off the north-west coast of England and is a large sheltered estuary that is comprised of saltmarsh and extensive intertidal sand and mud flats. The intertidal flats and saltmarshes provide feeding, roosting and over wintering sites for large population of waterbirds, waders and ducks.

Features of European interest

2.38 The site qualifies under Article 4.1 and 4.2 of the Directive (79/109/EEC) by supporting populations of European importance.

2.39 Mersey Estuary SPA/Ramsar also qualifies for supporting Annex I listed species that include:

- Golden plover *Pluvialis apricaria* 3,070 individuals representing at least 1.2% of the wintering population in Great Britain;
- Redhsank *Tringa totanus* 3,516 individuals representing at least 2.0% of the Eastern Atlantic (wintering population – on passage) and 4,689 individuals representing at least 3.1% of the wintering Eastern Atlantic (wintering population – over winter);
- Ringed plover *Charadrius hiaticula* 1,453 individuals representing at least 2.9% of the Europe/Northern Africa (wintering population);
- Dunlin *Calidris alpina alpine* 44,300 individuals representing at least 3.2% of the wintering Northern Siberia/Europe/Western Africa population;
- Pintail *Anas acuta* 2,744 individuals representing at least 4.6% of the wintering Northwestern Europe population;
- Shelduck *Tadorna tadorna*, 5,039 individuals representing at least 1.7% of the wintering Northwestern Europe population; and
- Teal *Anas crecca*, 11,667 individuals representing at least 2.9% of the wintering Northwestern Europe population.

Conservation objectives[28]

2.40 '*Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;*

[27] http://www.merseygateway.co.uk/mersey-gateway-environmental-trust/ [Accessed: 19/02/2018]
[28] file:///C:/Users/hannah.corrigan/Downloads/UK9005131-Mersey-Estuary-SPA-V4.pdf [Accessed: 15/11/2018]

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.*'

Historic trends and current pressures[29]

2.41 There are several pressures that currently faced by the European Site of particular concern is the current changes and declines in the number and distribution of species recorded at the site when compared to other SPAs and regional trends. Additional threats include invasive species, these include Canada geese *Branta canadensis* and Chinese mitten crab *Eriocheir sinensis*.

2.42 There are also threats to the site due to public access and disturbance issues. In particular, uses of public footpaths adjacent to the north shore of the site can cause disturbance to birds roosting and feeding.

Key environmental conditions

2.43 The key environmental conditions that support the features of European interest have been defined as:

- Investigate, monitor and research bird declines;
- Investigate management options for Canada geese;
- Monitor the estuary for evidence of mitten crab and investigate its potential impacts in the site's features; and
- Minimise disturbance by recreational users via signage, awareness raising and education.

Midland Meres and Mosses – Phase 1 & 2 Ramsar

Introduction

2.44 The meres and mosses are located towards the north-west Midlands of England and consist of open water bodies, reed swamps, fen, carr and damp pasture. Due to peat accumulation nutrient poor peat bogs have formed giving way to meres and in some chases floating quaking bog or schwingmoor. Due to the range of habitats supported on site there is a rich diversity of flora and fauna.

Feature of European interest

2.45 The Midland Meres and Mosses SAC qualities for its Annex I habitats. This includes:

- Peatlands (including peat bogs, swamps, fens); and
- Freshwater marshes.

Conservation objectives

2.46 At the time of writing, the management plan for the Midland Meres and Mosses is under preparation. As such the conservation objectives are not defined as of yet. However, there are themes that are currently under research. These include:

- Catchment management planning;
- Peatland restoration and monitoring;
- Fen rehabilitation;
- Limnology and hydrology;
- Water chemistry and trophic status;
- Peat paleo-ecology; and
- Impacts of fish.
- Historic trends and current pressures

[29] http://publications.naturalengland.org.uk/publication/6273450410770432 [Accessed: 15/11/2018]

2.47 There are several current pressures that are faced by the Midland Meres and Mosses that are of concern these include water pollution, air pollution, inappropriate scrub control, game management, forestry and woodland and habitat fragmentation.

Key environmental conditions

2.48 The key environmental conditions that support the features of European interest have been defined as:

- Implement the Dissuse Water Pollution plans for Wynunbury Moss and Abbots Moss; and
- Investigate amending the boundary of Clarepool Moss and Wybunbury Moss SSSI to ensure adequate hydrological protection for the SAC.

3. Likely significant effects

3.1 There are several reports describing the required housing and employment supply within the Borough of Warrington, which include:

-
- ;
- Local Housing Needs Assessment (LHNA) 2019;
- Regulation 18 Submitted Sites; and
- ELA Site List EDNA 2019.

3.2 In total, these documents have identified the overall minimum requirement of 18,900 new homes (equating to 945 per year) to be delivered between 2017 and 2037. In addition, a total of 362ha of net employment space is to be also to be delivered during the Local Plan period.

3.3 Warrington Borough Council have aimed to group residential, employment and retail developments within existing neighbourhoods, additional neighbourhoods and strategic neighbourhood centres and hubs. However, the total of 18,900 new homes within Warrington cannot be solely allocated within the already urban areas of Warrington. This has resulted in the requirement for additional land that is to be created via Green Belt release.

3.4 This section represents an initial assessment of each policy for Warrington's Draft Local Plan (The Proposed Submission Version Local Plan). Whilst undertaking screening for Warrington's Draft Local Plan policy's it was clear that no residential, employment and retail development could be screened out as posing no likely significant effects in the absence of mitigation, if only due to the potential for air quality impacts on the Manchester Mosses SAC. Orange shading indicates that a pathway of impact potentially exists, and further analysis is therefore required in appropriate assessment. Policies that do not allocate sites for development were not considered to pose a likely significant effect to European Sites. Green shading indicates that no impact pathway was identified during the screening exercise.

Zones for impact pathways

Air quality

3.5 For air quality issues, all development proposals within the Warrington Draft Local Plan and which could result in a change in annual average daily traffic (AADT) on roads within 200m of a sensitive European site were screened in. Using this criterion all housing and employment allocations within Warrington were screened in for appropriate assessment with regard to the following designated sites: Manchester Mosses SAC (notably Holcroft Moss which is adjacent to the M62) and (for completeness), Rixton Clay Pits SAC. This is because roads that are likely to be major journey to work routes for residents of Warrington lie within 200m of both these European sites. A discussion regarding Rostherne Mere Ramsar site and Mersey Estuary SPA/Ramsar site was also included for completeness. Other European sites (Midland Meres & Mosses Phase 1 and Phase 2 Ramsar sites) are considered either too remote from the borough and/or more than 200m from significant journey to work routes for residents of Warrington.

Water quality

3.6 For changes in water quality due to surface water runoff, a precautionary zone of 1km was used for all development allocations and European Sites. This essentially means that impacts on Rixton Clay Pits SAC and Manchester Mosses SAC were screened in for some new housing and employment sites.

Recreational pressure

3.7 For recreational pressure, a buffer zone of 5km for sensitive inland terrestrial European sites and 10km for sensitive coastal sites were used to screen in policies or site allocations. These distances were derived from examination of a range of visitor surveys and studies that have been undertaken of European sites across England where these two distances recur as typical for the core catchments for inland terrestrial and coastal estuarine sites respectively.

Urbanization and great crest newts

3.8 In general, evidence regarding great crested newts suggests a typical travel distance of between 250m – 500m between breeding ponds and overwintering and foraging habitat for this species. Therefore, all net

new development located within 500m of the Rixton Clay Pits SAC could result in likely significant effects to the SAC. In contrast, housing and employment allocations that lie outside of the 500m influence zone were considered to be sufficiently distant from the Rixton Clay Pits SAC not to impact newts.

Table 2: Screening analysis of Warrington Borough Council's Local Plan policies

Policy	Brief description	Screening outcome

Policy DEV1 – Housing Delivery	*Policy describes the amount, proportion and distribution of residential housing allocations located within the Borough.*
	Housing requirement
	• *2017-2037: minimum of 18, 900 net residential dwellings*
	Housing distribution
	• *13, 726 houses: main urban area;*
	• *4, 201 houses: Garden Suburb; and*
	• *1, 631 houses: South West Urban Extension*
	• *1, 085 houses: Outlying settlements*
	  ○ *Burtonwood –160 homes;*
	  ○ *Croft –75 homes;*
	  ○ *Culcheth –200 homes;*
	  ○ *Hollins Green –90 homes;*
	  ○ *Lymm –430 homes; and*
	  ○ *Winwick –130 homes.*
	Housing trajectory
	• *2017 - 2021 (first 5 years) – 847 homes per annum; and*
	• *2022 - 2037 (following 15 years) – 978 homes per annum.*
		Rixton Clay Pits SAC
		All residential, employment and retail development located within the Warrington Borough could lead to likely significant effects on the SAC. This may be through various impact pathways including changes leading to reduction air and water quality and increased urbanization and recreational pressures generated from increased development and human inhabitancy. As such, this policy is screened in for Rixton Clay Pits SAC.
		
		Manchester Mosses SAC
		All residential, employment and retail development located within the Warrington Borough and Wigan Borough could lead to likely significant effects to the SAC. This may be through various impact pathways including changes leading to reduction air and water quality and increased urbanization and recreational pressures generated from increased development and human inhabitancy. As such, this policy is screened in for Manchester Moses SAC.
		
		Rostherne Mere Ramsar
		Rostherne Mere Ramsar is located 3.3km south-east of Warrington's border. This distance is sufficiently close to result in likely significant effects to the site. Impact pathways of concern include air quality and recreational pressure. This policy is therefore screened in for Rostherne Mere Ramsar.
		
		Mersey Estuary SPA/ Ramsar
		All residential, employment and retail development sites are located within the western half of Warrington and are sufficiently close to the SPA/Ramsar. As such, there is the possibility that increased development within Warrington could lead to likely significant effects. This could be due to changes in air quality and increased recreational pressure. As such, this policy is screened in for Mersey Estuary SPA/ Ramsar.
		
		Midland Meres & Mosses – Phase 1 Ramsar
		Midland Meres & Mosses – Phase 1 Ramsar is located 4.1km south-east of Warrington's border. This distance is sufficiently close to result in likely significant effects to the site. Impact pathways of concern include recreational pressure. This policy is therefore screened in for Midland Meres & Mosses –

Policy	Brief description	Screening outcome
		Phase 1 Ramsar.
Policy DEV2 – Meeting Warrington's Housing Needs	***Affordable Housing*** *This policy sets out the Council desires to provide the required proportion of affordable housing within the Borough:* *'1. In residential development of 10 dwellings or more, or greater than 1,000sqm, affordable housing will be required to be provided on the following basis:* *a. 20% on sites within inner Warrington, inclusive of the Town Centre.* *b. 30% elsewhere in the Borough and on all greenfield sites irrespective of their location.* *2. Of the affordable housing provision, affordable home ownership should be provided to the equivalent of 10% of the total number of homes within the development.'* *Additional requirements:* • *applicants should provide affordable housing on site where the Council see fit; and* • *applicants are required to appropriately demonstrate vacant building(s) for redevelopment.* ***Housing Type and Tenure*** • *Residential development should provide a mix of different housing sizes and types and should be informed by the borough wide housing mix monitoring target.* ***Supported and Specialist Housing*** *'9. In residential development of 10 dwellings or more, the Council will require provision of housing targeted specifically at Warrington's aging population. As a minimum, 20% of homes across all tenures should be provided to Building Regulation Standard M4(2) 'Accessible and Adaptable dwellings'.* *Additional requirements:* • *5% of new homes to be wheelchair accessible; and* • *Extra Care housing in accessible locations where there is an identified need will be supported by the Council.* ***Self and Custom Build*** *'12. The Council will ensure sufficient supply of plots for self-build and custom-build housing to meet the identified need on the Council's register. Applications for self-build and custom housing development will be supported, subject to consideration against*	**No Likely significant effect** This policy describes the criteria of affordable housing required within the Borough of Warrington. This policy does not specifically allocate affordable housing to sites and is therefore not expected to pose a likely significant effect to European Sites located within Warrington either alone or in combination with other plans and projects. This policy is screened out from further analysis.

Policy	Brief description	Screening outcome
	the other relevant policies in the Plan.'	
Policy DEV3 – Gypsy & Traveller and Travelling Show People Provision	***Meeting Identified Need*** *'2. Provision will be made between 2017 and 2032 for a minimum of an additional:* *a. 15 permanent pitches for Gypsies and Travellers (of which a minimum of 5 will be required by 2022);* *b. 15 permanent plots for Travelling Showpeople (of which a minimum of 5 will be required by 2022); and* *c. 5-10 transit pitches for Gypsies and Travellers.* *3. To meet identified need the Council will require a site for a minimum of 8 permanent pitches to be included within the Garden Suburb allocation in accordance with Policy MD2.'* ***Proposals for new sites*** *Additional requirements within the policy describes that where is an identified need or a demand for the provision of transit and permanent pitches for Gypsy or Traveller use or plots for Travelling Showpeople, proposals will be favourably considered where they satisfy other relevant policies of the Plan and listed criteria.*	**Rixton Clay Pits SAC** The Rixton Clay Pits SAC is located within the Borough of Warrington. As such, there is the possibility that permanent plots/ pitches for Gypsy, Traveller and Travelling Show People could lead to likely significant effects to the SAC. Impacts pathways of concern include air and water quality and increased urbanization and recreational pressures. This policy is screened in for Rixton Clay Pits SAC. **Manchester Mosses SAC** Again, this SAC is located within the Borough of Warrington and there is the possibility that permanent plots/ pitches for Gypsy, Traveller and Travelling Show People could lead to likely significant effects to the SAC. Impacts pathways of concern include air and water quality and recreational pressures. This policy is screened in for Manchester Mosses SAC. **Rostherne Mere Ramsar** This Ramsar site is located 9km east of the only site allocation, for 8 permanent plots/ pitches for Gypsy, Traveller and Travelling Show People within the Garden Suburb. However, there are up to 40 remaining plots yet to be allocated. This Ramsar lies 3km from the Warrington Boundary and therefore raises issues with regards to air quality and recreational pressure that may lead to likely significant effects to the Ramsar site. **Mersey Estuary SPA/ Ramsar** The Mersey Estuary SPA/ Ramsar zone of influence may extend to the western half of the Warrington Borough. The allocation of permanent plots/ pitches for Gypsy, Traveller and Travelling Show People is located within eastern Warrington and therefore not within the likely significant effect parameters of the Mersey Estuary SPA/Ramsar. **Midland Meres & Mosses – Phase 1 Ramsar** This Ramsar site is located 9km east of the only site allocation, for 8 permanent plots/ pitches for Gypsy, Traveller and Travelling Show People within the Garden Suburb. However, there are up to 40 remaining plots yet to be allocated. This Ramsar lies 3km from the Warrington Boundary and therefore raises issues with regards to recreational pressure that may lead to likely significant effects to the Ramsar site.

