Warrington Local Plan Examination

Hearing Session Note

Matter 1 - Habitat Regulation Assessment Issues Revised HRA (Dec 2021)

23rd September 2022

WARRINGTON
Borough Council

Introduction

1.1 This note has been provided ahead of the Hearing session on the HRA on 6th October. In December 2021 an updated version of the Warrington Local Plan HRA Report was produced in order to take account of comments made on the HRA during the Regulation 19 consultation on the Draft Local Plan (the UPSVLP 2021). These changes were made primarily to address comments from Natural England but also addressed some comments raised by Cheshire Wildlife Trust

2. Information Provided

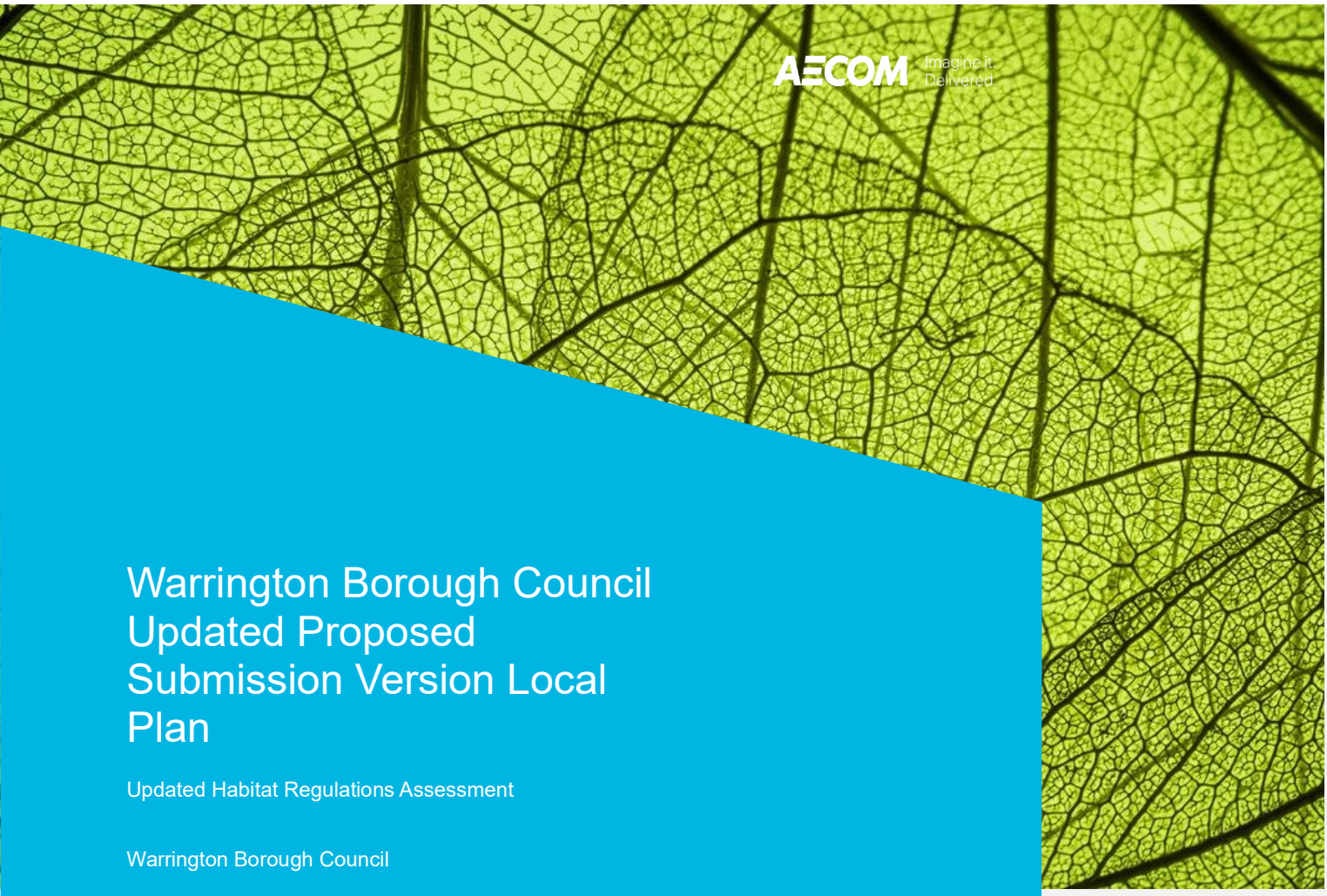
2.1 Copy of the revised HRA (Dec 2021) containing tracked changes.

3. Summary of changes in the revised HRA (Dec 2021)

3.1 The following changes were made further to the August 2021 version of the HRA submitted for Examination with the Local Plan:

- Clarified the justification for screening out Policy INF2 Transport Safeguarding.
- Reviewed the decision to screen in policies ENV4, ENV5 and ENV7 in light of Natural England's comments on ENV4, screening out all three minerals policies.
- Taken forward water quality impacts to Mersey Estuary SPA/Ramsar to the Appropriate Assessment for completeness; water quality as an impact pathway was already in the Appropriate Assessment but only with regard to Rixton Clay Pits SAC and Manchester Mosses SAC.
- Clarified the text regarding the screening out of air quality impacts on Rostherne Mere Ramsar site and also screening out air quality impacts on Mersey Estuary SPA/Ramsar following discussion with Natural England; Mersey Estuary SPA/Ramsar had previously been taken forward to Appropriate Assessment and adverse effects then dismissed at that stage.
- Added further discussion of the air quality modelling results for Manchester Mosses SAC.
- Added further clarification to the discussion over impacts on functionally-linked land, including reference to Natural England's report on functionally-linked land in north-west England which was published after the previous (August 2021) version of the HRA was written.

3.2 Note that considerable further changes to the air quality modelling for Manchester Mosses SAC have been made since December 2021. Therefore, the data for that SAC in the 2021 HRA is out of date and is to be replaced by the results in the August 2022 air quality modelling as reported in the document 'Air Quality Assessment for Warrington Local Plan Habitats Regulations Assessment: Further Modelling of Manchester Mosses SAC'.



Warrington Borough Council Updated Proposed Submission Version Local Plan

Updated Habitat Regulations Assessment

Warrington Borough Council

~~August~~ December 2021

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
0	19/02/19	For client review	JR	James Riley	Technical Director
1	21/02/19	Updated for client review	JR	James Riley	Technical Director
2	15/03/19	Updated following changes to policy and further comments	JR	James Riley	Technical Director
3	07/04/20	Updated in response to Natural England consultation	JR	James Riley	Technical Director
4	17/08/2020	Updated in response to further comments	JR	James Riley	Technical Director
5	July 2021	Amendments in response to changes in the Local Plan	JR	James Riley	Technical Director
6	August 2021	Final changes in response to client comments	JR	James Riley	Technical Director
7	December 2021	Updated following consultation on the Local Plan and HRA	JR	James Riley	Technical Director

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Table of Contents

List of Figures

List of Tables

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 2021-2038. 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 the National Site Network, also known as European Sites, that are located within influence of Warrington Borough.

Legislation

1.3 The UK left the EU on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 ("the Withdrawal Act"). This established a transition period, which ended on 31 December 2020. The Withdrawal Act retains the body of existing EU-derived law within our domestic law, meaning that legislation relating to nature conservation continues to apply to and in the UK.

1.4 The need for Appropriate Assessment is set out by the Conservation of Habitats and Species Regulations 2017 (as amended) and is retained in the EU Exit Regulations 2019. The Regulations apply the precautionary principle[1] to assessments of European Sites, which form part of the newly coined National Site Network. Consent should only be granted for plans and projects once the relevant competent authority has ascertained that there will either be no likelihood of significant effects, or that a mechanism is in place to ensure that no adverse effect on the integrity of the European Site(s) in question arises. Where an Appropriate Assessment has been carried out and results in a negative assessment, or if uncertainty remains over the significant effect, consent can only be granted if there are no alternative solutions and there are Imperative Reasons of Over-Riding Public Interest (IROPI) for the development and compensatory measures have been secured.

1.5 To ascertain whether site integrity will be affected, an Appropriate Assessment should be undertaken of the plan or project in question. Figure 1 provides the legislative basis for an Appropriate Assessment.

> **Conservation of Habitats and Species Regulations 2017 (as amended)**
>
> The Regulations state that:
>
> "*A competent authority, before deciding to … give any consent for a plan or project which is likely to have a significant effect on a European site … must make an appropriate assessment of the implications for the plan or project in view of that site's conservation objectives… The competent 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 the HRA process.

1.6 Over the years, the term '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.

[1] The Precautionary Principle, which is referenced in Article 191 of the Treaty on the Functioning of the European Union, has been defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005) as:
"*When human activities may lead to morally unacceptable harm [to the environment] that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. The judgement of plausibility should be grounded in scientific analysis*".

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[2]. As yet, no further formal guidance has emerged although Government published general guidance on appropriate assessment in 2019[3]. However, Court Judgements can be used to shape the approaches used.

2.3 The draft MHCLG guidance[4] 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[5] 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)[6]. 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.

[2] MHCLG (was CLG) (2006) Planning for the Protection of European Sites, Consultation Paper
[3] https://www.gov.uk/guidance/appropriate-assessment
[4] Ibid
[5] No Adastral New Town Ltd (NANT) v Suffolk Coastal District Council Court of Appeal, 17th February 2015
[6] High Court case of R (Devon Wildlife Trust) v Teignbridge District Council, 28 July 2015

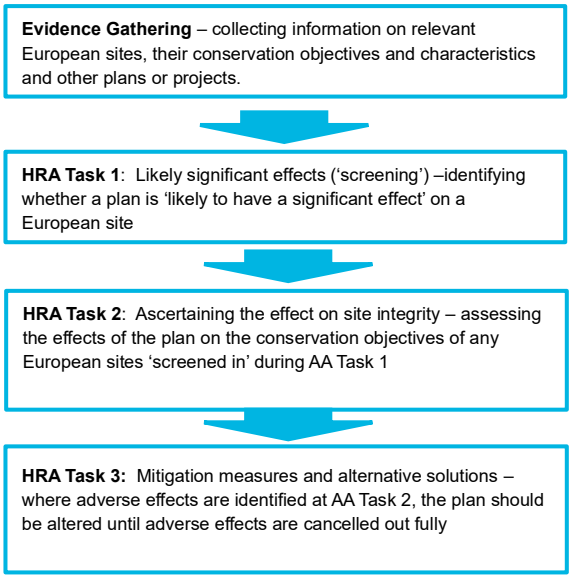

Figure 2: Four-Stage Approach to Habitats Regulations Assessment (Source: CLG, 2006).

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.

2.9 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 3.

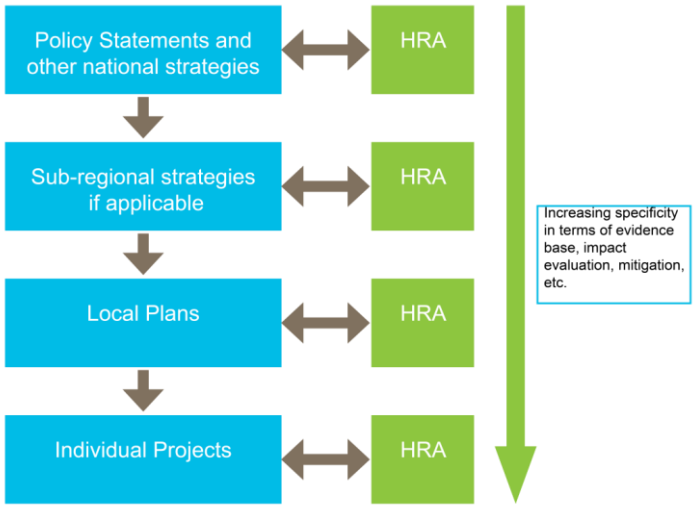

Figure 3: Tiering in HRA of land use plans.

2.10 On these occasions the advice of Advocate-General Kokott[7] 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].

2.11 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

2.12 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.

2.13 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)).

2.14 A 2018 decision by the European Court of Justice[8], 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.

[7] 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
[8] People Over Wind and Sweetman v Coillte Teoranta (C-323/17)

2.15 A more recent 2018 case[9] 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. Furthermore, habitats that are functionally linked to the Mersey Estuary SPA / Ramsar and its bird population are also considered.

HRA Task 3 – Avoidance and Mitigation

2.16 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.

2.17 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.

2.18 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'

2.19 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 Borough Local Plan 2020-2035: Submission Draft[10]
- Halton Delivery and Allocations Local Plan[11]
- Cheshire West and Chester Council Local Plan: Part One Strategic Policies (adopted in 2015[12])
- Cheshire West and Chester Council Local Plan: Part Two Land Allocation and Detailed Policies (adopted in 2019[13])
- Cheshire East Local Plan Strategy 2010-2030 (adopted 2017)[14]
- Trafford Local Plan: Core Strategy (Adopted 2012)[15]
- Publication Salford Local Plan 2015-2035[16]
- Wigan Local Plan Core Strategy (Adopted 2013)[17]

[9] Holohan et al vs. An Bord Pleanála (C-461/17)
[10] Available at: https://www.sthelens.gov.uk/localplan [Accessed on the 06/08/2021]
[11] The DALP was submitted for examination in March 2020, with hearing sessions undertaken in March 2021. Available at: https://www3.halton.gov.uk/Pages/planning/policyguidance/eip.aspx [Accessed on the 06/08/2021]
[12] Available at: http://consult.cheshirewestandchester.gov.uk/portal/cwc_ldf/adopted_cwac_lp/lp_1_adopted?tab=files [Accessed on the 06/08/2021]
[13] Available at: https://consult.cheshirewestandchester.gov.uk/portal/cwc_ldf/adopted_cwac_lp/parttwo_adopted [Accessed on the 06/08/2021]
[14] Available at: https://www.cheshireeast.gov.uk/planning/spatial_planning/cheshire_east_local_plan/local-plan-strategy/local_plan_strategy.aspx [Accessed on the 06/08/2021]. It is to be noted that a Site Allocations and Development Policies was submitted for examination in April 2021.
[15] Available at: https://www.trafford.gov.uk/planning/strategic-planning/docs/core-strategy-adopted-final.pdf [Accessed on the 06/08/2021]. It is to be noted that a new Trafford Local Plan is being developed, which is currently at Reg.18 stage.
[16] Available at: https://www.salford.gov.uk/media/394997/publication-salford-local-plan-slpdmp-jan-2020.pdf [Accessed on the 06/08/2021]. The publication version of the Salford Local Plan is currently being examined.
[17] Available at: https://www.wigan.gov.uk/docs/pdf/council/strategies-plans-and-policies/planning/adopted-core-strategy.pdf [Accessed on the 06/08/2021].