Policy	Brief description	Screening outcome
Policy DEV4 - Economic Growth and Development	***Employment Land Requirement*** *'1. Over the 20 year Plan period from 2017 to 2037 provision will be made for a minimum of 362 hectares of land for B1, B2 & B8 uses to support both local and wider strategic employment needs.'* ***Employment Land Distribution*** *'2. The Town Centre will provide the main location for new B1a Office development* *3. The following Employment Areas will continue to be the primary locations for industrial,* *warehousing, distribution development and other B Class Uses:* *a. Omega* *b. Woolston Grange* *c. Appleton & Stretton Trading Estate* *d. Winwick Quay* *e. Birchwood Park* *f. Centre Park* *g. Lingley Mere* *h. Gemini Westbrook* *4. The following sites will be removed from the Green Belt and allocated as new Employment Areas in order to provide sufficient land to meet Warrington's Employment Land Requirement:* *a. Garden Suburb – 116 hectares* *b. Port Warrington – 74.36 hectares* *c. Waterfront Business Hub – 25.47 hectares'* ***Proposals within Defined Employment Areas*** *Additional requirements:*	**Rixton Clay Pits SAC** Again, since the Rixton Clay Pits SAC is located within Warrington there is the possibility that increased employment opportunities and development may lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality and increased urbanization. **Manchester Mosses SAC** Since the Manchester Mosses SAC is located within Warrington there is the possibility that increased employment opportunities and development may lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air quality. **Rostherne Mere Ramsar** Employment allocations within Warrington are located over 14km from Rostherne Mere Ramsar. This distance is substantial and growth in Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis. **Mersey Estuary SPA/ Ramsar** The Mersey Estuary SPA/ Ramsar is located within 10km of the Port Warrington and Waterfront Business Hub employment allocation within Warrington. As such, there is the possibility that increased employment allocations could lead to likely significant effects to the SPA/Ramsar. Impacts pathways of concern include air quality. **Midland Meres & Mosses – Phase 1 Ramsar** Employment allocations within Warrington are located over 14km from Midland Meres & Mosses – Phase 1 Ramsar. This distance is substantial and growth in Warrington will not lead to likely significant effects on the Midland Meres & Mosses – Phase 1 Ramsar alone or in combination with other plans and projects. This site is therefore screened out from further analysis.

Policy	Brief description	Screening outcome
	• *Employment Areas will be protected for employment use;* • *Redevelopment and changes of use proposals within existing Employment Areas will be supported by the Council; and* • *Alternative use of Employment Areas are subject to policy constrains.* ***Fiddlers Ferry Employment Area*** *'13. At Fiddlers Ferry Power Station, within the area defined on the Policies Map, the Council will support development which enhances the existing employment opportunities at the facility, as well as employment development that facilitates and supports the site's transition as it ceases to operate as a coal fired power station.'* ***Supporting the Local Economy*** *'18. The Council will seek to assist the continued viability and growth of the local economy by ensuring development proposals do not lead to the loss of viable, accessible sites and buildings used for industrial/commercial purposes or other employment generating uses in local communities including the countryside and its settlements.'*	
Policy DEV5 – Retail and Leisure Needs	***Hierarchy of Centres*** *'1. Provision for retailing within the Borough will be based on the need to safeguard and enhance the vitality and viability of the following hierarchy of centres:'* 1. *District Centres;* 2. *Neighbourhood Centres;* 3. *Garden Suburb (Proposed); and* 4. *Local Centres.* ***Neighbourhood Hubs*** *'3. Where new Neighbourhood Hubs cannot be accommodated in defined centres, they should be in sustainable locations where the development would support the accessible co-location of facilities and services.'* ***New Retail and Leisure Development*** • *Retail and Leisure uses will be directed towards the Town Centre, District, Neighbourhood and Local Centres;* • *Retail or leisure proposals outside of a defined centre will be required to demonstrate that no suitable sites are available within the centre or in edge of*	**Rixton Clay Pits SAC** Again, since the Rixton Clay Pits SAC is located within Warrington there is the possibility that increased retail development may lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality and increased urbanization. **Manchester Mosses SAC** Since the Manchester Mosses SAC is located within Warrington there is the possibility that increased retail development may lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air quality **Rostherne Mere Ramsar** Rostherne Mere Ramsar is located over 14km from the proposed Garden Suburb retail and leisure allocation. This distance is substantial and growth in Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.

Policy	Brief description	Screening outcome
	centre locations; and • *An impact test proportionate to the scale of the proposal will be required for retail, leisure and office proposals over 500 square metres gross.* ***Sustaining local shops and services*** *'8. The Council will seek to support the health and wellbeing of local communities'*	**Mersey Estuary SPA/ Ramsar** The Mersey Estuary SPA/ Ramsar is located within 10km of the Port Warrington and Waterfront main development areas within Warrington. As such, there is the possibility that increased employment allocations could lead to likely significant effects to the SPA/Ramsar. Impacts pathways of concern include air and water quality and increased development and recreational pressures. Mersey Estuary SPA/ Ramsar. This site is therefore screened out from further analysis. **Midland Meres & Mosses – Phase 1 Ramsar** Midland Meres & Mosses – Phase 1 Ramsar is located over 14km from the proposed Garden Suburb retail and leisure allocation. This distance is substantial and growth in Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy GB1 – Warrington's Green Belt	***General Principles*** *'1. The Council will maintain the general extent of the Borough's Green Belt, as defined on the Local Plan Policies Map, throughout the Plan Period and to at least 2047.* *2. The Council will plan positively to enhance the beneficial use of the Green Belt as part of* *Warrington's Green Infrastructure Network.'* ***Land removed from the Green Belt*** *'a. Warrington Waterfront* *b. Garden Suburb* *c. South West Urban Extension* *d. Land at Burtonwood* *e. Land at Croft* *f, Land at Culcheth* *g. Land at Hollins Green* *h. Land at Lymm* *i. Land at Winwick'*	**Rixton Clay Pits SAC** The Rixton Clay Pits SAC is located within the Borough of Warrington; much of the residential allocations surrounding the SAC are of Green Belt release. As such, the development of areas highlighted within this policy could lead to likely significant effects to the SAC. Impacts pathways of concern include air and water quality and increased urbanization and recreational pressures. This policy is screened in for Rixton Clay Pits SAC. **Manchester Mosses SAC** Again, this SAC is located within the Borough of Warrington; much of the residential allocations surrounding the SAC are of Green Belt release. As such, the development of areas highlighted within this policy could lead to likely significant effects to the SAC. Impacts pathways of concern include air and water quality and recreational pressures. This policy is screened in for Manchester Mosses SAC. **Rostherne Mere Ramsar** Development allocations within the south-west part of Warrington Borough are within the influence zone of the Ramsar. As such, there is the possibility that Green Belt release may lead to likely significant effects to the Ramsar site through air quality and recreational pressure. This policy is therefore screened in for Rostherne Mere Ramsar.

Policy	Brief description	Screening outcome
	Inset Settlements *'a. Burtonwood* *b. Croft* *c. Culcheth* *d. Glazebury* *e. Hollins Green* *f. Lymm* *g. Oughtrington* *h. Winwick'* ***Green Belt Settlements*** *Development proposals will be subject to Green Belt policies set out in national planning policy for the following settlements:* *'a. Broomedge* *b. Collins Green* *c. Cuerdley Cross* *d. Glazebrook* *e. Grappenhall Village* *f. Hatton* *g. Heatley/Heatley Heath* *h. Higher Walton* *i. Mee Brow/Fowley Common* *j. New Lane End* *k. Stretton* *l. Weaste Lane'* ***Development Proposals in the Green Belt*** *'10. In accordance with national planning policy, within the Green Belt, planning permission* *will not be granted for inappropriate development, except in 'very special circumstances'.* *11. Other forms of development defined in national planning policy to be an exception to inappropriate development within the Green Belt, will be supported, subject to meeting other relevant Local Plan policies and any relevant Supplementary Planning Documents.'*	**Mersey Estuary SPA/ Ramsar** The Mersey Estuary SPA/ Ramsar zone of influence may extend to the western half of the Warrington Borough. As such, there is the possibility that the allocation of residential development through Green Belt release could lead to likely significant effects to the integrity of the SAC. Impacts pathways of concern include air and water quality and increased development and recreational pressures. This policy is screened in for Mersey Estuary SPA/ Ramsar.

Policy	Brief description	Screening outcome
Policy TC1 – Town Centre and surrounding area	***Widening the role of the town centre*** *'1. The Council will support development in the Town Centre which strengthens its viability and vitality and promotes a greater diversity of uses.'* ***Key Development Sites in the Town Centre and surrounding areas*** *'2. The Council and its partners will support and promote comprehensive redevelopment and regeneration opportunities in accordance with the Town Centre Masterplan in the following areas:* *a. The Stadium Quarter;* *b. The Eastern Gateway;* *c. The Cultural Quarter;* *d. Bank Quay; and* *e. The Southern Gateway.'* ***Optimising the Town Centre's development potential*** *'4. Within the defined Town Centre boundary residential development should optimise the* *use of each site by building to a minimum density of 130dph.* *5. Within the wider City Centre Masterplan area, residential development should optimise* *the use of each site by building to a minimum density of 50dph.'* ***Improving the Town Centre's Environment*** *'8. All development within the Town Centre and the Masterplanning areas should ensure heritage value and assets and enhance the environmental quality of the wider area.* *Retail Development within the Town Centre and Primary Shopping Area* *9. New retail development will be promoted within the Primary Shopping Area within Warrington Town Centre as defined on the Policies Map.* *10. Development in the Primary Shopping Area should provide an active ground floor frontage to maintain the character and enhance the vitality of the town centre's main shopping streets.'*	**Rixton Clay Pits SAC** The Rixton Clay Pits SAC is located within the Borough of Warrington therefore increased development within the town centre could lead to likely significant effects to the SAC due to air quality issues. This policy is screened in for Rixton Clay Pits SAC. **Manchester Mosses SAC** Again, this SAC is located within the Borough of Warrington therefore increased development within the town centre could lead to likely significant effects to the SAC due to air quality issues. This policy is screened in for Manchester Mosses SAC. **Rostherne Mere Ramsar** Rostherne Mere Ramsar is located over 10km from the town centre. This distance is substantial and increased development with Warrington is not expected to lead to likely significant effect either alone or in combination with other plans and projects. This site is therefore screened out from further analysis. **Mersey Estuary SPA/ Ramsar** The Mersey Estuary SPA/ Ramsar zone of influence may extend to the western parts of the Warrington Borough. As such, there is the possibility that the allocation of development within the town centre could lead to likely significant effects to the SAC. Impacts pathways of concern include air and water quality issues. This policy is screened in for Mersey Estuary SPA/ Ramsar. **Midland Meres & Mosses – Phase 1 Ramsar** Midland Meres & Mosses – Phase 1 Ramsar is located over 10km from the town centre. This distance is substantial and increased development with Warrington is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy INF1 – Sustainable Travel and Transport	*To deliver the Council objectives of improving the safety and efficiency of the transport network, tackling congestion and improving air quality, promoting sustainable transport options, reducing the need to travel by private car and encouraging healthy lifestyle.* *The council will support:* • *Developments located in sustainable and accessible locations;*	**No likely significant effect** This policy is positive with the aim of encouraging the development of sustainable travel options for the general public. Since this policy is positive, intended to combat poor air quality this policy not considered to pose as a likely significant effect to European sites located within and around the boundaries of Warrington Borough either alone or in combination with other plans and

Policy	Brief description	Screening outcome
	• *Developments that provide infrastructure for the charging of plug-in and other ultra-low emission vehicles;* • *Improved Walking and Cycling Facilities;* • *Improved Public Transport; and* • *Developers will be encouraged to transport minerals and waste via the most sustainable transport mode.*	projects.
Policy INF2 - Transport Safeguarding	***General Safeguarding Principles*** *1. The Council will support priorities and improvements set out in the Local Transport Plan and other delivery documents by ensuring development will not prejudice the implementation of proposed transport schemes and projects that require land beyond the limits of the public highway.* ***Safeguarded Land and Schemes*** *2. The Council will safeguard land for the following schemes, as shown on the Policies Map:* *a. Bridgefoot Link (formerly known as Bridgefoot Bypass), providing improved access between development sites to the north end of Centre Park, Warrington Bank Quay station and the wider town centre;* *b. A new or replacement high-level crossing of the Manchester Ship Canal between Ackers Road, Stockton Heath and Station Road, Latchford;* *c. Warrington East Multi-Modal Corridor improvement (part of the former safeguarding known as Long Lane Diversion), connecting Birchwood to Central Warrington via Birchwood Way, to allow future highway and public transport improvements to be delivered to support Warrington's growth; and* *d. Warrington Western link.*	**Rixton Clay Pits SAC** The Rixton Clay Pits SAC is located over 200m from the proposed highway schemes. As a result, this distance is considered sufficient not to lead to likely significant effects to the SAC alone or in combination with other plans or projects. This policy is screened out for the Rixton Clay Pits SAC. **Manchester Mosses SAC** The Manchester Mosses SAC is located over 200m from the proposed highway schemes. As a result, this distance is considered sufficient not to lead to likely significant effects to the SAC alone or in combination with other plans and projects. This policy is screened out for the Rixton Clay Pits SAC. **Rostherne Mere Ramsar** Rostherne Mere Ramsar is located over 10km from proposed schemes. This distance is substantial and increased development with Warrington is not expected to lead to likely significant effects on the Rostherne Mere Ramsar either alone or in combination with other plans and projects. This site is therefore screened out from further analysis. **Mersey Estuary SPA/ Ramsar** The Mersey Estuary SPA/ Ramsar is located over 200m from the proposed highway schemes. As a result, this distance is considered sufficient not to lead to likely significant effects to the SPA/Ramsar either alone or in combination with other plans and projects. This policy is screened out for the Mersey Estuary SPA/ Ramsar. **Midland Meres & Mosses – Phase 1 Ramsar** Midland Meres & Mosses – Phase 1 Ramsar is located over 10km from proposed schemes. This distance is substantial and increased urbanisation with Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy INF3 –	*All development proposals must demonstrate that engagement has taken place with*	**No likely significant effect**

Policy	Brief description	Screening outcome
Utilities and Telecommunications	*the required Statutory Undertakers and Infrastructure providers, and provide a strategy for how they will connect to public utilities infrastructure and or deliver the required infrastructure to support development.*	This policy ensures that all new development with Warrington accommodate for water, sewage and surface water drainage, gas, electricity and telecommunications. This policy does not allocated land for these developments but rather highlights the requirements for such supporting infrastructure. As such, this policy is not expected to pose a likely significant effect on European sites located within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.
Policy INF4 - Community Facilities	***General Principles*** *1. The Council and its partners will seek to promote health and wellbeing and reduce health inequalities within the Borough by supporting the development of new, or the co-location and co-ordination of existing education, health, social, cultural and community facilities. Where possible such facilities should be located in defined centres or neighbourhood hubs.* ***New Hospital for Warrington*** *3. The Council recognises the need for and supports the NHS Hospital Trust in the development of a new hospital for Warrington, either through redevelopment of the existing hospital site or on a new site.* *4. If a new site is the NHS Hospital Trust's preferred option, the Council will seek to allocate a site for a new hospital in a future review of the Local Plan. The new site must be in a location that provides ease of access for residents from across the Borough and be well served by public transport.*	**No likely significant effect** This policy ensures the safeguarding of community facilities within the Borough. In addition, Warrington addresses the requirements for additional hospital space within the Borough. The hospital space is not currently allocated and is expected to emerge during the Local Plan Review. Therefore, at the time of writing this policy is not expected to pose a likely significant effect to European sites located within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.
Policy INF5 - Delivering Infrastructure	*The Council require that the following infrastructure types are tailored to each development accordingly:* • *Affordable housing;* • *Public realm improvements and creation, including public art;* • *Improvements to Heritage Assets;* • *Flood defence and alleviation schemes, including SuDS;* • *Biodiversity enhancements;* • *Open space, including green infrastructure and allotments;* • *Transport improvements, including walking and cycling facilities;* • *Education provision;* • *Utilities;* • *Waste management;* • *Health infrastructure; and* • *Sport, leisure, recreational, cultural and other social and community facilities.*	**No likely significant effects** This policy identifies the need to provide social, environmental and economic infrastructure to support the development and growth set out in the Local Plan. This policy does not allocate areas/land for development and is therefore not expected to pose a likely significant effect to European sites located within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.