Internationally Designated Sites within and around Warrington Borough

2.20 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

2.21 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).

Features of European Interest[19]

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

- Degraded raised bogs still capable of natural regeneration.

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

[18] https://www.mangeogsoc.org.uk/egm/5_1.pdf [Accessed: 07/11/2018]
[19] http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0030200 [Accessed: 07/11/2018]

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

Conservation objectives

2.24 '*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

2.25 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

2.26 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

2.27 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

2.28 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.

2.29 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*
- Yellow-wort *Blackstonia perfoliata*
- Blue fleabane *Erigeron acris*
- Creeping willow *Salix repens*

[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]

Conservation objectives

2.30 *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

2.31 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].

2.32 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

2.33 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

2.34 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

2.35 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
- Water rail *Rallus aquaticus* - 6 individuals, representing an average of 1.3% of the GB population.

Conservation objectives

2.36 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:

[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]

- 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

2.37 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

2.38 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

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

2.40 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]

2.41 '*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;*

- *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*

[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 population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.*'

Historic trends and current pressures[29]

2.42 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*.

2.43 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

2.44 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

2.45 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

2.46 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

2.47 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

2.48 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.

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

Key environmental conditions

2.49 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) 2021; and
- Regulation 18 Submitted Sites.

3.2 Overall, these documents have identified the overall minimum requirement of 14,688 new homes (equating to 816 per year) to be delivered between 2021 and 2038. This is a net reduction in the total amount of housing planned for Warrington in earlier versions of the Local Plan. In addition, a total of 316ha of gross 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 14,688 new homes within Warrington cannot be solely allocated within existing urban areas. This has resulted in the requirement for additional land that is to be provided through Green Belt release.

3.4 This section presents an initial assessment of each policy for Warrington's Draft Local Plan (The Updated Proposed Submission Version Local Plan). Whilst undertaking screening for Warrington's Draft Local Plan policies it became evident 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 required in an 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

Loss of functionally-linked habitat

3.5 The closest allocated site (MD3 Fiddlers Ferry – comprising 1,310 new dwellings in the plan period (1,760 in total) and 101ha of employment land) is located approximately 4.9km from the Mersey Estuary SPA/Ramsar site at its closest. The vast majority of Warrington Borough (including most allocations) is located much more distant. However, the Cheshire Bird Atlas[30] identifies that some parts of the borough are utilised by qualifying features associated with the SPA/Ramsar site, particularly the area around Moore Nature Reserve south west of Warrington itself, including its lakes. Across the rest of the borough records of wintering or passage species for which Ribble & Alt Estuaries SPA/Ramsar site, Mersey Narrows & North Wirral Foreshore SPA/Ramsar site, or the Mersey Estuary SPA/Ramsar were designated, are very sparse. For example, records of wintering pink-footed goose are few and dispersed compared to the Liverpool City Region authorities. The exceptions are lapwing, which are widespread (although not necessarily abundant) on farmland, particularly improved grassland, across Cheshire and Wirral, redshank and golden plover (both of which are locally concentrated around the upper River Mersey west of Warrington.

Recreational pressure

3.6 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 recreation catchments for such sites.

Air quality

3.7 For air quality issues, all development proposals within the Warrington Draft Local Plan 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~~

[30] http://www.cheshireandwirralbirdatlas.org/ [accessed 11/06/2019]

~~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. For example, Rostherne Mere Ramsar site lies 170m from the A556 between M56 junction 8 and the A50 junction. However, this is not a significant commuter route for Warrington Borough and is very unlikely to be used on a daily basis for journeys to work by residents of the allocated sites (and thus contribute to an increase in AADT) as it heads south into rural Cheshire whereas the key employment locations for residents of Warrington travelling outside the borough are north, west and east in the Liverpool City Region and Greater Manchester. The Mersey Estuary SPA / Ramsar is situated in the neighbouring Borough of Halton and within the boundaries of the City of Liverpool. At its closest point, the SPA/Ramsar lies approx. 3.7km from the Warrington Borough boundary. 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, 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.

~~. 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-rich 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).~~

~~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*[31], which is far in excess of anything that would be deposited from atmosphere. For coastal saltmarshes such as those in the Mersey Estuary SPA/Ramsar, nitrogen inputs from air are not as important as nitrogen effects from other sources because the effect of any nitrogen deposition from the 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*'[32].' 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.~~

~~Furthermore, Natural England's Site Improvement Plan highlights that greater threats to the site integrity are the declines of designated seabirds and 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[33].~~

~~3.7~~

3.8 Traffic and air quality modelling were undertaken for this HRA and the analysis below follows the steps contained in the Natural England document 'Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations. Version: June 2018'. There are four stages to HRA screening using this methodology. These are set out below.

Screening Steps	Analysis
Step 1: Does the proposal give rise to emissions which are likely to reach a European site?	Growth in Warrington will result in an increase in traffic and Holcroft Moss lies within 200m of a significant route (M62) likely to be used by traffic originating in Warrington Borough. Therefore, the answer to step one is 'yes'.

~~[31] UK Air Pollution Information System website [Accessed 21/11/18]: http://www.apis.ac.uk/node/968~~
~~[32] APIS website [Accessed 21/11/18]: http://www.apis.ac.uk/node/968~~
~~[33] Burger, J. and Gochfeld, M., 2002. Effects of chemicals and pollution on seabirds. *Biology of marine birds*, pp.485-525.~~

Step 2: Are the qualifying features of sites within 200m of a road sensitive to air pollution?	According to habitat mapping on www.magic.gov.uk tThe nearest area of bog within the SAC is 6904m from the M62, so the answer to step 2 is also 'yes'. Aerial photography suggests the nearest area of bog is actually considerably further from the M62 but the habitat mapping has been used as being more precautionary.
Step 3: Could the sensitive qualifying features of the site be exposed to emissions?	While the area most affected by emissions is the belt of dense woodland closest to the M62, and while the presence of dense woodland between the M62 and the nearest area of bog may reduce the amount of pollution reaching that bog (since dense woodland intercepts a greater amount of nitrogen than other habitats due to its large surface area), it would not prevent pollution from reaching the bog. Therefore, the answer to step 3 is 'yes'.
Step 4a: Application of screening thresholds alone	There are two screening thresholds that are available: one is based on traffic flows (namely, whether or not the change in flows will fall below 1000 Annual Average Daily Traffic (AADT)) and the other is based on changes in pollutant concentrations (particularly whether or not the change in NOx concentrations or nitrogen deposition rate will fall below 1% of the critical load for the most sensitive habitat). Since the lowest part of the critical load range for bog is 5 kgN/ha/yr and the critical level for NOx is 30 μgm^{-3}, in this case that means whether the change will be less than 0.05 kgN/ha/yr for nitrogen or 0.3 μgm^{-3} for NOx. The change in flows due to the Warrington Local Plan alone would be 2,431 AADT. This exceeds the 1,000 AADT threshold. However, with regard to pollutant deposition, the change in NOx and nitrogen deposition at the closest area of bog due to the Warrington Local Plan alone would be 0.16 11 μgm^{-3} or 0.18 13 kgN/ha/yr. This is below 1% of the critical level for NOx (0.3 μgm^{-3}) but above 1% of the lowest part of the critical load range for bog (although much less than 1% of the upper part of the critical load range[34]). The UK Air Pollution Information System (APIS) website[35] notes that it is likely that the strongest effect of emissions of nitrogen oxides on vegetation is through their contribution to nitrogen deposition[36]. **Therefore, the Warrington Local Plan will have a likely significant effect on Manchester Mosses SAC when considered alone due to nitrogen deposition (the dose due to the Local Plan alone being 3.62.6% of the lowest part of the critical load range, which is small but not imperceptible).**
Step 4b: Application of the screening thresholds 'in combination'	The modelling forecasts that when all growth (including the Warrington Local Plan, surrounding Local Plans and the M62 Smarter Motorways scheme) is added, nitrogen deposition at

[34] APIS indicates that the high end of the range should be used with high precipitation or a high water table, and the low end of the range should be used with low precipitation and a low water table. The western UK has relatively high precipitation compared to the eastern UK but for the purposes of this analysis the lowest part of the range is used as a precaution.
[35] http://www.apis.ac.uk/overview/pollutants/overview_NOx.htm
[36] APIS identifies that direct effects of gaseous nitrogen oxides can also be important, but that negative effects of NO_2 in atmosphere (as distinct from its role in nitrogen deposition) are most likely to arise in the presence of equivalent concentrations of sulphur dioxide (SO_2). Vehicle exhausts do not emit SO_2 and APIS indicates that background SO_2 concentrations at the SAC are very low (a maximum of 2.6 μgm^{-3}) compared to critical levels for SO_2 of 10-20 μgm^{-3} and 2016 baseline NOx concentrations of 105 62 μgm^{-3} at c. 603m from the road. Since the SO_2 concentrations are so low no synergistic effect with NOx is expected.

the nearest area of bog habitat will increase by c.23 kgN/ha/yr or 460% of the critical load.

Therefore, a likely significant effect from all expected traffic growth 'in combination' cannot be dismissed and appropriate assessment is required.

Water quality

3.9 For changes in water quality due to surface water runoff, a precautionary zone of 1km was used for all development allocations and European Sites in order to take account of potential land-based runoff. In addition, Mersey Estuary SPA/Ramsar site has been included as it is hydrologically linked to Warrington Borough. This means that negative water quality impacts on Rixton Clay Pits SAC, Mersey Estuary SPA/Ramsar site and Manchester Mosses SAC were screened in for some new housing and employment sites.

Urbanization and great crest newts

~~3.9~~3.10 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.

Figure 4: Map of European sites within 10km of Warrington Borough, showing sites allocated in the Local Plan.

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*** • *2021-2038: minimum of 14,688 net new residential dwellings* ***Housing distribution*** • *11,785 houses: main urban area;* • *4,200 houses (minimum 2,400 within Plan period): South-East Warrington Urban Extension;* • *1,760 houses (minimum of 1,310 within the Plan period): Land at Fiddlers Ferry;* • *310 houses: Thelwall Heys; and* • *801 houses: Outlying settlements* o *Croft –75 homes;* o *Culcheth –200 homes;* o *Hollins Green –90 homes;* o *Lymm –306 homes; and* o *Winwick –130 homes.* ***Housing trajectory*** • *2021 - 2025 (first 5 years) – 678 homes per annum; and* • *2026 - 2038 (years 6 – 18) – 870 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** At least some of the residential, employment and retail development sites are located within the western half of Warrington and are sufficiently close to the SPA/Ramsar that 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 well as water quality impacts from some of the larger developments. Moreover, development locations in the western parts of Warrington could constitute functionally-linked habitat for birds for which the SPA is designated. 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

Policy	Brief description	Screening outcome
		significant effects to the site. Impact pathways of concern include recreational pressure. This policy is therefore screened in for Midland Meres & Mosses – Phase 1 Ramsar.
Policy DEV2 – Meeting 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 with a gross floor area greater than 1,000sq m, 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. Where 20% affordable housing provision is made within Inner Warrington and the Town Centre, half of the units should be for affordable housing for rent and half should be for affordable home ownership.'* ***Housing Type and Tenure*** '*11. Residential development should provide a mix of different housing sizes and types and should be informed by the Borough-wide housing mix monitoring target in the table below; the sub-area assessment contained in the Council's most up to date Local Housing Needs Assessment; and any local target set by a Neighbourhood Plan, taking into account site specific considerations.*' ***Optional Standards*** *'15. The Council will seek that, as a minimum, all homes should be provided to Building Regulation Standard M4(2) 'Accessible and Adaptable dwellings'.* *16. The Council will seek that 10% of new housing meets Building Regulation requirement M4(3)' Wheelchair user dwellings' i.e. designed to be wheelchair accessible, or easily adaptable for residents who are wheelchair users.'* ***Self and Custom Build*** *'20. 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 the other relevant policies in the Plan.'*	**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.
	Meeting Identified Need	**Rixton Clay Pits SAC**

Policy	Brief description	Screening outcome
Policy DEV3 – Gypsy & Traveller and Travelling Show People Provision	*1. The Council and its partners will work together to provide an adequate supply of sites for Gypsies and Travellers and Travelling Showpeople to meet identified needs.* *2. Provision will be made between 2021 and 2032 for a minimum of an additional:* *a. 2 permanent pitches for Gypsies and Travellers;* *b. 5 permanent plots for Travelling Showpeople; and* *c. 5-10 transit pitches for Gypsies and Travellers.* *3. The need for Gypsy & Traveller's and Travelling Showpeople for the remainder of the Plan period beyond 2032 will be assessed in a future review of the Local Plan.'* ***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.	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 lies 3km to the east of 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 if permanent plots / pitches were to be delivered along the eastern edge of Warrington Borough. **Mersey Estuary SPA/ Ramsar** The Mersey Estuary SPA/ Ramsar lies approx. 3.4km to the west of Warrington Borough and its 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 within western Warrington would raise issues with regards to ~~air quality,~~ water quality, recreational pressure and functionally linked habitats. **Midland Meres & Mosses – Phase 1 Ramsar** This Ramsar lies 3km to the east of 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 if permanent plots / pitches were to be delivered along the eastern edge of Warrington Borough.
Policy DEV4 - Economic Growth and Development	***Employment Land Requirement*** *'1. Over the 18 year Plan period from 2021 to 2038 provision will be made to meet the need for 316.26 hectares of employment land to support both local and wider strategic employment needs.'*	**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.