Policy	Brief description	Screening outcome
Policy DC1 - Warrington's Places	***Inner Warrington*** *The Council require development proposals to improve overall environment of the area, access to service and infrastructure and to provide affordable housing and new employment opportunities of high quality design and not be detrimental to air quality and wider public health.* ***Suburban Warrington*** *The Council seek to protect residential amenity and ensure new development is in keeping with its established surroundings.* ***Countryside and Settlements*** *Describes protected settlements from major development, appropriate and sustainable development and the protection of Green Belt settlements.* ***Warrington's Visitor Attractions*** *10. The Council and its partners will continue to promote the Town Centre as a leisure and cultural destination and will ensure a range of uses are provided which cater for retail needs, the leisure (including night-time) economy, town centre living, visitor accommodation, commerce and enterprise, higher and further education and sporting events/facilities.* *11. The Council and its partners will look to preserve and enhance the unique characteristics of Victoria Park. Development will be supported where the Council deem appropriate.* *14. The development of Walton Hall Estate will be supported where the Council deem appropriate.* *17. The Council will continue to support the operation of Gulliver's World as a successful regional attraction.* ***Neighbourhood Plans*** *19. The Council will encourage the preparation of Neighbourhood Plans to set Local Policies and provide greater detail in relation to development priorities specific to particular areas and local communities.*	**No likely significant effects** This policy safeguards important areas with Warrington. Many of these areas are safeguarded from development that would diminish these areas. As such, this policy is not expected to pose a likely significant effect to European sites within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.
Policy DC2 - Historic Environment	***General Principles*** *1. The Council will, through planning decisions and in fulfilling its wider functions, proactively manage and work with developers, the local community and others to support proposals which conserve or, where appropriate, enhance the historic environment of Warrington.* *Areas the Council are in favour of safeguarding include:*	**No likely significant effect** This is a positive policy safeguarding historical, conservation and landscapes that are by default of environmental importance. As such, this policy is not expected to pose a likely significant effect to European sites within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.

Policy	Brief description	Screening outcome
	• *Areas of Roman activity;* • *Listed building and grounds;* • *The Borough's industrial heritage;* • *Places of worship;* • *Conservation areas; and* • *Cultural assets (including parklands, woodlands, landscapes, canals and riverside, museums, libraries, art galleries, public art, food and drink, customs and traditions).*	
Policy DC3 – Green Infrastructure Network	*The Strategic Green Infrastructure Network* *1. The Council will work with partners to develop and adopt a strategic approach to the care and management of the borough's Green Infrastructure. A key focus of these efforts will be on reinforcing, and maximising the environmental and socio-economic benefits from, the following strategic green links which connect the borough to the wider sub-region:* *a. The Mersey Valley;* *b. Sankey Valley Park and St. Helens Canal;* *c. The Bridgewater Canal;* *d. The River Bollin;* *e. The Transpennine Trail;* *f. The Circular Parklands; and* *g. The Great Manchester Wetlands Nature Improvement Area.* *2. The Council is committed to supporting wider programmes and initiatives which seek to connect the borough's Strategic Green Infrastructure Network with employment areas, residential communities, and green infrastructure assets both within and outside of the borough, including the Manchester Mosses/Great Manchester Wetlands NIA, Bold Forest Park, the Northern Forest, Walton Hall Estate and two new significant country parks in Warrington Waterfront and the Garden Suburb.* *3. The Council will work with partners to strengthen and expand the network of ecological sites, corridors and stepping stone habitats to secure a net gain in biodiversity and to expand tree cover in appropriate locations across the Borough to improve landscape character, water and air quality; help mitigate the impacts of climate change and to contribute to the development of the Northern Forest.* ***Development Proposals affecting Green Infrastructure*** *4. The Council, in partnership with other agencies and stakeholders will seek to protect, enhance and extend the borough's multifunctional green infrastructure network in order to maintain and develop the wider public health, ecological and economic benefits it provides.*	**No likely significant effect** This is a positive policy safeguarding the green infrastructure within the Borough. As such, this policy is not expected to pose a likely significant effect on European sites within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.

Policy	Brief description	Screening outcome
Policy DC4 - Ecological Network	*1. The Council will work with partners to protect and where possible enhance sites of recognised nature and geological value. These efforts will be guided by the principles set out in the National Planning Policy Framework and those which underpin the strategic approach to the care and management of the borough's Green Infrastructure in its widest sense contained in Policy DC3.* *2. Sites and areas that make up the borough's ecological network and are recognised for their nature and geological value are shown on the Policies Map and include:* *a. European Sites of International Importance* *b. Sites of Special Scientific Interest* *c. Regionally Important Geological Sites* *d. Local Nature Reserves* *e. Local Wildlife Sites* *f. Wildlife Corridors/Areas*	**No likely significant effect** This is a positive policy safeguarding statutory and non-statutory wildlife sites within the Borough. As such, this policy is not expected to pose a likely significant effect to European sites within and around the boundaries of Warrington Borough alone or in combination with other plans and projects.
Policy DC5 - Open Space, Outdoor Sport and Recreation Provision	***Open Space Strategy*** *1. The Council will work with partners to ensure that a comprehensive range of sport and recreation facilities will be provided across Warrington to meet the needs of the existing and proposed opulation, including:* *a. Equipped play areas* *b. Informal play areas* *c. Parks & Gardens* *d. Natural/Semi-natural greenspaces* *e. Allotments* *f. Sports pitches and facilities* ***Open Space and Equipped Play Provision*** *4. All residential development proposals of 40 dwellings or more will be required to contribute to the provision of open space and equipped play provision, together with secure arrangements for its management and maintenance, where existing facilities have insufficient capacity to serve the increase in population arising from the development.*	**No likely significant effect** This policy encourages residential development to provide outside space for recreational and leisure activities. Moreover, this policy does not allocated specific sites for such development and is therefore not expected to pose a likely significant effect on European sites within and around the boundaries of Warrington Borough alone or in combination with other plans and projects.
Policy DC6 - Quality of Place	*Good design should be at the core of all development proposals (i.e. respect existing local character, use a palette of high quality materials, incorporate and promote sustainable methods of transport, Reduce energy and water use through appropriate design and minimise the risk of crime through site layout).*	**No likely significant effect** This policy is not related to the specific allocation of development within Warrington rather the aesthetic appeal of development. In addition, positive criteria are set out within the policy such as the use of renewables, public transport and environmental design. As such, this policy is not expected to pose a likely significant effect to European sites within and around the boundaries of Warrington Borough either alone or in combination with other plans and

Policy	Brief description	Screening outcome
		projects.
Policy ENV1 - Waste Management	***General Principles*** *1. The Council will promote sustainable waste management in accordance with the Waste Hierarchy. In working towards the prevention of waste, Warrington will seek to achieve a reduction in the mount of waste produced in the borough and treat waste at as high a level of the waste hierarchy as practicable by providing appropriate and sustainable sites and/or areas for the management of waste*	**No likely significant effect** This policy is not related to the specific allocation of waste development within Warrington rather the planning criteria for such planning proposals. These requirements are positive with the overall objective to reduce waste within the Borough. As such, this policy is not expected to pose a likely significant effect to European sites within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.
Policy ENV2 - Flood Risk and Water Management	***General Principles*** *1. Development should be focused towards areas at the lowest risk of flooding from all sources.* *2. Sustainable water management measures must be integrated into developments to reduce flood risk across the Borough and to avoid adverse impacts on water quality and quantity.* *3. New development should not result in increased flood risk from any source, or cause other drainage problems, either on the development site or elsewhere.* *4. No development should take place within 8m of the top of the bank of a watercourse either culverted or open, or within 8 metres of a raised flood defence, such as a flood wall or a flood embankment, unless this approach is supported by the Environment Agency and Warrington Borough Council as the Lead Local Flood Authority.*	**No likely significant effect** This policy ensures that sustainable water management measures must be integrated into all development proposals. These requirements ensure that appropriate drainage systems are in places preventing a reduction of water quality and associate issues. As such, this policy is not expected to pose a likely significant effect to European sites within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.
Policy ENV3 - Safeguarding of Minerals Resources	***Safeguarding Mineral Resources*** *2. Sand, gravel and shallow coal resources and sandstone and brickclay workings within the Minerals Safeguarding Areas will be protected from permanent sterilisation by other development.* *In addition:* • *Non-mineral development permissions may be granted by the council is the mineral is not of economic or viable, other froms of development overrides the need for mineral resources or that the mineral can be extracted satisfactorily prior to the non-minerals development taking Place.* • *Planning applications for development within 250m of safeguarded areas will need to demonstrate that impacts that may legitimately arise from the activities taking place in safeguarded areas would not be experienced to unacceptable levels.* ***Safeguarding Minerals Infrastructure*** *5. Planning permission will only be granted for development that is incompatible with safeguarded minerals transportation, handling or processing facilities.*	**No likely significant effect** This policy does not allocate land for minerals development rather sets out criteria for safeguarding of existing use and requirements of planning applications. Many are subject to significant policy constraints and are not expected to pose a likely significant effect on European sites within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.

Policy	Brief description	Screening outcome
Policy ENV4 – Primary Extraction of Minerals	***Aggregate Extraction within Mineral Safeguarding Areas*** *1. Applications for the extraction and/or processing of sand, gravel or sandstone/gritstone:* *a. The mineral is required to meet the required landbank of: i) at least 7 years for sand and gravel; or ii) at least 10 years for crushed rock; and* *b. the site contains adequate resources of the mineral, in terms of quality and quantity for extraction to take place; and* *c. The proposal accords with all other policies of the Local Plan in relation to the protection of the environment, public amenity and sustainable transport or demonstrates that other material considerations outweigh any policy conflict.* ***Aggregate Extraction outside Mineral Safeguarding Areas*** *2. Applications outside Mineral Safeguarding Areas:* *a. The developer can provide evidence to support the need for departure from the Mineral Safeguarding Areas identified: and* *b. the proposal meets the requirements of (a) to (c) above for extraction within Mineral Safeguarding Area* ***Non-Aggregates*** *Non-aggregate minerals will be permitted provided:* *a. The proposal accords with all other policies of the Local Plan in relation to the protection of the environment, public amenity and sustainable transport or demonstrates that other material considerations outweigh any policy conflict; and* *b. there are adequate resources of the mineral on site in terms of quality and quantity for extraction to take place.* ***Windfall Sites*** *4. Favourable consideration may also be given to proposals that can be demonstrated to be more sustainable than any available alternative.*	**Rixton Clay Pits SAC** The Rixton Clay Pits SAC is located within the Borough of Warrington. As such, there is the possibility that the allocation of aggregate extraction could lead to likely significant effects to the SAC. Impacts pathways of concern include air and water quality. This policy is screened in for Rixton Clay Pits SAC. **Manchester Mosses SAC** Again, this SAC is located within the Borough of Warrington and there is the possibility that the allocation aggregate extraction could lead to likely significant effects to the SAC. Impacts pathways of concern include air and water quality. This policy is screened in for Manchester Mosses SAC. **Rostherne Mere Ramsar** This Ramsar is located only 3km from the Warrington Boundary therefore likely significant effects with regards to air quality due to aggregate extraction within Warrington could impact the site. This policy is therefore screened in. **Mersey Estuary SPA/ Ramsar** There is no impact pathway connecting aggregate extraction within Warrington with this European site. Therefore likely significant effect effects are not expected to the SPA/ Ramsar either alone or in combination with other plans and projects. **Midland Meres & Mosses – Phase 1 Ramsar** Midland Meres & Mosses – Phase 1 Ramsar is located outside the Warrington Boundary and is not expected to be impacted by issues with regards to aggregate extraction within Warrington either alone or in combination with other projects and plans. This policy is therefore screened out from further assessment.
Policy ENV5 – Energy Minerals	*Developments for the Exploration and appraisal of hydrocarbons, Commercial exploitation of hydrocarbons, coal and peat will be supported subject to the following criteria:* • *The site and equipment is sited at a location where it can be demonstrated that it will accord with all other policies of the Local Plan in relation to the protection of the environment, public amenity and sustainable transport or*	**Rixton Clay Pits SAC** The Rixton Clay Pits SAC is located within the Borough of Warrington. As such, there is the possibility that the allocation of developments for the exploration and appraisal of hydrocarbons could lead to likely significant effects to the SAC. Impacts pathways of concern include air and water quality. This policy is screened in for Rixton Clay Pits SAC.