Policy	Brief description	Screening outcome
	Employment Land Distribution *'2. The Town Centre will provide the main location for new Class E Office development.* *3. The following Employment Areas will continue to be the primary locations for industrial, warehousing, offices, 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 allocated as new Employment Areas in order to provide sufficient land to meet Warrington's Employment Land Requirements:* *a. South East Warrington Employment Area – 137 hectares* *b. Fiddlers Ferry Power Station –101 hectares*	**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 approx. 5km from allocations at Fiddlers Ferry. This distance is within the average commuter distance travelled by employees and development may lead to likely significant effects to the SPA/Ramsar such as through impacts on functionally-linked land. **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
	5. Small scale office uses will be supported within District and Neighbourhood Centres and in the Lymm Neighbourhood Planning Area to meet identified local needs.' ***Proposals within Defined Employment Areas*** Additional requirements: • 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. ***Supporting the Local Economy*** *'13. 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. Warrington Town Centre 2. District Centres; 3. Neighbourhood Centres; ; 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***	**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 South-East Warrington Urban Extension retail and leisure allocation, which is the closest proposed allocation to the Ramsar site. 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
	• 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 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 from some of the development opportunities in 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 increased recreational pressures. Moreover, development locations in the western parts of Warrington could constitute functionally-linked habitat for birds for which the SPA is designated. 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 allocated South-East Warrington Urban Extension, which will provide for some of the retail and leisure development. 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*** *'3. The following land has been removed from the Green Belt and the amended Green Belt boundaries are shown in Figure 6:* *a. South East Warrington Urban Extension* *b. South East Warrington Employment Area* *c. Land to the east and south of Fiddlers Ferry Power Station* *d. Thelwall Heys* *e. Land at Warrington Waterfront* *f. Land at Croft* *g. Land at Culcheth* *h. Land at Hollins Green*	**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-east 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 recreational pressure. This policy is therefore screened in for Rostherne Mere Ramsar.

Policy	Brief description	Screening outcome
	i. Land at Lymm *j. Land at Winwick* ***Inset Settlements*** *4. The following settlements are Inset (that is excluded) from the Green Belt:* *a. Appleton Thorn* *b.Burtonwood* *c. Croft* *d. Culcheth* *e. Glazebury* *f. Hollins Green* *g. Lymm* *h. Oughtrington* *i. Winwick'* ***Green Belt Settlements*** *'7. The following are Green Belt settlements (that is washed over) within the Green Belt:* *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'* *8. Within these settlements development proposals will be subject to Green Belt policies set out in national planning policy. New build development may be appropriate where it can be demonstrated that the proposal constitutes limited infill development of*	**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 or employment development through Green Belt release (such as at MD3 – Fiddlers Ferry) could lead to likely significant effects on the integrity of the SPA/Ramsar. Impact pathways of concern include ~~air and~~ water quality and increased development and recreational pressures. Moreover, development locations in the western parts of Warrington could constitute functionally-linked habitat for birds for which the SPA is designated. This policy is screened in for Mersey Estuary SPA/ Ramsar.

Policy	Brief description	Screening outcome
	an appropriate scale, design and character, unless the infill break contributes to the character of the settlement. ***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'.* *12. 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.'*	
Policy TC1 – Town Centre and surrounding area	***Widening the role of the town centre*** *'1. The Council will support development in the Town Centre, as defined on the Polices Map, which strengthens its viability and vitality and promotes a greater diversity of uses, and in particular which:* *a. provides new homes;* *b. generates job growth, particularly high value jobs;* *c. adds to the provision and attractiveness of the Town Centre's office market;* *d. adds to the cultural and tourism provision on offer;* *e. supports existing, committed and planned public and private investment;* *f. increases the use of the Town Centre throughout the day and night;* *g. supports the town in its role as a regional transport gateway/interchange and improves linkages to it from the rest of the Borough and beyond especially by active travel modes and public transport.'* ***Key Development Sites in the Town Centre and surrounding areas*** *'3. The Council and its partners will support and promote comprehensive redevelopment and regeneration opportunities in accordance with the Town Centre Masterplan and the Warrington Town Centre SPD in the following areas which are identified on Fig 7:* *a. Time Square and the Cultural Quarter (including Bridge Street) for an increase in town centre living, commercial development including a new hotel and leisure uses;*	**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 within 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. Development locations in the western parts of Warrington could constitute functionally-linked habitat for birds for which the SPA is designated. This policy is screened in for Mersey Estuary SPA/ Ramsar.

Policy	Brief description	Screening outcome
	b. *The Stadium Quarter for significantly increase the residential offer, whilst enhancing the commercial/office provision and improving the cohesion of the public realm;* c. *c. The Southern Gateway for the creation of high quality residential development, together with a new mixed use commercial area containing landmark buildings fronting on to the River Mersey at Bridgefoot/St James Church;* d. *d. Bank Quay Gateway for the creation of an enhanced transport hub focused around Bank Quay Station, supported by a mixture of uses including hotels, hospitality, offices and residential where it can be ensured that amenity standards can be met for new and existing residents;* e. *e. Eastern Gateway (including Cockhedge/St Mary's Quarter/St Elphin's Quarter/Thorneycroft) for the creation of new residential areas with supporting retail and commercial uses;* f. *f. Warrington Waterfront/Southern Gateway Opportunity Area for the creation of a new riverside park and a new residential neighbourhood containing a variety of open space typologies that are within easy access of the town centre.'* ***Optimising the Town Centre's development potential*** *'5. New residential development should aim to achieve the minimum densities specified in Policy DEV1 subject to complying with the requirements of the Warrington Town Centre SPD.* *6. There are opportunities for taller buildings at gateway sites to the Town Centre and along the A49 strategic corridor, as identified the Warrington Town Centre SPD subject to:* *a. ensuring outstanding design architectural quality;* *b. a detailed contextual analysis and strong design rationale;* *c. enhancement of the public realm; and* *c. a detailed understanding and mitigation of any impacts on heritage assets, environmental quality and residential amenity.'* ***Improving the Town Centre's Environment*** *'7. All development within the Town Centre should comply with the guidance contained within the Warrington Town Centre SPD and should, where appropriate:* *a. ensure heritage values and assets are sustained and enhanced;*	**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	Brief description	Screening outcome
	b. enhance the public realm and the environmental quality of the wider area; *c. create a vibrant and active street scene – through active ground floor street frontages and the provision of street cafes;* *d. pay particular attention to key transport routes into the Town Centre to ensure development contributes to a sense of arrival and ease of movement around the centre; and* *e. contribute to sustainable travel initiatives identified in the proposed Town Centre Area Travel Plan/Local Transport Plan.'*	
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; • 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.	**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 is not considered 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 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.~~ **No Likely Significant Effect** It is acknowledged that the Warrington Western Link project, and indeed any of the schemes identified in this policy, could result in losses of functionally-linked land or other impacts on European sites that would require mitigating and we are happy to clarify that in the HRA. However, Policy INF2 (which is what is being assessed in the Local Plan HRA) is a safeguarding policy only. It is not the place for a Local Plan to make an allocation for a road scheme as there is a separate Local Transport Plan process for that, and Warrington Council may well not be the consenting authority for at least some of these schemes. This is why the policy safeguards land rather than makes allocations. Safeguarding

Policy	Brief description	Screening outcome
		policies are intended to ensure parcels of land are not sterilised due to inappropriate conflicting development but do not make allocations and do not pre-judge the results of planning applications. The act of safeguarding an area of land to prevent it being subject to certain types of development would not pose any risk to European sites.
Policy INF3 – Utilities and Telecommunications	***General Principles - All Utilities*** *'1. All development proposals must demonstrate that engagement has taken place with 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, these include:* *a. Water;* *b. Sewerage and surface water drainage;*	**No likely significant effect** This policy ensures that all new development within Warrington accounts for water, sewage and surface water drainage, gas, electricity and telecommunications. This policy does not allocate 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	Brief description	Screening outcome
	c. Gas; *d. Electricity; and* *e. Telecommunications including Broadband.'* *'3. Developers will be required to work with the Council and appropriate providers to deliver the necessary physical infrastructure and networks as an integral part of all new developments, taking into account the need to 'future proof' development to accommodate emerging technologies. Developers will be required to show early dialogue between developers and infrastructure providers to identify the infrastructure needs arising from new development and ensure that these are addressed through building design, utility networks and connections in time to serve the proposed development.* *4. On large development sites or sites developed on a phased basis, applicants will be required to ensure that the delivery of development is guided by site wide strategies for infrastructure (e.g. foul, surface water and clean water) which ensure coordination between phases of development over lengthy time periods and by numerous developers. Conditions or planning obligations may be used to secure these phasing arrangements.'*	
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. (See Policy DEV5 Retail and Leisure Needs).'* ***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, it 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	Brief description	Screening outcome
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 INF6 – Aerodrome Safeguarding (Manchester Airport)	*'Development that would adversely affect the operational integrity or safety of Manchester Airport or Manchester Radar will not be permitted.'*	**No likely significant effects** This policy stipulates that development potentially affecting the operational integrity of the Manchester Airport or Manchester Radar will not be permitted. 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 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. ***The Town Centre*** The Council provides additional guidance on the design of new properties and the conversion of existing town centre uses in the Town Centre Supplementary Planning Document. Proposals in the town centre must meet these criteria. ***Suburban Warrington*** The Council seek to protect residential amenity and ensure new development is in keeping with its established surroundings.	**No likely significant effects** This policy safeguards important areas within Warrington. Many of these areas are protected from development that would diminish them. 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
	Warrington's Circular Parklands The circular parklands enveloping the inner Warrington area will be preserved. Opportunities to enhance the connectivity of the parkland (such as for sustainable travel modes) will be supported. ***Countryside and Settlements*** Protect settlements in the countryside from major development, whilst allowing appropriate and sustainable development that can be supported by existing services and infrastructure, and protecting the Green Belt and Green Belt settlements from inappropriate development. ***Warrington's Visitor Attractions*** *Town Centre* *11. 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.(See policy TC1).* *Victoria Park* *12. The Council and its partners will look to preserve and enhance the unique characteristics of Victoria Park.* *Walton Hall Estate* *15. Development proposals at Walton Hall Estate will be supported where they:* *a. Preserve or enhance public access to the Estate;* *b. Preserve or enhance the primary function of the Estate as a sport, recreation, leisure and hospitality destination;* *c. Do not conflict with the tranquil setting of the Gardens;* *d. Are not detrimental to the historic environment;* *e. Re-use existing facilities and buildings where possible and appropriate; and* *f. Improve the quality and range of amenities to diversify interest for visitors.* *g. Preserve and enhance the historic interest of the park and historic assets within it.* *Gulliver's World*	

Policy	Brief description	Screening outcome
	18. The Council will continue to support the operation of Gulliver's World as a successful regional attraction. ***Neighbourhood Plans*** *20. 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.*	
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 will give particular consideration to safeguarding include: • 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 riversides, museums, libraries, art galleries, public art, food and drink, customs and traditions).	**No likely significant effect** This is a positive policy safeguarding historical, conservation and landscapes that are by default of historic 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 DC3 – Green Infrastructure	***Strategic Green Infrastructure*** *'1. The Council, in partnership with other agencies and stakeholders will adopt a strategic approach to the care and management of the Borough's green infrastructure and seek to protect, enhance and extend the multifunctional network in order to maintain and develop the wider public health, active travel, flood management, climate change, ecological and economic benefits it provides.'* ***Green Infrastructure Opportunities*** *'2. 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;*	**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
	c. The Bridgewater Canal; *d. The River Bollin; and* *e. The Transpennine Trail;* *'3. The Council is committed to supporting wider programmes and initiatives which seek to connect the Borough's Strategic Green Infrastructure assets with residential communities, employment areas and other green infrastructure assets both within and outside of the Borough, including:* *a. Great Manchester Wetlands Nature Improvement Area;* *b. Bold Forest Park;* *c. Walton Hall Estate;* *d. The Mersey Forest;* *e. Circular Parklands; and* *f. The River Mersey frontage where it passes through the Town Centre.* *4. The Council will work with partners to strengthen and expand the network of ecological sites, corridors and stepping stone habitats to:* *a. secure a net gain in biodiversity;* *b. to expand tree cover in appropriate locations across the Borough;* *c. to improve landscape character, water and air quality;* *d. to help adapt to flood risk and mitigate the impacts of climate change;* *e. to contribute to the development of the Mersey Forest;* *f. to contribute to the wider regional nature recovery network of wetland sites by enhancing the wetlands across Warrington.'; and* *g. to support the retention of underused farmland for habitat creation and management.* ***Development Proposals affecting Green Infrastructure*** *'5. All development proposals should, as appropriate to their nature and scale:* *a. protect existing green infrastructure and the functions it performs, especially where this helps to mitigate the causes of and addresses the impacts of climate change:* *b. increase the functionality of existing and planned green infrastructure especially where this helps to mitigate the causes of and addresses the impacts of climate change;*	