Policy	Brief description	Screening outcome
	demonstrate that other material considerations outweigh any policy conflict. • *A full appraisal programme for the oil or gas field has been completed.* • *The proposed location is the most suitable, considering environmental, geological and technical factors.* • *For underground coal mining, potential impacts to be considered and mitigated for will include subsidence and the disposal of colliery spoil. Provision of sustainable transport will be encouraged, as will Coal Mine Methane capture and utilisation.* • *The borough's peat resources will be protected. In line with national policy planning permission for new or extended sites for peat extraction will not be approved.*	**Manchester Mosses SAC** Again, this SAC is located within the Borough of Warrington and there is the possibility that the allocation developments for the exploration and appraisal of hydrocarbons could lead to likely significant effects to the SAC. Impacts pathways of concern include air and water quality. This policy is screened in for Manchester Mosses SAC.
		Rostherne Mere Ramsar This Ramsar is located 3km from the Warrington Boundary; therefore likely significant effects with regards to air quality due to the allocation of developments for the exploration and appraisal of hydrocarbons within Warrington could impact the site. This policy is therefore screened in.
		Mersey Estuary SPA/ Ramsar There is no impact pathway connecting exploration of hydrocarbons within Warrington with this European site. Therefore likely significant effect effects are not expected to the SPA/ Ramsar either alone or in combination with other plans and projects.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located outside the Warrington Boundary and is not expected to be impacted by issues with regards to exploration of hydrocarbons within Warrington either alone or in combination with other projects and plans. This policy is therefore screened out from further assessment.
Policy ENV6 – Restoration and Aftercare of Mineral and Waste Sites	*1. Applications for mineral extraction and/or landfill/landraising of waste sites will be permitted where they are accompanied by appropriate proposals for site restoration and aftercare.* *2. In defining the future land use for the site, restoration should be geared towards improvement of final land use*	**No likely significant effect** This policy does not allocate land for mineral and waste sites or restoration areas. Rather this policy ensures that post mineral and waste sites activities a restoration scheme of environmental value should be produced when undertaken planning applications. Therefore, this policy is positive and not expected to pose a likely significant effect to European sites within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.

Policy	Brief description	Screening outcome
Policy ENV7 - Renewable and Low Carbon Energy Development	***Renewable/Low Carbon Energy Infrastructure*** *1. Proposals for development that would produce and/or distribute low carbon or renewable energy will be permitted if they satisfy the requirements of other relevant Plan policies and would not result in unacceptable harm to the local environment. The Council will have regard to any environmental, social and/or economic benefits that the proposals would provide, and their number, scale, siting, design and any cumulative impact in conjunction with other proposals.* ***Renewable/Low Carbon Energy in New Development*** *3. Proposals for new development for housing, employment or other uses will be required to minimise carbon emissions.*	**Rixton Clay Pits SAC** The Rixton Clay Pits SAC is located within the Borough of Warrington. As such, there is the possibility that renewable and low carbon energy development could lead to likely significant effects to the SAC. Impacts pathways of concern include water quality. This policy is screened in for Rixton Clay Pits SAC.
		Manchester Mosses SAC Again, this SAC is located within the Borough of Warrington and there is the possibility that renewable and low carbon energy development could lead to likely significant effects to the SAC. Impacts pathways of concern include water quality. This policy is screened in for Manchester Mosses SAC.
		Rostherne Mere Ramsar This Ramsar is located 3km from the Warrington Boundary; therefore likely significant effects with regards to water quality due to renewable and low carbon energy development within Warrington could impact the site. This policy is therefore screened in.
		Mersey Estuary SPA/ Ramsar There is no impact pathway connecting renewable or low carbon energy development within Warrington with this European site. Therefore likely significant effect effects are not expected to the SPA/ Ramsar either alone or in combination with other plans and projects.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located outside the Warrington Boundary and is not expected to be impacted by issues with regards to renewable and low carbon energy within Warrington either alone or in combination with other projects and plans. This policy is therefore screened out from further assessment.
Policy ENV8 - Environmental and Amenity Protection	***General Principles*** *1. The Council requires that all development is located and designed so as not to result in a harmful or cumulative impact on the natural and built environment, and/or general levels of amenity.* *2. Development proposals, as appropriate to their nature and scale, should demonstrate that environmental risks have been evaluated and appropriate measures have been taken to minimise the risks of adverse impacts to air, land and water quality, whilst assessing vibration, light and noise pollution both during their construction and in*	**No likely significant effect** This is a positive policy that provides criteria for the protection of air quality, land quality, water quality noise pollution and general amenity protection. As such, this policy is positive and not expected to pose a likely significant effect to European sites within and around the boundaries of Warrington Borough either alone or in combination with other plans and projects.

Policy	Brief description	Screening outcome
	their operation.	
Policy MD1 - Waterfront (including Port Warrington)	***MD1.1 Key Land Use and Infrastructure Requirements*** *1. Warrington Waterfront will be allocated as a new urban quarter to deliver around 2, 000 new homes and a major employment area, incorporating an enlarged multi-modal port facility and a business hub.*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that increased development at Warrington Waterfront may lead to likely significant effects to SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality and increased recreation.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that increased development at Warrington Waterfront may lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air quality and increased recreation.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 14km from the proposed Warrington Waterfront allocation. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects on the Rostherne Mere Ramsar either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located 7km west from the Warrington Waterfront development area. As such, there is the possibility that increased employment and housing allocations could lead to likely significant effects to the integrity of the SPA/Ramsar. Impacts pathways of concern include recreational pressures. This site is therefore screened in for further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 14km from the proposed Warrington Waterfront allocation. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects on the Midland Meres & Mosses – Phase 1 Ramsar either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy MD2 - Garden Suburb	***MD2.1 Key Land Use and Infrastructure Requirements*** *1. Land to the south east of Warrington, bounded by the M56 to the south and predominantly the A50 to the east, will be removed from the Green Belt and allocated as the Garden Suburb sustainable urban extension.* *2. The Garden Suburb will deliver approximately 7,400 homes and 116 hectares of*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that increased development at the Garden Suburb may lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality and increased recreation.

Policy	Brief description	Screening outcome
	employment land. Around 5,300 homes and all of the employment land will be delivered within the Plan Period. *3. The Garden Suburb will comprise three Garden Villages, a central Neighbourhood Centre and an extensive green infrastructure network of open spaces and parkland, as illustrated in the Development Concept diagram.* *4. The existing inset settlement of Appleton Thorn will retain its distinct identify and be defined by areas of countryside separating the settlement from new development. Any development within the Appleton Thorn settlement boundary must conform with the policies of the Appleton Parish Thorn Ward Neighbourhood Development Plan.*	**Manchester Mosses SAC** Since the Manchester Mosses SAC is located within Warrington there is the possibility that increased development at the Garden Suburb may lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air quality and increased recreation.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 7km from the proposed Garden Suburb development area. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located 11km west from the Garden Suburb development area. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 9km from the proposed Garden Suburb development area. This distance is substantial and increased development with Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy MD3 - South West Urban Extension (SWUE)	***MD3.1 Key Land Use and Infrastructure Requirements*** *1. Land comprising approximately 112ha to the south west of Warrington will be removed from the Green Belt and allocated as a sustainable urban extension* *2. The allocation will deliver a new residential community of around 1,600 homes*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that increased development at SWUE may lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality and increased recreation.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that increased development at the SWUE may lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air quality and increased recreation.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 13km from the proposed SWUE

Policy	Brief description	Screening outcome
		development area. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located 8.4km west from the SWUE development area. This distance is sufficiently close to the proposed development site that likely significant effects could arise due to increased recreational pressures. This site is therefore screened in for further analysis
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 13km from the proposed SWUE development area. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy MD4 - Land at Peel Hall	***MD 4.1 Key Land Use and Infrastructure Requirements*** *1. Land comprising approximately 69 hectares to the north of the Borough will be allocated to deliver a new sustainable community. The allocation will deliver a new residential community of up to 1200 new homes.*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Land at Peel Hall could lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality and increased urbanization.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that the allocation of Land at Peel Hall could lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air quality and increased recreation.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 13km from the proposed allocation of Land at Peel Hall. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 10km west from land allocated at Peel Hall. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore

Policy	Brief description	Screening outcome
		screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 13km from the proposed allocation of Land at Peel Hall. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy OS1 – Burtonwood	*1. Land to the north of Burtonwood will be removed from the Green Belt and allocated for residential development for a minimum of 160 homes.*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Land at Burtonwood for residential development could lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that the allocation of Land at Burtonwood for residential development could lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air quality and recreation.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 18km from the proposed allocation of Land at Burtonwood. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 10km west from Land at Burtonwood. This distance is substantial and increased development within this part of Warrington is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 18km from the proposed allocation of Land at Burtonwood. This distance is substantial and increased development is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.

Policy	Brief description	Screening outcome
Policy OS2 – Croft	*1. Land to the north east of Croft will be removed from the Green Belt and allocated for residential development for a minimum of 75 homes.*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Land at Croft for residential development could lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality and recreational pressure.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that the allocation of Land at Croft for residential development could lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air and water quality and recreational pressures.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 12km from the proposed allocation of Land at Croft. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects either alone or in combination with other projects and plans. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 16km west from Land at Croft. This distance is substantial and increased development within this part of Warrington (generated by this policy) is not expected to lead to likely significant effects either alone or in combination with other projects and plans. This site is therefore screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 13km from the proposed allocation of Land at Croft. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects either alone or in combination with other projects and plans. This site is therefore screened out from further analysis.
Policy OS3 – Culcheth	*1. Land to the east of Culcheth will be removed from the Green Belt and allocated for residential development for a minimum of 200 homes.*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Land at Culcheth for residential development could lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality and increased

Policy	Brief description	Screening outcome
		urbanization and recreational pressures.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that the allocation of Land at Culcheth for residential development could lead to likely significant effects of the SAC. This policy is screened in for the SAC due to issues associated with air and water quality and recreational pressures.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 12km from the proposed allocation of Land at Culcheth. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 16km west from Land at Culcheth. This distance is substantial and increased development within this part of Warrington (generated by this policy) is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 13km from the proposed allocation of Land at Culcheth. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy OS4 – Hollins Green	*1. Land to the southwest of Hollins Green will be removed from the Green Belt and allocated for residential development for a minimum of 90 homes.*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Land at Hollins Green for residential development could lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air and water quality and increased urbanization and recreational pressures.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that the allocation of Land at Hollins Green for residential development could lead to likely significant effects to the SAC. This policy is

Policy	Brief description	Screening outcome
		screened in for the SAC due to issues associated with air and water quality and recreational pressures.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 7km from the proposed allocation of Land at Hollins Green. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects alone or in combination with other projects and plans. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 19km west from Land at Hollins Green. This distance is substantial and increased development within this part of Warrington (generated by this policy) is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 9km from the proposed allocation of Land at Hollins Green. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects either alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy OS5 – Lymm (Massey Brook Lane)	*1. Land to the west of Lymm will be removed from the Green Belt and allocated for residential development for a minimum of 60 homes.* *2. The development of the site should be in accordance with the emerging Lymm Neighbourhood Plan and consider the Lymm Heritage and Character Assessment (2018).*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Land at Massey Brook Lane, Lymm for residential development could lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality and increased urbanization and recreational pressures.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that the allocation of Land at Massey Brook Lane, Lymm for residential development could lead to likely significant effects to theSAC. This policy is screened in for the SAC due to issues associated with air quality and increased urbanization and recreational pressures.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 7km from the proposed allocation of Land at Massey Brook Lane, Lymm. This distance is substantial and increased

Policy	Brief description	Screening outcome
		development within this part of Warrington generated by this policy is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 16km west from Land at Massey Brook Lane, Lymm. This distance is substantial and increased development within this part of Warrington (generated by this policy) is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 8km from the proposed allocation of Land at Massey Brook Lane, Lymm. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy OS6 – Lymm (Pool Lane)	*1. Land to the west of Lymm (inset settlement) will be removed from the Green Belt and allocated for residential development for a minimum of 40 homes.* *2. The development of the site should be in accordance with the emerging Lymm Neighbourhood Plan and consider the Lymm Heritage and Character Assessment (2018).*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Land at Pool Lane, Lymm for residential development could lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air and water quality and increased urbanization and recreational pressures.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that the allocation of Land at Pool Lane, Lymm for residential development could lead to likely significant effectsThis policy is screened in for the SAC due to issues associated with air quality and increased urbanization and recreational pressures.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 7km from the proposed allocation of Land at Pool Lane, Lymm. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 16km west from Land at Pool

Policy	Brief description	Screening outcome
		Lane, Lymm. This distance is substantial and increased development within this part of Warrington (generated by this policy) is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 8km from the proposed allocation of Land at Pool Lane, Lymm. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy OS7 – Lymm (Rushgreen Road/Tanyard Farm)	*1. Land to the east of Lymm (inset settlement) will be removed from the Green Belt and allocated for residential development for a minimum of 200 homes and a new health facility.* *2. The development of the site should be in accordance with the emerging Lymm Neighbourhood Plan and consider the Lymm Heritage and Character Assessment (2018).*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Land at Rushgreen Road, Lymm for residential development could lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air and water quality and increased urbanization and recreational pressures.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that the allocation of Land at Rushgreen Road, Lymm for residential development could lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air quality and recreational pressures.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 5km from the proposed allocation of Land at Rushgreen Road, Lymm. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 18km west from Land at Rushgreen Road, Lymm. This distance is substantial and increased development within this part of Warrington (generated by this policy) is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar

Policy	Brief description	Screening outcome
		Midland Meres & Mosses – Phase 1 Ramsar is located over 6km from the proposed allocation of Land at Rushgreen Road, Lymm. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy OS8 – Lymm (Warrington Road)	*1. Land to the west of Lymm (inset settlement) will be removed from the Green Belt and allocated for residential development for a minimum of 130 homes.* *2. The development of the site should be in accordance with the emerging Lymm Neighbourhood Plan and take into account the Lymm Heritage and Character Assessment (2018).*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Land at Warrington Road, Lymm for residential development could lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air and water quality and increased urbanization and recreational pressures.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that the allocation of Land at Warrington Road, Lymm for residential development could lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air quality and increased urbanization and recreational pressures.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 5km from the proposed allocation of Land at Warrington Road, Lymm. This distance is considered substantial and increased urbanisation within Warrington generated by this policy is not expected to lead to likely significant effects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 18km west from Land at Warrington Road, Lymm. This distance is substantial and increased development within this part of Warrington (generated by this policy) is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 6km from the proposed allocation of Land at Warrington Road, Lymm. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out

Policy	Brief description	Screening outcome
		from further analysis.
Policy OS9 – Land to the north of Winwick	*1. Land to the north of Winwick will be removed from the Green Belt and allocated for development for a minimum of 130 homes.*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Land to the North of Winwick for residential development could lead to likely significant effects to the SAC. This policy is screened in for Rixton Clay Pits SAC due to issues associated with air quality and increased urbanization.
		Manchester Mosses SAC Since the Manchester Mosses SAC is located within Warrington there is the possibility that the allocation of Land to the north of Winwick for residential development could lead to likely significant effects to the SAC. This policy is screened in for the SAC due to issues associated with air quality.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 15km from the proposed allocation of Land to the north of Winwick. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 13km south-west from Land to the north of Winwick. This distance is substantial and increased development within this part of Warrington (generated by this policy) is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 16km from the proposed allocation of Land to the north of Winwick. This distance is substantial and increased development within this part of Warrington generated by this policy is not expected to lead to likely significant effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy M1 - Local Plan Monitoring and Review	***Monitoring Framework*** *1. The Council will prepare an Annual Monitoring Report setting out perfromance against Local Plan policies based on the indicators provided in Appendix 2.*	**No Likely Significant Effects** This policy simply describes the Council's annual review of the Local Plan and just described the process of reviewing and the monitoring of development allocations. As such, there are no likely significant effects expected from this policy alone or in combination with other plans and projects.