Policy	Brief description	Screening outcome
	c. improve the quality of existing green infrastructure, including local networks and corridors, specifically to increase its attractiveness as a sport, leisure and recreation opportunity and its value as a habitat for biodiversity; *d. protect and improve access to and connectivity between existing and planned green infrastructure to develop a continuous right of way and greenway network and integrated ecological system/network;* *e. secure new green infrastructure in order to cater for anticipated increases in demand arising from development particularly in areas where there are existing deficiencies assessed against standards set by the Council in accordance with Policy DC5; and* *f. provide long-term management arrangements for new and enhanced green infrastructure within development sites.'*	
Policy DC4 - Ecological Network	*1. The Council will work with partners to protect and where possible secure a net gain for biodiversity and enhance public access to nature across the Plan area. 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/Natural Improvement 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, 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 population, including:* *a. Equipped play areas* *b. Informal play areas* *c. Parks & Gardens* *d. Natural/Semi-natural greenspaces* *e. Allotments*	**No likely significant effect** This policy encourages residential development to provide outside space for recreational/ leisure activities as well as indoor sport and recreation facilities. In addition, it seeks to protect existing open space, sport and recreation facilities. However, the policy does not allocate 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	Brief description	Screening outcome
	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. The amount, type and form of open space and equipped play provision will be determined having regard to the open space standards and the quantity, quality and accessibility of existing provision as specified in the most up-to-date versions of the Council's Open Space Audit and Planning Obligations SPD.* ** The requirement to provide equipped play provision only applies to family accommodation (ie. two bedrooms or more).* *Any development within the town centre (as defined in the Town Centre SPD) where it can be demonstrated that it is not possible to provide any or adequate on-site provision will be expected to make a financial contribution towards off-site provision/enhancements to open space elsewhere in the town centre in accordance with the requirements of the Council's Town Centre and Planning Obligations SPD's.'* ***Indoor Sport and Recreation Facilities*** *6. All residential development proposals of 40 dwelling units or more will be required to make provision for indoor sport and recreation facilities, where existing facilities have insufficient capacity to serve the increase in population arising from the development. The amount, type and form of facility provision will be determined having regard to the nature and size of development proposed and the community needs likely to be generated by it. In most instances the scale of development will not be sufficient to require on-site provision and financial contributions will be sought towards new provision or enhancement of existing facilities off site taking into account the requirements of the most up-to-date Sports Facilities Strategic Needs Assessment and associated Action Plan.* ***Protection of Open Space, Sport and Recreation Facilities*** *7. The Council will not permit development likely to result in an unacceptable loss of existing open space, sport or recreation facilities for non-recreation purposes unless it can be demonstrated that it meets one of exceptions listed in paragraph 99 of the NPPF.*	

Policy	Brief description	Screening outcome
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, but 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 environmentally friendly 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 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 amount 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, but 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 place, preventing a reduction of water quality and associated 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 within MSAs if it can be demonstrated that: the mineral is not of economic value or extraction is not physically viable, other forms of development override the need for mineral	**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
	resources or that the mineral can be extracted satisfactorily prior to the non-minerals development taking Place. • Planning applications for development within the mineral safeguarded areas as defined on the Policies Map 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. Existing minerals infrastructure is identified on the Policies Map (and in Fig. 15). Planning permission will only be granted for development that is incompatible with safeguarded minerals transportation, handling or processing facilities, both existing and new (including above ground infrastructure associated with energy mineral exploration and production) where certain criteria can be met…'*	

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 within the MSAs identified on the Policies Map will be permitted where:* *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. Planning permission will be permitted for the extraction of aggregates outside Mineral Safeguarding Areas provided that:* *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 Areas.* ***Non-Aggregates*** *'3. Proposals for the development of non-aggregate minerals will be permitted provided that:* *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, including:* *a. borrow pits to meet a specific demand not easily met from elsewhere;* *b. building stone quarries, including their need for stone to match the conservation and repair of heritage assets and also for local vernacular building;*	~~**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.~~ **No Likely Significant Effect** Individual exploration and appraisal operations could result in likely significant effects on European sites depending on where they are located, the details of the minerals extraction or processing procedure, and whether they would constitute a net increase in the extent of minerals extraction or are only intended to extend the operational life of the minerals activity. However, the policy does not allocate any sites or specify the minerals activities involved (since that will be determined by the market) but only identifies broad areas of search (Minerals Safeguarding Areas) within which proposals that would prevent minerals development are not supported, although it does not prohibit minerals activity outside those areas. In all cases the policy requires that 'The proposal accords with all other policies of the

c. areas already subject to minerals extraction where the additional working will enable comprehensive exploitation of the reserves, or where the proposal achieves a more sustainable afteruse or a better restoration of the area.'	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'. Individual minerals proposals would need to be subject to HRA as they came forward.

Policy	Brief description	Screening outcome
Policy ENV5 – Energy Minerals	Developments for the exploration and appraisal of hydrocarbons, commercial exploitation of hydrocarbons and coal 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 • 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.	~~**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.~~ ~~**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.~~ **No Likely Significant Effect** Individual exploration and appraisal operations could result in likely significant effects on European sites depending on where they are located, the details of the minerals extraction or processing procedure, and whether they would constitute a net increase in the extent of minerals extraction or are only intended to extend the operational life of the minerals activity. However, the policy does not allocate any sites or specify the minerals activities involved (since that will be determined by the market). In all cases the policy requires that the proposed location is the most suitable, taking account of

Policy	Brief description	Screening outcome
		environmental considerations. Individual minerals proposals would need to be subject to HRA as they came forward.
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. This should include the following:* *a. Details of the final restoration scheme and proposed future land use;* *b. Details of timescales for completion of restoration including details of completion of individual phases of restoration where a progressive restoration scheme is proposed;* *c. Details of aftercare arrangements that are to be put in place to ensure the maintenance and management of the site once restoration is complete; and* *d. Details of community liaison measures to be put in place during the operation of the site including mineral extraction (and/or landfilling/landraising), restoration and final land use.* *2. In defining the future land use for the site, restoration should be geared towards improvement of final land use and should:* *a. Demonstrate to the satisfaction of the Local Planning Authority that the proposal is in accordance with all other policies of the Local Plan in relation to the protection of the environment, flood risk, public amenity and sustainable transport;* *b. Take account of the pre-working character of the site and its landscape setting where appropriate; and* *c. Where land is to be restored for agricultural or forestry, use appropriate restoration techniques to ensure that the land is capable of supporting such uses in the long term.'*	**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, store and/or distribute low carbon or renewable energy will be permitted provided that 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.~~ **No Likely Significant Effect** Individual renewable energy proposals could result in likely significant effects on European sites depending on where they are located and the details of the proposal. However, the policy does not allocate any sites or specify the type of renewable energy development involved and it is clear any proposals must comply with other plan policies including those regarding protection of the environment. Individual renewable energy proposals would need to be subject to HRA as they came forward.
Policy ENV8 - Environmental	***General Principles***	**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

Policy	Brief description	Screening outcome
and Amenity Protection	*'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 their operation.'*	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 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 1,335 new homes of which 1,070 will be delivered in the plan period.'* *'3. The new residential development will be supported by the following range of infrastructure:* *a. A range of housing tenures, types and sizes, including affordable homes and a residential care home (Use Class C2) providing a minimum of 80 bedrooms.* *b. A two form entry primary school* *c. A mixed use local centre providing* *a health facility and* *a local shops and community facilities of an appropriate scale.* *e. Provision of public open space, including a range of smaller areas of open space within the residential development to serve the new community in accordance with the Council's open space standards.* *f. Provision of playing pitches (either on-site or a contribution towards off-site provision).* *g. A comprehensive package of transport improvements including supported bus services.* *h. A contribution towards additional secondary school places* *i. A contribution towards built leisure facilities* *j. A contribution towards strategic transport infrastructure (The Western Link)* *k. Landscape buffers and ecological mitigation and enhancement* *l. Flood mitigation and drainage including exemplary sustainable drainage systems (SuDS) with only foul flows connecting to the existing public sewer.'*	**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 an increase in the number of homes could lead to likely significant effects to the integrity of the SPA/Ramsar. Impact pathways of concern include recreational pressures and water quality. Moreover, development locations in the western parts of Warrington could constitute functionally-linked habitat for birds for which the SPA is designated. 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