4. Appropriate Assessment

4.1 The screening exercise identified that there are several impact pathways that could pose as a likely significant effect to the integrity of the European Sites located within and around the Borough of Warrington. These are:

- Air quality (relating to Rixton Clay Pits SAC, Manchester Mosses SAC, Rostherne Mere Ramsar site and Mersey Estuary SPA and Ramsar site);
- Surface water quality (relating to Rixton Clay Pits SAC and Manchester Mosses SAC);
- Recreational pressure (relating to Rixton Clay Pits SAC, Manchester Mosses SAC, Mersey Estuary SPA/Ramsar site, Rostherne Mere Ramsar site and Midlands Meres & Mosses Ramsar site); and
- Urbanisation and development of functionally linked land for great crested newts at Rixton Clay Pits SAC.

4.2 Air quality impacts and recreational pressure in particular may be unlikely to arise from the Warrington Draft Local Plan alone but have potential to arise 'in combination' with other plans and projects. Each of these issues are subject to appropriate assessment below using peer reviewed literature where necessary (or bespoke modelling work with regard to air quality impacts on Manchester Mosses SAC and Rixton Clay Pits SAC) and the effects these have to the impact of each European Sites brought forward from the screening stage.

Air quality

4.3 Concentrations of pollutants in air and deposition of nitrogen can harm vegetation directly or affect plant health and productivity. Deposition of pollutants to the ground and vegetation can alter the characteristics of the soil, affecting the pH and nitrogen availability that can then affect plant health, productivity and species composition[30]. The air pollutant of most concern for sensitive vegetation in relation to road traffic emissions is oxides of nitrogen (NOx) concentrations[31]. NOx is composed of nitric oxide (NO) and its oxidation product nitrogen dioxide (NO_2). Concentrations of NO_2 are higher close to roads so vegetation in these areas is exposed to a larger source of nitrogen (N). As a general rule roadside effects of NOx and nitrogen deposition will have reduced to background concentrations/rates within 200m of the roadside. Potential ecological consequences in response to high levels or prolonged exposure to such emissions can include:

- Changes in species composition especially in nutrient poor ecosystems with a shift towards species associated with higher nitrogen availability (e.g. dominance of tall grasses);
- Reduction in species richness;
- Increases in plant production;
- Decrease or loss of sensitive lichens and bryophytes (where present); and
- Resulting increases in nitrate leaching.

4.4 Emissions of NOx and resulting deposition can have community level impacts to habitats and European Sites. Habitats that are particularly sensitive to elevated nitrogen levels include bog land which has a low critical load of 5 kgN/ha/yr. As has been previously described, these habitats are rare and air pollution in the form of nitrogen deposition is a well-known pressure faced by such habitats[32]. Supported communities within bogs are particularly sensitive to nitrogen deposition. Bryophytes (mosses and liverworts) lack a well-developed cuticle and therefore more easily absorb pollutants across their cell surface. Their abundance decreases when a certain threshold of nitrogen is exceeded. Bryophytes are incredibly

[30] Bobbink, R., Hicks, K., Galloway, J., Spranger, T., Alkemade, R., Ashmore, M., Bustamante, M., Cinderby, S., Davidson, E., Dentener, F. and Emmett, B., 2010. Global assessment of nitrogen deposition effects on terrestrial plant diversity: a synthesis. Ecological applications, 20(1), pp.30-59.
[31] Cape, J.N., Tang, Y.S., Van Dijk, N., Love, L., Sutton, M.A. and Palmer, S.C.F., 2004. Concentrations of ammonia and nitrogen dioxide at roadside verges, and their contribution to nitrogen deposition. Environmental Pollution, 132(3), pp.469-478.
[32] Limpens, J. and Berendse, F., 2003. Growth reduction of *Sphagnum magellanicum* subjected to high nitrogen deposition: the role of amino acid nitrogen concentration. Oecologia, 135(3), pp.339-345.

important organisms as they store large quantities of carbon and, to an extent, filter pollutants from the environment[33]. The protection of this habitat from nitrogen degradation is therefore incredibly important.

4.5 The routes that nitrogen deposition impacts habitats and vegetation described above are through toxicity and the movement of nitrogen through varying trophic levels. Another route of affect is through nitrogen acidification. A study undertaken by Maskell et al (2010)[34] observed that with increasing acid deposition from NOx there was a decrease in species richness within heathland. Acid deposition can have serious impacts to the health of soil structure and the microbial communities found here. These species carryout a natural decaying process known as nitrification (converting ammonium to nitrate) that generates acidity. However, when in combination with acid deposition from NOx pollution the soil pH may become too acidic for specialised plant communities to survive and therefore result in a net decrease in biodiversity[35]. Acidification tends to be more of an issue for acid substrates (which have poor buffering capacity) than neutral or calcareous substrates.

Rixton Clay Pits SAC

4.6 Acidification of waterbodies within the north-west of England is amongst the highest due to heavy rainfall that results in the direct transfer of air pollutants to waterbodies. Consultation of the Air Pollution Information System (APIS) website identifies that the SAC is theoretically vulnerable to acid and nitrogen deposition given the habitats present, but that the sensitivity depends very much on the sensitivity of the SAC newt population to relatively subtle changes in vegetation structure and (for nitrogen deposition) whether the waterbodies that support the newt population are phosphate-limited rather than nitrogen limited, such that phosphorus (which does not come from atmosphere) is the key pollutant in eutrophication.

4.7 Much of the Rixton Clay Pits SAC consists of standing water supporting a large population of great crested newts. Great crested newts are mostly found in hard water areas (calcium rich) of the three species of newts native to the UK the Great crested newt is least sensitive to acidification of water bodies. A study by Giffiths (1993)[36] observed that during larval development feeding behaviour was not impaired by acidic condition (pH 4-5). Miro (2017)[37] also observed newts naturally occurring within ponds at low pH scales ranging from 4.9 and 9.3 suggesting that Great crested newts are tolerant of acidic to alkaline conditions. Additionally, great crested newts found elsewhere in European can be seen thriving in naturally acidic conditions. For example, Dolmen (1980)[38] observed breeding populations of newts within acidic bog lakes encompassed by coniferous woodland.

4.8 With regard to nitrogen deposition, it is considered that the flooded clay pits in which the great crested newts breed are very likely to be phosphate-limited rather than nitrogen-limited as are most lowland freshwater bodies; this means that to control eutrophication it is more important to control phosphate inputs (which come from agriculture but not atmosphere) than nitrogen inputs. Moreover, great crested newts have very broad terrestrial habitat requirements and it is considered unlikely that the ability of the SAC to support newts would be affected by the relatively subtle effects (i.e. slight changes in species richness and percentage grass and shrub cover) that increased nitrogen deposition within 200m of the A57 may have on the terrestrial portions of the site.

4.9 Nonetheless, traffic and air quality modelling were undertaken for completeness. The traffic modelling suggests that AADT on the A57 past this SAC will only be slightly (347 AADT) greater with the Local Plan in place than it would be without the Local Plan. For context, Highways England takes the view (as expressed in the Design Manual for Roads and Bridges) that a change of less than 1,000 AADT is essentially negligible when the daily fluctuations in flows on most roads are taken into account. This is reflected in the results of the air quality modelling. Even at the closest point of the SAC to the A57 the

[33] Phoenix, G., Emmett, B., Britton, A., Caporn, S., Dise, N., Helliwell, R., Jones, L., Leake, J., Leith, I., Sheppard, L., Sowerby, A., Pilkington, M., Rowe, E., Ashmore, M. and Power, S. (2011). Impacts of atmospheric nitrogen deposition: responses of multiple plant and soil parameters across contrasting ecosystems in long-term field experiments. Global Change Biology, 18(4), pp.1197-1215.
[34] Maskell, L.C., Smart, S.M., Bullock, J.M., Thompson, K.E.N. and Stevens, C.J., (2010). Nitrogen deposition causes widespread loss of species richness in British habitats. Global Change Biology, 16(2), pp.671-679.
[35] Defra (2007) Acid Deposition Processes. Nobel House: London.
[36] Griffiths, R.A. 1993 The Effect of pH on Feeding-Behaviour in Newt Larvae (Triturus, Amphibia). Journal of Zoology 231 285-90
[37] Miró, A., O'Brien, D., Hall, J. and Jehle, R., 2017. Habitat requirements and conservation needs of peripheral populations: the case of the great crested newt (Triturus cristatus) in the Scottish Highlands. Hydrobiologia, 792(1), pp.169-181.
[38] Dolmen, D., 1980. Distribution and habitat of the smooth newt,Triturus vulgaris(L.) and the warty newt, Triturus cristatus (Laurenti), in Norway. In Coburn, J. (ed.), Proceedings ofthe European Herpetological Symposium, Oxford:127–139.

Local Plan is expected to result in a negligible increase in nitrogen deposition compared to a situation without the plan: a nitrogen 'dose' of 0.04 kgN/ha/yr. When the day-to-day fluctuations in deposition rate are taken into consideration this is effectively zero.

4.10 It is therefore considered that an adverse effect on the integrity of the SAC would not result from those policies that will lead to increased housing, minerals and employment development (and thus increased traffic on the A57). This is supported by examination of the Natural England Site Improvement Plan for the SAC which does not identify air quality as being a concern.

4.11 Dust deposition and subsequent coating of vegetation disrupting photosynthesis could be an effect of policies ENV4 and ENV5, which both promote minerals development, if the minerals development is located within 50m of the SAC[39]. However, both policies also confirm that development will only be supported if the site and equipment is sited at a location where it can be demonstrated that it will accord with all other policies of the Plan in relation to the protection of the environment, which will particularly include protecting residents, infrastructure and the environment from dust deposition.

Manchester Mosses SAC

4.12 Air quality impact pathways described within 4.4 are of particular relevance to the Manchester Mosses SAC as this site supports raised bogs and associated, vulnerable species and Holcroft Moss lies within 200m of the M62 which will be a key journey to work route for residents of Warrington. Development allocations of potential concern due to various impact pathways include:

Green Belt release

-
- Residential allocation at Hollins Green located 1.5km south of the SAC;
- Residential allocations at Lymm located 1.8km south of the SAC;
- Residential allocations at Culcheth located 2.3km north west of the Holcroft Moss and 1.2km west of Bedford Moss in Wigan;
- Residential allocations at Croft located 2.9km west of the SAC.
- The Peel Hall located 4.2km west of the SAC.

4.13 However, since the M62 is a strategic route all policies that promote new housing and employment in the borough will collectively result in an increase in vehicle movements on the M62 past the SAC, particularly in combination with development in other surrounding districts and boroughs.

4.14 Intense combustion of fossil fuels within the north-west has caused significant emissions of NOx into the atmosphere resulting in air pollution and changes in rainfall chemistry. The deposition of these pollutants has resulted in the acidification of soils and waters throughout the north-west.

[39] Distance taken from page 13 of Institute of Air Quality Management. 2014. Guidance on the Assessment of Dust from Demolition and Construction http://www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf

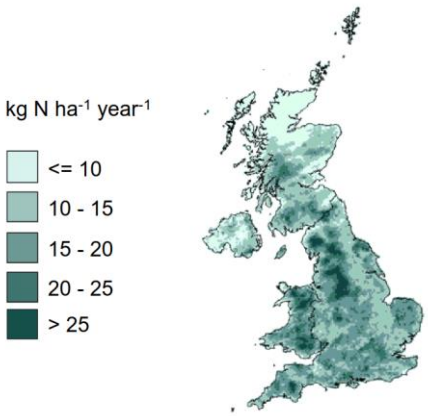


Figure 4. The nitrogen deposition measured between 2003-2005.

4.15 Monitoring programs such as the Countryside survey and the New Plant Atlas[40] of the UK revealed shifts in species composition that favour nutrient-tolerant species[41]. N deposition within the north-west is strongly associated with the large amounts of precipitation experienced there. Experimental evidence suggests that hummock forming *Sphagnum* species may be lost from bogs that are experiencing high deposition rates. Based upon research constructed from the Main Valley Bogs SAC, which are located in Northern Ireland, the critical loads for bogs is described at 5-10 kgN/ha/yr compared to current deposition rates of 24 kgN/ha/yr at the closest point of the SAC to the M62. Therefore Holcroft Moss is already subject to a deposition rate far above its critical load.

4.16 Traffic modelling for the Local Plan HRA indicates that the Local Plan housing and employment growth, coupled with the M6 Smart Motorways project being delivered by Highways England, is likely to result in a net increase in two-way traffic on the stretch of M62 past Holcroft Moss of c. 45,000 AADT (i.e. c. 30% compared to the end of plan period without the Local Plan growth or the Highways England scheme). The vast majority of this traffic will be associated with the increase in capacity of the M62 with the Highways England scheme in operation but growth in Warrington and other authorities will operate 'in combination'.

4.17 This is reflected in the results of air quality modelling undertaken for this HRA. That modelling indicates that at the closest area of bog to the M62 within Holcroft Moss (approximately 64m from the motorway) total nitrogen deposition rates are forecast to be approximately 0.1 kgN/ha/yr higher in 2036[42] with the Local Plan than they would be without the Local Plan (i.e. the difference between a deposition rate of 18.44 kgN/ha/yr without the Local Plan and 18.54 kgN/ha/yr with the Local Plan). This is a small difference (equivalent to 2% of the minimum critical load for bog of 5kgN/ha/yr) but will operate 'in combination' with growth in traffic due to housing/employment delivery in other authorities along the M62 and with the M62 Smart Motorways scheme. Overall, nitrogen deposition rates at the closest area of bog to the M62 are forecast to be 0.6 kgN/ha/yr higher when all expected traffic growth is considered 'in combination' than it would be in 2036 without any traffic growth. Note that this modelling does *not* take account of any sustainable transport initiatives or other positive air quality mitigation measures in the Local Plan; those are considered below.

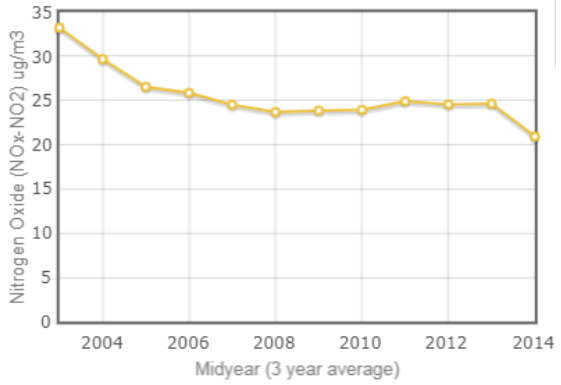
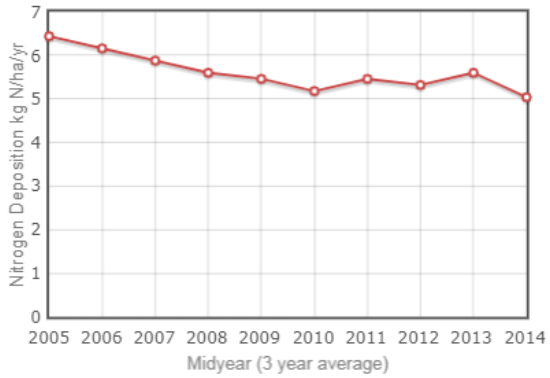
4.18 Without mitigation, increased residential, employment and retail development are therefore likely to contribute additional pollutant emissions within the Borough of Warrington compared to a situation with no further growth. However, it should be noted that this is within the context of generally improving trend in combustion-related pollution due to improved vehicle emissions technology and other national initiatives to reduce pollution, such that even allowing for 'in combination' traffic growth nitrogen deposition rates at the nearest area of bog to the M62 are forecast to be approximately 3.5 kgN/ha/yr better by 2036 than they were in 2016.

4.19 The general long-term trend for NOx has been one of improvement (particularly since 1990) despite an increase in vehicles on the roads[43]. Total nitrogen deposition[44] to the UK decreased by 13% between 1988

[40] Preston, C.D., Pearman, D.A. & Dines, T.D. (eds), 2002. New Atlas of the British and Irish Flora. ISBN: 0198510675
[41] Haines-Young, R., et al., 2003. Changing landscapes, habitats and vegetation diversity across Great Britain. Journal of Environmental Management, 67, 267-281.
[42] The latest year for which traffic forecast data are available
[43] Emissions of nitrogen oxides fell by 69% between 1970 and 2015. Source: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/579200/Emissions_airpollutants_statisticalrelease_2016_final.pdf [accessed 04/07/18]

and 2008, while NOx concentrations decreased by 50% over the same time period[45]. These results are the national manifestation of a trend which can also be discerned locally.

Figure 5: Recent trends in NOx and oxidised nitrogen deposition at Manchester Mosses SAC (Source: APIS, 2019)

Trend in background NOx concentrations at Manchester Mosses SAC	Trend in background oxidised nitrogen deposition at Manchester Mosses SAC
	

4.20 The graphs in Figure 5 relate to the 5km grid square (for nitrogen deposition) and 1km grid square (for NOx) within which the Manchester Mosses SAC is situated. They are the latest data taken from APIS in February 2019. They show that both background NOx concentrations and oxidised nitrogen deposition rates fell over the c. 10 years to 2014 (the latest year for which data are currently available). This reduction occurred notwithstanding increased housing and employment development, including traffic growth, over the same time period and is most likely attributable to improvements in emissions technology in the vehicle fleet (i.e. motorists replacing more polluting vehicles associated with earlier Euro standards with less polluting vehicles associated with more recent Euro standards).

4.21 This improving trend can be expected to continue, and indeed steepen, as drivers continue to replace older cars with newer vehicles and as further improvements in vehicle emissions technology are introduced. For example, the latest (Euro6/VI) emissions standard only became mandatory in 2014 (for heavy duty vehicles) and 2015 (for cars) and the effects are not therefore visible in the data available from APIS because relatively few people will have been driving vehicles compliant with that standard as early as 2014. In contrast, far more drivers can be expected to be using Euro6 compliant vehicles by the end of the Local Plan period (2037) since vehicles that are not compliant with Euro6 ceased manufacture in 2015.

4.22 The Local Plan does not allocate the kinds of employment development that would require a permit from the Environment Agency (i.e. stack emissions) and therefore the impact pathway is primarily through increased vehicle movements. Policies ENV4 and ENV5 have the potential for stack emissions from (for example) diesel plant, depending on the details of the proposals that come forward. Dust deposition and subsequent coating of vegetation disrupting photosynthesis could be an effect of policies ENV4 and ENV5, which both promote minerals development, if the minerals development is located within 50m of the SAC[46]. However, both policies also confirm that development will only be supported if the site and equipment is sited at a location where it can be demonstrated that it will accord with all other policies of the Local Plan in relation to the protection of the environment, which will particularly include protecting residents, infrastructure and the environment from dust deposition or stack emissions. Any proposal with stack emissions will also require a permit from the Environment Agency before it can operate and this will also take into account any pollution of European sites.

4.23 However, since traffic and air quality modelling for the Local Plan HRA indicates that the Local Plan housing and employment growth is likely to result in a net increase in two-way traffic on the stretch of M62

[44] Oxidised nitrogen derives from combustion, such as vehicle exhausts, while reduced nitrogen results from ammonia primarily from agriculture. Total nitrogen deposition is both oxidised and reduced nitrogen combined.
[45] Rowe EC, Jones L, Stevens CJ, Vieno M, Dore AJ, Hall J, Sutton M, Mills G, Evans CD, Helliwell RC, Britton AJ, Mitchell RJ, Caporn SJ, Dise NB, Field C & Emmett BA (2014) Measures to evaluate benefits to UK semi-natural habitats of reductions in nitrogen deposition. Final report on REBEND project (Defra AQ0823; CEH NEC04307)
[46] Distance taken from page 13 of Institute of Air Quality Management. 2014. Guidance on the Assessment of Dust from Demolition and Construction http://www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf

past Holcroft Moss adverse effects (if only in terms of slowing the improvement that would otherwise occur in the absence of growth) could occur on the Manchester Mosses SAC (Holcroft Moss) due to issues associated with air quality from the following policies, without mitigation due to the following policies:

- Policy DEV1 – Housing Delivery;
- Policy DEV3 – Gypsy & Traveller and Travelling Show People Provision;
- Policy DEV4 - Economic Growth and Development;
- Policy DEV5 – Retail and Leisure Needs;
- Policy GB1 - Green Belt;
- Policy TC1 – Town Centre and surrounding area;
- Policy INF2 - Transport Safeguarding;
- Policy MD1 - Warrington Waterfront;
- Policy MD2 - Warrington Garden Suburb;
- Policy MD3 - South West Urban Extension;
- Policy MD4 - Land at Peel Hall;
- Policy OS1 – Burtonwood;
- Policy OS2 – Croft;
- Policy OS3 – Culcheth;
- Policy OS4 – Hollins Green;
- Policy OS5 – Lymm (Massey Brook Lane);
- Policy OS6 – Lymm (Pool Lane);
- Policy OS7 – Lymm (Rushgreen Road/Tanyard Farm);
- Policy OS8 – Lymm (Warrington Road);
- Policy OS9 – Land to the north of Winwick
- ENV4 – Primary Extraction of Minerals
- ENV5 – Energy Minerals

4.24 There are a number of mitigation measures that have been included in other Local Plans where traffic-related air quality is a concern and these can be identified in advance of the modelling. A number of these measures are already included in Policy INF1 (Sustainable Travel and Transport) which states that '*To deliver the Council objectives of improving the safety and efficiency of the transport network, tackling congestion and improving air quality, promoting sustainable transport options, reducing the need to travel by private car and encouraging healthy lifestyle.*

4.25 The council will support:

- *Developments located in sustainable and accessible locations;*
- *Developments that provide infrastructure for the charging of plug-in and other ultra-low emission vehicles;*
- *Improved Walking and Cycling Facilities;*
- *Improved Public Transport; and*
- *Developers will be encouraged to transport minerals and waste via the most sustainable transport mode'.*

4.26 These are all positive measures that will help to protect and /or improve air quality and are in line with the policies set out in other Local Plan HRAs around the M62 to tackle the same issue. **However, there is also the need to ensure that project-level analysis of potential air quality impacts (and if necessary, project-level mitigation) is undertaken for significant sources of additional traffic past the M62 at Manchester Mosses SAC. This will require particular projects that are likely to result in**

a substantial increase in traffic flows to devise project-specific mitigation beyond the strategic air quality improvement measures being included in the Local Plan. If the change in flows on a the M62 past Manchester Mosses SAC due to a given scheme is likely to exceed 200 Heavy Duty Vehicles per day or 1,000 Average Annual Daily Traffic then this would be the trigger for project-level air quality modelling and, depending on the outcome of that modelling, the need for scheme-specific mitigation. This should be included in either Policy INF1 (which deals with sustainable transport) or Policy ENV8 (which references air quality).

4.27 After consultation with AECOM regarding air quality assessments and policy recommendations; Warrington Borough Council has since incorporated the above text to Policy ENV8. It is therefore considered that this policy mechanism will enable the delivery of measures associated with new development to ensure that any contribution to atmospheric nitrogen deposition (and thus acid deposition) is minimised. Moreover, the nearest area of SAC habitat (bog) at Holcroft Moss is located 64m from the M62 according to Natural England (and taking into account a dense belt of woodland that separates bog habitat from the M62). This is relevant because the peak nitrogen deposition due to the M62 (and due to changes in traffic flows due to growth in Warrington in combination with other authorities) is likely to be much closer to the M62 than this distance and the dense belt of woodland that separates bog habitat from the M62 and will intercept much of the traffic-related nitrogen. As a result it is considered that a sufficient policy mechanism is in place to ensure no adverse effects on the integrity of the SAC through this pathway.

Rostherne Mere Ramsar

4.28 Located in the neighbouring Borough of Cheshire East; Rostherne Mere Ramsar is located 3.3km to the south-east of the Warrington border. As such, there is the possibility that air quality issues arising from the Warrington Local Plan could impact site integrity. Rostherne Mere Ramsar, similarly to the Rixton Clay Pits SAC is primarily standing water. Therefore, the same implications of acid deposition and precipitation apply to this site.

4.29 Policies that have been screened in for the Rostherne Mere Ramsar due to issues associated with air quality include:

- Policy DEV1 – Housing Delivery;
- Policy DEV3 – Gypsy & Traveller and Travelling Show People Provision;
- Policy GB1 - Green Belt;
- Policy TC1 – Town Centre and surrounding area;
- Policy INF2 - Transport Safeguarding;
- Policy OS4 – Hollins Green;
- Policy OS8 – Lymm (Warrington Road).

4.30 However, Rostherne Mere is located 170m from the A556 at its closest (and well over 300m from the M56) which are the two roads most likely to be used as journey to work routes by residents of Warrington. Given these distances any additional nitrogen deposition due to these two roads will have fallen to background levels by the time the SAC is reached. Moreover, the aforementioned provisions of Policy INF1 will ensure that emissions associated with increased housing and employment in Warrington are minimised. As a result it is considered that a conclusion of no adverse effect on integrity can be made.

Mersey Estuary SPA/ Ramsar

4.31 The Mersey Estuary SPA/ Ramsar is situated in the neighbouring Borough of Halton and within the boundaries of the City of Liverpool; the SPA/Ramsar's closest distance to Warrington's border is 3.7km. As such, there is the possibility that air quality issues arising from the Warrington Local Plan could impact site integrity. However, there are no significant journey to work routes associated with growth in Warrington borough that lie within 200m of the SPA/Ramsar site. Moreover, intertidal mudflats and saltmarsh are more tolerant of nitrogen deposition since these are naturally nitrogen flushed environments. As such they have a much higher critical load range with the minimum part of the range being 20kgN/ha/yr. The current nitrogen deposition rate at the SPA/Ramsar site is a maximum of 16.94 kgN/ha/yr (thus being well below the critical load) and according to trend data on APIS the trend for

oxidised nitrogen deposition (that associated with combustion such as vehicle exhausts) is an improving one despite an increase in traffic with a reduction in nitrogen deposition of 1 kgN/ha/yr between 2005 and 2014 (the most recent year for which data are available).

4.32 It is also important to note that the experimental studies that underlie conclusions regarding the sensitivity of saltmarsh to nitrogen deposition, and the selection of 20 kgN/ha/yr as the minimum critical load have '… *neither used very realistic N* [nitrogen] *doses nor input methods i.e. they have relied on a single large application more representative of agricultural discharge*'[47], which is far in excess of anything that would be deposited from atmosphere. For coastal saltmarshes such as those for which Mersey Estuary SPA/Ramsar is partly designated nitrogen inputs from air are not as important as nitrogen effects from other sources because the effect of any deposition of nitrogen from atmosphere is likely to be dominated by much greater flushes of more readily utilized nitrogen from marine, fluvial or agricultural sources. This is reflected on APIS itself, which states regarding saltmarsh that '*Overall, N deposition* [from atmosphere] *is likely to be of low importance for these systems as the inputs are probably significantly below the large nutrient loadings from river and tidal inputs*'[48]. Moreover, the nature of intertidal saltmarsh in this area means that there is flushing by tidal incursion twice per day. This is likely to further reduce the role of nitrogen from atmosphere in controlling botanical composition.

4.33 In addition, greater threats to the site integrity as outlined by Natural England are the declines of designated seabirds the invasive species. Seabird declines are complex with studies tending to suggest the main causes of declines are marine litter and pollution, reduction in food caused both directly and indirectly from human fishing activities and loss of suitable foraging and breeding habitats[49].

4.34 Therefore, it is considered that no adverse effect on integrity would result from the Warrington Local Plan through this pathway either alone or in combination with other projects and plans.

Water quality

4.35 The quality of the water that feeds European Sites is an important determinant of the nature of their habitats and the species they support. Rivers, streams and aquatic environments supported by these sites can be affected by pollution from road run-off such as oil/ vehicle chemicals, and in the winter increased salt from de-icing the roads and pollution incident(s).

4.36 Within areas of excavation there is a potential for increased risk to groundwater resources from any spills/ leaks of fuel and/or oil.

4.37 Poor water quality can have a range of environmental impacts. At high levels, toxic chemicals and metals can result in the immediate death of aquatic life. At lower levels, detrimental effects can also be experienced, including increased vulnerability to disease and changes in wildlife behaviour.

4.38 The impacts of poor water quality entering European Sites can have far-reaching consequences similar to air quality. For example:

- At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour. Eutrophication, the enrichment of plant nutrients in water, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing available nitrogen.
- Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life.

4.39 It was identified at the screening stage that only the Rixton Clay Pits SAC and Manchester Mosses SAC were susceptible to issues due to surface water quality. These sites are located within 1km of several residential developments allocated within the Local Plan. However, the remaining European Sites are

[47] UK Air Pollution Information System website [Accessed 21/11/18]: http://www.apis.ac.uk/node/968
[48] APIS website [Accessed 21/11/18]: http://www.apis.ac.uk/node/968
[49] Burger, J. and Gochfeld, M., 2002. Effects of chemicals and pollution on seabirds. *Biology of marine birds*, pp.485-525.

located well over 1km from the Warrington Borough boundary and are therefore not expected to be impacted by developments emerging from Warrington's Local Plan.

Rixton Clay Pits SAC

4.40 The Rixton Clay Pits SAC has been identified to be susceptible to water quality issues that may result in the loss of suitable pond vegetation that great crested newts use to lay eggs.

4.41 There is one residential development proposal that is located within the 1km buffer zone of Rixton Clay Pits SAC:

- Hollins Green (Green Belt release).
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4.42 Policies within the Warrington Local Plan that could not be screened out in isolation, due to issues of water quality include:

- Policy DEV1 – Housing Delivery;
- Policy DEV3 – Gypsy & Traveller and Travelling Show People Provision;
- Policy OS4 – Hollins Green;
- Policy GB1 - Green Belt.
- Policy ENV4 – Primary Extraction of Minerals
- Policy ENV5 – Energy Minerals
- Policy ENV7 – Renewable and Low Carbon Energy

4.43 Despite the far-reaching implications of poor water quality to the SAC, Local Plan policies regarding water quality and other legal drivers protecting water quality, provides safeguarding to this site.

4.44 Notably, Policy ENV2 - Flood Risk and Water Management states that *'sustainable water management measures must be integrated into developments to reduce flood risk across the Borough and to avoid adverse impacts on water quality and quantity.'* Development must also '*use Sustainable Drainage Systems that reflect the principles set out in the adopted Warrington Sustainable Drainage Systems (SuDS) Design and Technical Guidance, unless it can be demonstrated that such techniques are impractical or would present an unacceptable pollution risk'* as set out by Policy ENV2. Policy ENV8 describes that '*development proposals will not be permitted where it would have an adverse effect on the quality or availability of groundwater resources, watercourses or water bodies*.'

4.45 In addition, all Main Development Area Polices (Policy MD1, MD2, MD3 and MD4) and settlement site allocations from Green Belt release (Policy OS1, OS2, OS3, OS4 OS5, OS6, OS7 OS8 and OS9) require Sustainable Drainage Systems (SuDS) or Sustainable Urban Drainage Systems (SUDS) to be incorporated into all proposals for these allocations. These development policies also highlight that '*improvements to the water supply and sewerage network will be required, ensuring that surface water drainage is not combined with foul discharge'*. As such, issues raised in section 4.26 are appropriately mitigated for within each development policy of the Local Plan. The safeguarding of European Sites is further provided by Policy DC4 – Ecological Network that '*proposals for development which may affect European Sites of International Importance will be subject to the most rigorous examination in accordance with the Habitats Directive*.' Policy DC4 also states that proposals expected to have likely '*significant effects on the site…and which would affect the integrity of the site, will not be permitted'*.

4.46 Furthermore, the minerals extraction policies (ENV4 and ENV5) and policy ENV7 regarding renewable energy all confirm that development will only be supported if the site and equipment is sited at a location where it can be demonstrated that it will accord with all other policies of the Local Plan in relation to the protection of the environment, which will particularly include protecting water quality and levels.

4.47 Finally, the provisions of the Environmental Damage (Prevention and Remediation) (England) Regulations 2015 and Environmental Permitting (England and Wales) Regulations 2010 make it an offence to pollute waterbodies and will thus also ensure pollution will not arise.

4.48 Additional surface water guidance outlined by the Environment Agency require that all development proposals within undeveloped (greenfield) sites do not exceed the current surface water discharge rates. To establish the discharge rate of a Greenfield site the following information is required:

- *'Written confirmation of the discharge rate as agreed by the receiving drainage body;*
- *For discharge into a Main River or an Ordinary Watercourse outside of the Internal Drainage Board District the discharge rate will be based on the calculated pre-development (greenfield) runoff rate for the site; and*
- *If complex controls are to be used for control of discharge rates calculations for the greenfield runoff rate should be provided for the 130 and 100 year return periods. The methodology in the EA/Defra document "Preliminary Rainfall Runoff Management for Development (W5-074/A/TR1)" should be used as the basis for calculations*[50]*.'*

4.49 In conclusion, these mitigating policies and other legal drivers provide safeguarding criteria for the development proposals on those allocated sites within 1km of the SAC, or any windfall development that may come forward in that zone. However, since policies DEV1, DEV3, OS4 and GB1, involve development in the Hollins Green area for permanent residential development further measures are recommended for this area.

4.50 **It is therefore recommended to ensure robustness of the Local Plan that the following text is added to Policy OS4:**

- **All proposals are required to:**
  - **demonstrate no likely significant effects to the integrity of European Sites due to issues of water quality or availability of groundwater resources, watercourses or water bodies.**

4.51 After consultation with AECOM regarding water quality assessment and policy recommendations; Warrington Borough Council has since incorporated the above text to Policy OS4 under Point 14. With this additional safeguard it is considered that a conclusion of no adverse effect on integrity could be reached.

Manchester Mosses SAC

4.52 The major current threat to raised bogs in the UK is the incorrect management of water. Bog land and the specialist species that are supported here are heavily reliant and therefore sensitive to water chemistry, quality and levels. The loss of major quantities of water within bog land can have irreversible changes. For example, extreme water abstraction and efficient drainage systems may result in the loss of specialist plant species and allow the colonisation of woodland species such as alder, ash, willow and birch. Equally, extreme flooding can also result in ecological shifts and colonising species better adapted to an aquatic environment. The water levels of bogs do not fluctuate greatly for example Clymo and Hayward (1982)[51] suggest that the vertical movement of the water table (i.e. water from the vegetation layer to the underlying peat) ranges up to 20cm.

4.53 Therefore, when taking into consideration the development policies outlined within the Warrington Local plan in the absence of mitigation these could lead to adverse effects for development sites that lie within 1km of the SAC. This may be due to increased surface water run-off and outdated drainage systems designed to capacitate the current levels of urbanisation within Warrington, inappropriate drainage of land for development or mineral extraction associated with policies ENV4 and ENV5.

4.54 Policies within the Warrington Local Plan that could pose a likely significant effects due to water quality issues as a result of delivering new development within 1km of this SAC are:

- Policy DEV1 – Housing Delivery;
- Policy DEV3 – Gypsy & Traveller and Travelling Show People Provision;
- Policy GB1 - Green Belt;

[50] Environment Agency (2010) Surface Water Guidance. [Online] Avaiable from: http://www.boston.gov.uk/PlanningDocs/BBC/B-14-0136/Surface_Water_Guidance_Sheet_3_v3.pdf [Accessed: 19 Feb. 19]
[51] Clymo, R.S. & Hayward, P.M. (1982) The ecology of Sphagnum - In: Bryophyte Ecology, 229-29 1, (Ed. by A J E Smith), Chapman & Hall, London.

- Policy ENV4 – Primary Extraction of Minerals
- Policy ENV5 – Energy Minerals.

4.55 However, as described in paragraphs 4.39 to 4.45 there are safeguarding polices that will effectively provide water quality protection to the Manchester Mosses SAC. Moreover, minerals development is addressed by provisions within Policies ENV4 and ENV5 and the legal protection to water quality set out in other legal drivers..

4.56 It is therefore considered that a conclusion of no adverse effect on integrity could be reached.

Urbanization and effects on functionally-linked land

Rixton Clay Pits SAC

4.57 The Rixton Clay Pits SAC is located towards the eastern extremity of the Warrington Borough and is set within a rural landscape of agricultural fields and associated hedgerows and woodland. The closest (existing) village to the SAC is Hollins Green located 700m (village centre) to the east and the suburban area of Martinscroft and Woolston located 2.6km to the west (town centre). Great crested newts designated within the SAC are vulnerable to development due to habitat fragmentation thereby preventing the movement of adult newts between breeding ponds. The following policies refer to a development allocation that is within 500m of the Rixton Clay Pits SAC:

- Policy DEV1 – Housing Delivery;
- Policy GB1 - Green Belt; and
- Policy OS4 – Hollins Green (with the closest development site located 110m to the east).

4.58 The development of this site may result in the net loss of overwintering and foraging habitats for newts that breed within the SAC. Therefore, the allocation will result in potential loss of functionally-linked land for the SAC (and thus an effect on the integrity of the SAC) without mitigation. Moreover, since the development is located within easy walking distance of the SAC (within 500 metres or 5 minutes' walk) there is the risk of an increase in fly tipping which is known to be an issue for this SAC.

4.59 It is therefore recommended that the following text is incorporated into Policy, OS4:

- **Development proposals that are located within 500m of the Rixton Clay Pits SAC are required to undertake Protected Species Surveys by a licenced ecologist to investigate the use of surrounding habitat by Great crested newts. If loss of supporting habitat for Great crested newts is shown to arise, consent will not be given unless the developer provides mitigation measures for newts such that there is no net loss of suitable foraging and over-wintering habitat within 500m of the SAC. This could be through either entirely new habitat creation or the enhancement of existing habitat to improve its ability to support great crested newt. Any such mitigation measures must be agreed with Natural England.**
- **Development proposals that are located within 500m of the Rixton Clay Pits SAC are also required to make a financial contribution towards management of the SAC specifically with regard to management of fly-tipping and associated anti-social activities.**

4.60 After consultation with AECOM regarding water quality assessment, loss of supporting habitat and policy recommendations; Warrington Borough Council has since incorporated the above text to Policy OS4. With this additional safeguard it is considered that a conclusion of no adverse effect on integrity could be reached.

Recreational pressure

4.61 Recreational use of a European site has the potential to:

- Prevent appropriate management or exacerbate existing management difficulties;
- Cause damage through erosion and fragmentation;
- Cause eutrophication as a result of dog fouling; and

- Cause disturbance to sensitive species, particularly ground-nesting birds and wintering wildfowl.

4.62 Different types of European sites are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects from recreation can be complex. As discussed at the start of this document, recreational pressure is considered for all sensitive terrestrial sites within 5km of the borough and all sensitive coastal sites within 10km of the borough. In practice, this involves Rixton Clay Pits SAC, Manchester Mosses SAC, Mersey Estuary SPA/Ramsar site, Rostherne Mere Ramsar site and Midlands Meres & Mosses Phase 1 Ramsar site.

Mechanical/abrasive damage and nutrient enrichment

4.63 Most types of terrestrial European site can be affected by trampling, which in turn causes soil compaction and erosion. Walkers with dogs contribute to pressure on sites through nutrient enrichment via dog fouling and also have potential to cause greater disturbance to fauna as dogs are less likely to keep to marked footpaths and move more erratically. Motorcycle scrambling and off-road vehicle use can cause serious erosion, as well as disturbance to sensitive species.

4.64 There have been several papers published that empirically demonstrate that damage to vegetation in bogs, woodlands and other habitats can be caused by vehicles, walkers, horses and cyclists:

- Gremmen (2003)[52] identified that tramping of moss had direct effects on plants, such as the breaking of stems and leaves that prevent photosynthesis. Tramping reduced vegetation height, total cover and species richness.
- Wilson & Seney (1994)[53] examined the degree of track erosion caused by hikers, motorcycles, horses and cyclists from 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.
- Cole *et al.* (1995a, b)[54] conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow and grassland communities (each trampled between 0–500 times) over five mountain regions in the US. Vegetation cover was assessed two weeks and one year after trampling, and an inverse relationship with trampling intensity was discovered, although this relationship was weaker after one year than two weeks indicating some recovery of the vegetation. Differences in plant morphological characteristics were found to explain more variation in response between different vegetation types than soil and topographic factors. Low-growing, mat-forming grasses regained their cover best after two weeks and were considered most resistant to trampling, while tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. Cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks, but had recovered well after one year and as such these were considered most resistant to trampling. Chamaephytes (plants with buds above the soil surface) were least resistant to trampling. It was concluded that these would be the least tolerant of a regular cycle of disturbance.
- Cole (1995c)[55] conducted a follow-up study (in four vegetation types) in which shoe type (trainers or walking boots) and trampler weight were varied. Although immediate damage was greater with walking boots, there was no significant difference after one year. Heavier tramplers caused a greater reduction in vegetation height than lighter tramplers, but there was no difference in effect on cover.
- Cole & Spildie (1998)[56] experimentally compared the effects of off-track trampling by hikers and horses (at two intensities – 25 and 150 passes) in two woodland vegetation types (one with an erect forb understorey and one with a low shrub understorey). Horse traffic was found to cause the largest

[52] Gremmen, N.J.M, Smith, V.R and van Tongeren, O.F.R (2003) Impact of trampling on the vegetation of subantarctic Marion Island. Arctic, Antarctic and Alpine Research 35(4) 442-446.
[53] Wilson, J.P. & Seney, J.P. (1994) Erosional impact of hikers, horses, motorcycles and off-road bicycles on mountain trails in Montana. *Mountain Research and Development* 14: 77-88.
[54] Cole, D.N. (1995a) Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response. *Journal of Applied Ecology* 32: 203-214.
Cole, D.N. (1995b) Experimental trampling of vegetation. II. Predictors of resistance and resilience. *Journal of Applied Ecology* 32: 215-224.
[55] Cole, D.N. (1995c) Recreational trampling experiments: effects of trampler weight and shoe type. Research Note INT-RN-425. U.S. Forest Service, Intermountain Research Station, Utah.
[56] Cole, D.N. & Spildie, D.R. (1998) Hiker, horse and llama trampling effects on native vegetation in Montana, USA. *Journal of Environmental Management* 53: 61-71.

reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance but recovered rapidly. Higher trampling intensities caused more disturbance.

4.65 The total volume of dog faeces deposited on sites can be surprisingly large. For example, at Burnham Beeches National Nature Reserve over one year, Barnard (2003)[57] estimated the total amounts of urine and faeces from dogs as 30,000 litres and 60 tonnes respectively. Nutrient-poor habitats such as heathland are particularly sensitive to the fertilising effect of inputs of phosphates, nitrogen and potassium from dog faeces[58].

Disturbance

4.66 Concern regarding the effects of disturbance on birds stems from the fact that they are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding. Disturbance therefore risks increasing energetic output while reducing energetic input, which can adversely affect the 'condition' and ultimately survival of the birds. In addition, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites as they must sustain a greater number of birds.

4.67 A number of studies have shown that birds are affected more by dogs and people with dogs than by people alone, with birds flushed more readily, more frequently, at greater distances and for longer. In addition, dogs, rather than people, tend to be the cause of many management difficulties, notably by worrying grazing animals, and can cause eutrophication near paths.

4.68 However, the outcomes of many of these studies should be treated with care. For instance, the effect of disturbance is not necessarily correlated with the impact of disturbance, i.e. the most easily disturbed species are not necessarily those that will suffer the greatest impacts. It has been shown that, in some cases, the most easily disturbed birds simply move to other feeding sites, whilst others may remain (possibly due to an absence of alternative sites) and thus suffer greater impacts on their population. A literature review undertaken for the RSPB also urges caution when extrapolating the results of one disturbance study because responses differ between species and the response of one species may differ according to local environmental conditions. These factors have to be taken into account when attempting to predict the impacts of future recreational pressure on European sites.

4.69 Disturbing activities are on a continuum. The most disturbing activities are likely to be those that involve irregular, infrequent, unpredictable loud noise events, movement or vibration of long duration. Birds are least likely to be disturbed by activities that involve regular, frequent, predictable, quiet patterns of sound or movement or minimal vibration. The further any activity is from the birds the less likely it is to result in disturbance.

4.70 The factors that influence a species' response to a disturbance are numerous, but the three key factors are species sensitivity, proximity of disturbance sources and timing/duration of the potentially disturbing activity.

4.71 It should be emphasised that recreational use is not inevitably a problem. Many European sites are also nature reserves managed for conservation and public appreciation of nature. At such sites, access is encouraged and resources are available to ensure that recreational use is managed appropriately.

Rixton Clay Pits SAC

4.72 Impacts of recreational pressure are not currently identified within the conservation objectives, or environmental conditions of the SAC, and no concern is identified on the Site Improvement Plan. Fishing at Rixton Clay Pits SAC could have implications for likely significant effects to the population of great crested newts designated here. Great crested newt larvae are extremely vulnerable to predation by fish such as sticklebacks and perch. While large fish species such as carp could have negative indirect impacts to newts through the removal of weed that is used as an egg-laying substrate[59]. These impacts

[57] Barnard, A. (2003) Getting the Facts - Dog Walking and Visitor Number Surveys at Burnham Beeches and their Implications for the Management Process. *Countryside Recreation* 11: 16-19.
[58] Shaw, P.J.A., Lankey, K. & Hollingham, S.A. (1995) Impacts of trampling and dog fouling on vegetation and soil conditions on Headley Heath. *The London Naturalist* 74: 77-82.
[59] Produced by the Great Crested Newt Conservation Officer for the Great Crested Newt Species Action Plan, based on Watson, W (2002) Review of fish control methods for the Great Crested Newt SAP, CCW contract science report no. 476

are detrimental and have been identified as a significant cause of Great crested newt declines in the UK. Policies brought forward from the screening stage include:

- Policy DEV1 – Housing Delivery;
- Policy DEV3 – Gypsy & Traveller and Travelling Show People Provision;
- Policy GB1 - Green Belt;
- Policy OS4 – Hollins Green;
- Policy OS5 – Lymm (Massey Brook Lane);
- Policy OS6 – Lymm (Pool Lane);
- Policy OS7 – Lymm (Rushgreen Road/Tanyard Farm); and
- Policy OS8 – Lymm (Warrington Road).

4.73 Although the site is vulnerable to fishing this is primarily due to fish-stocking (rather than the fishing activity itself) and this site is already stocked. The Rixton Clay Pits SAC constitutes a series of ponds and waterbodies of variety habitat types. Some of these are stocked with large species of fish such as carp, while others are not. The site therefore accommodates both fish and newts and the distribution of stocked ponds will not change as a result of the Warrington Local Plan. In addition, fishing actives at the SAC are restricted to members of the Warrington Anglers Association. The site has well-established footpaths and signage to engage the public about wildlife and the site conservation value. The SAC is well-established to support recreational activities and therefore, while increased recreational activity may occur, this will not result on an adverse effect on the ability of the SAC to support great crested newts.

4.74 Moreover, mitigating policies are drafted within Warrington's Local Plan that ensure the safeguarding and provision of recreational facilities such as sports fields and accessible open-space so there will be no reduction in existing alternative facilities due to the Local Plan and will likely be a net increase. For example, Policy DC5 - Open Space, Outdoor Sport and Recreation Provision states that '*the Council will work with partners to ensure that a comprehensive range of sport and recreation facilities will be provided across Warrington to meet the needs of the existing and proposed population including… natural/Semi-natural greenspaces… All residential development proposals of 40 dwellings or more will be required to contribute to the provision of open space and equipped play provisions'.* In addition, the Local Plan also identified the future opportunities for restoration works at disused industrial sites.

4.75 Policy ENV6 – Restoration and Aftercare of Mineral and Waste Sites states that '*applications for mineral extraction and/or landfill/landraising of waste sites will be permitted where they are accompanied by appropriate proposals for site restoration and aftercare*.' This policy ensures the return of land either to its original use, or an alternative use of benefit to the local or wider community and biodiversity. Essentially, this policy aims to increase the future quantity and quality of ecologically valuable habitat to the Warrington Borough that can be used for recreational means.

4.76 A conclusion of no adverse effects on integrity due to recreational pressure can therefore be made for this SAC.

Manchester Mosses SAC, Rostherne Mere Ramsar, Midlands Meres & Mosses Phase 1 Ramsar

4.77 These three sites are treated together as they support similar habitats. At the time of writing, there is understood to be very little recreational activity within the Manchester Mosses SAC or any of the Ramsar sites. There are a variety of reasons for this, which may be due to poor public perception of bog land, private ownership of land, or inaccessibility. Raised-bog by nature is uneven, waterlogged terrain that is not easily used for recreational means and/or is not accessible due to health and safety issues. As such, bogs are generally protected from negative impact rising from trampling and disturbance issues.

4.78 In addition, the part of the Manchester Mosses SAC most likely to be used for recreation by residents of Warrington due to its proximity to the urban area (Risley Moss) employs on-site rangers who ensure the protection of the site through site patrols, creation of management plans, public engagement and

conservation activities[60]. In addition, as already discussed, recreational policies DC3 and DC5ensure that the appropriate level of recreational space is provided for residential development within Warrington, whilst policy ENV6 will enable the restoration of mineral workings to publically accessible habitat of greater appeal for recreation than bog and mere. As such, none of the development allocations drafted within the Local Plan are expected to contribute to an adverse effect on the integrity of the SAC or any of the Ramsar sites due to recreational pressures.

Mersey Estuary SPA/ Ramsar

4.79 The Mersey Estuary SPA/ Ramsar is currently experiencing a decline in seabird numbers as are many other UK estuaries. It has been suggested that these declines could be at least partly due to recreational pressures (i.e. human and vessel disturbances); however, research so far is unclear[61] and because the species involved are migratory the population reductions could be associated with climate change or factors outside the UK. The Mersey Estuary SPA/Ramsar does not lie within the borders of Warrington. As such, only developments that are located towards the western half of Warrington lie within the 10km influence zone of the SPA. The following policies were brought forward from the screening exercise:

- Policy DEV1 – Housing Delivery;
- Policy DEV4 - Economic Growth and Development;
- Policy DEV5 – Retail and Leisure Needs;
- Policy GB1 - Green Belt;
- Policy TC1 – Town Centre and surrounding area;
- Policy MD1 - Warrington Waterfront;
- Policy MD3 - South West Urban Extension; and
- Policy MD4 - Land at Peel Hall.

4.80 All development allocations within these policies are located within 10km of the Mersey Estuary SPA/ Ramsar and were therefore considered to pose likely significant effects to the integrity of the SPA/Ramsar.

4.81 Proposals of the Warrington Western Link Highways project aims to link the A56 (Chester Road) with the A57 over the River Mersey. The objectives of this project are to relieve congestion with the town centre of Warrington and to connect the north and south of Warrington separated by the River Mersey. This road could lead to recreational pressures due to the closer proximity of the Mersey Estuary from Runcorn. However, due to the Manchester Ship Canal and the heavily industrialised waterside of the Ship Canal access to the Mersey is significant reduced. Therefore arguably the closest accessible unit of the SPA/Ramsar to the Warrington boundary is Hale Marsh, as the areas south of the River Mersey are not easily accessible due to the intervening presence of the Manchester Ship Canal According to local knowledge[62], good numbers of Teal feed along the creeks on the marsh and flocks of waders may be seen roosting on the marsh (Golden plover, Lapwing, Avocet, Curlew, Redshank, Greenshank and Dunlin). Flocks of up to several hundred Canada geese roost on the marsh during high tides with Black tailed Godwit & little egrets an increasing sight. In recent years a small number of Bewick and Whooper swans have stayed on the marsh during the winter.

4.82 Hale Marsh lies approximately 9km from the nearest residential areas of Warrington (over 10km from most of the borough) and there is very limited parking. As such, it is considered that the Mersey Estuary SPA/Ramsar site will form a negligible recreational resource for residents of Warrington, in contrast to those of the Liverpool City Region who live closer to the accessible parts of the SPA/Ramsar site and will be more likely and able to access the SPA/Ramsar site on foot. It is therefore considered that the increased housing (and thus population) associated with the Local Plan will not result in adverse effects on the integrity of the Mersey Estuary SPA/Ramsar site.

[60] Warrington Borough Council (2018) Risley Moss. [Online] Available from: www.warrington.gov.uk/homepage/542/risley_moss [Accessed: 18 Feb. 19].
[61] BTO (2014) Review and analysis of changes in water-bird use of the Mersey Estuary SPA, Mersey Narrows & North Wirral Foreshore SPA and Ribble & Alt Estuaries SPA. BTO Research Report No. 648
[62] http://www.rspb.org.uk/groups/Liverpool/places/353268/
http://www.thefriendsofpickeringspasture.org.uk/winter-2015-16-pickerings-pasture.html

5. In combination

Local Plans

5.1 The neighbouring Boroughs to Warrington have all produced Local Plan documents that are at varying stages of development. Each of these has been subject to HRA with each assessing their level of impact expected to European Sites within and around the Borough of Warrington. The HRA of the Halton Local Plan 2014-2037 concluded no adverse impacts to the integrity of the Manchester Mosses SAC and Rixton Clay Pits SAC. There were key unresolved impact pathways for the Mersey Estuary SPA/Ramsar that was identified; however; recommendation within the Halton HRA provides a framework for the appropriate safeguarding of this site for all future development within Halton. HRA undertaken in 2018 of Cheshire West and Chester Council Local Plan: Main Modifications concluded '*Screening of the modifications identified that out of the 70 individual modifications to the policies, 42 of these originally had no LSE alone and no LSE in combination and the modifications did not result in a change to the findings. All of the others, except one, had LSE either alone or in combination and the modification did not remove the LSE and did not result in significant additional adverse effects.* In addition, no likely significant effects were expected for the Manchester Mosses SAC or the Rixton Clay Pits SAC. The HRA of the Cheshire East Local Plan 2010-2030 (adopted 2017) also concluded no likely significant effects to the European Sites assessed within this HRA report. The Wigan Local Plan Core Strategy was subject to HRA in 2015 and concluded for Manchester Mosses SAC that '*the Screening Opinion of the HRA has concluded that providing the recommendations below are adopted development within the allocated sites will not have any harmful impact on the special nature conservation interests of the Manchester Mosses SAC*.'

5.2 As such, and provided the recommendations made in this report concerning Warrington are included in the Local Plan, it is considered that no residual adverse effect on integrity would occur in combination with the Warrington Local Plan.

HS2

5.3 A section of the proposed HS2 route is to pass through the eastern half of Warrington. This proposed route is within 500m of the Manchester Mosses SAC and 1.3km of the Rixton Clay Pits SAC. A separate HRA was conducted for this route of HS2 for the Manchester Mosses SAC and concluded that: '*hydrology impacts could occur would be either as a result of increased drainage of the surrounding area, or as a result of piling works or surface loading affecting the permeability of the peat mass or providing vertical pathways to more permeable geological strata surrounding the sites. However, assuming the adoption of suitable foundation piles, track construction techniques and a design which does not increase the drainage in the area surrounding the SAC, it would be possible to ensure that the surface water and groundwater levels were not affected and therefore there would be no likely significant effect on the SAC*[63].'

5.4 Currently, there is no HRA regarding the impacts of HS2 to the Rixton Clay Pits SAC. However, reports have assessed that this site is vulnerable to *'temporary adverse effect due to indirect effects from construction activities and traffic movements'* at a national level[64]. The proposed route of HS2 through Warrington is located 1.2km north-west of the SAC; this site is therefore outside of the 500m buffer zone of the SAC. However, at this stage a project specific HRA is required to screen out all possible impact pathways expected in combination to the Warrington Local Plan. However, provided the recommendations made in this report concerning Warrington are included in the Local Plan, it is considered that no residual adverse effect on integrity would occur in combination with the Warrington Local Plan.

M62 Smart Motorway

5.5 During the course of the Local Plan period Highways England will be delivering a Smart Motorway scheme for the M62 as it passes Manchester Mosses. This will effectively increase capacity of the M62 by turning the hard shoulder into a conventional running lane and will therefore involve an increase in traffic

[63] Temple-ERM (2013) High Speed Rail: Consultation on the route from the West Midlands to Manchester, Leeds and beyond Sustainability Statement. *Appendix E4 – Biodiversity*.
[64] HS2 (2018). High Speed Rail (Crewe to Manchester and West Midlands to Leeds). *Volume 2: Community Area report MA04: Broomedge to Glazebrook.*

flows on the M62 by itself and in combination with housing and employment growth in the surrounding area. Highways England has undertaken an HRA for this scheme which has been agreed with Natural England and includes detailed air quality modelling for the SAC. The conclusion is that there will be no adverse effect alone or 'in combination' with the growth in surrounding areas due primarily to a combination of the measures that are being undertaken to deliver improved vehicle emissions and the distance of the nearest area of bog from the M62.

6. Conclusion

6.1 In conclusion, it is considered that, following the inclusion of AECOM's recommendations in the Local Plan it is possible to conclude no adverse effect on the integrity of any European sites either alone or in combination with other plans and projects.