Policy	Brief description	Screening outcome
		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 – South-East Warrington Urban Extension	***MD2.1 Key Land Use and Infrastructure Requirements*** *'1. Land to the south east of Warrington, extending from Grappenhall Heys in the north, to the M56 in the south, as defined on the Proposals Map, will be removed from the Green Belt and allocated as the South East Warrington Urban Extension.* *2. The South East Warrington Urban Extension will deliver approximately 4,200 homes in total of which around 2,400 homes will be delivered within the Plan Period.* *3. The Urban Extension will be supported by a wide range of infrastructure as follows:* *a. A range of housing tenures, types and sizes, including affordable homes, custom and self-build plots and supported and extra care housing.* *b. Two 2 form entry primary schools, capable of expansion to 3 forms of entry* *c. A new secondary school to provide a minimum of 4 forms of entry.* *d. A new leisure facility incorporating health provision.* *e. Local shops and other community facilities of an appropriate scale.* *f. An extensive green infrastructure network.* *g. Playing pitches.* *h. A range of smaller areas of open space within the residential development to serve the new community.* *i. A Community Recycling Centre.* *j. A comprehensive package of transport improvements, for both on-site and off-site works.* *k. Compensatory green belt improvements and ecological mitigation and enhancement.* *l. Flood mitigation and drainage including exemplary sustainable drainage systems (SuDS).'*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that increased development in the South-East Warrington Urban Extension 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 in the South-East Warrington Urban Extension 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 South-East Warrington Urban Extension 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 South-East Warrington Urban Extension 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 through most impact pathways. However, a brook does flow adjacent to the development area which connects to the River Mersey via the Manchester Ship Canal. This site is therefore screened ~~out from~~in for further analysis regarding water quality. **Midland Meres & Mosses – Phase 1 Ramsar** Midland Meres & Mosses – Phase 1 Ramsar is located over 9km from the proposed South-East Warrington Urban Extension 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

Policy	Brief description	Screening outcome
		other plans and projects. This site is therefore screened out from further analysis.
Policy MD3 – Fiddlers Ferry	***MD3.1 Key Land Use and Infrastructure Requirements*** *'1. Land at the former Fiddlers Ferry Power Station site will be allocated to deliver a mixed-use development comprising approximately 101ha of employment land and a minimum of 1,760 new homes, of which 1,310 homes will be delivered in the plan period.* *2. The allocation will include the removal of 82 ha of land from the Green Belt to accommodate a minimum of 860 new homes on land to the north of the railway line and a further 900 homes to the south of the railway line (450 homes in the plan period).* *3. The allocation will be supported by the following range of infrastructure:* *a. A range of housing tenures, types and sizes, including affordable homes, custom and self-build plots and supported and extra care housing.* *b. A new 1 form entry primary school, with room for expansion to 2 forms of entry.* *c. Local shops and other community facilities of an appropriate scale.* *d. Space within the development for a potential branch GP surgery.* *e. A contribution towards additional secondary school places.* *f. A contribution towards built leisure facilities.* *g. Three new parks and an extensive green infrastructure network.* *h. A range of smaller areas of open space within the residential development to serve the new community.* *i. Playing pitches.* *j. A comprehensive package of transport improvements.* *k. Compensatory green belt improvements and ecological mitigation and enhancement.* *l. Flood mitigation and drainage including exemplary sustainable drainage systems (SuDS).'*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that increased housing development on the Fiddlers Ferry allocation 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 pressure. **Manchester Mosses SAC** Since the Manchester Mosses SAC is located within Warrington there is the possibility that increased housing development on the Fiddlers Ferry allocation 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 18km from the proposed Fiddlers Ferry 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 3.6km to the west of the Fiddlers Ferry development area. This distance is sufficiently close to the proposed development site that likely significant effects could arise due to increased recreational ~~pressure~~pressure, water quality, and air quality. Moreover, development locations in the western parts of Warrington could constitute functionally-linked habitat for birds for which the SPA is designated. This site is therefore screened in for further analysis. **Midland Meres & Mosses – Phase 1 Ramsar** Midland Meres & Mosses – Phase 1 Ramsar is located over 18km from the proposed Fiddlers Ferry 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***	**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 for increased housing

Policy	Brief description	Screening outcome
	'1. Land comprising approximately 69 hectares at Peel Hall will be allocated to deliver a new sustainable community of up to 1200 new homes, supported by the following range of infrastructure: *a. A range of housing tenures, types and sizes, including affordable homes, custom and self-build plots and a residential care home (Use Class C2)* *b. A one form entry Primary School with additional operational land to allow the expansion to a two form entry Primary School;* *c. A further contribution to provide an additional half form entry of primary school capacity off-site;* *d. A mixed use Local Centre providing a range of units within Use Classes A1, A2, A5, and D1;* *e. Junction improvements and new highway connections linking the development to the Local Road Network, and highway works to the Strategic Road Network, as agreed by the Council and Highways England;* *f. Providing bus priority features such as bus gates to ensure that the internal site layout allows efficient servicing by bus services with good access to key facilities and direct links to the external network;* *g. An internal cycling and walking network (with links to the external network) which helps to create accessible neighbourhoods which minimises the need to drive to key facilities such as shops and schools;* *h. The provision of a Sustainable Drainage System (SuDS), in accordance with the Council's adopted (or subsequent updated guidance) Sustainable Drainage Systems (SuDS) Design and Technical Guidance (December 2017);* *i. A contribution towards additional secondary school places;* *j. A contribution to 'off site' Health Care provision within the defined catchment area of the site;* *k. A contribution to deliver bus services to connect to the development to the Town Centre and other key destinations;* *l. Provision of a comprehensive network of open spaces within the development to serve the new community and the wider north Warrington area in accordance with the Council's open space standards; and* *m. The provision new sports pitches and ancillary changing facilities, including the relocation of existing pitches at Mill Lane.'*	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 at Peel Hall for increased housing 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 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 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 MD5 – Thelwall Heys	*'1. Land to the east of Grappenhall and south of Thelwall will be removed from the Green Belt and allocated for residential development for a minimum of 300 homes.'*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the allocation of Thelwall Heys for housing development (approx. 6.1km from the SAC) could lead to likely significant effects on the

Policy	Brief description	Screening outcome
	Utilities and Environmental Protection *19. A site-wide surface water strategy is required, incorporating appropriate Sustainable Urban Drainage Systems (SUDS) and flood alleviation measures.* *20. Improvements to the water supply and sewerage network will be required, ensuring that surface water drainage is not combined with foul discharge.* *21. The development should be designed to mitigate the impacts of climate change; be as energy efficient as possible and seek to meet a proportion of its energy needs from renewable or low carbon sources in accordance with Policy ENV7.*	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 Thelwall Heys for housing development (approx. 5.9km from the SAC) could lead to likely significant effects on 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 10km from the proposed allocation Thelwall Heys. 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 13km west of Thelwall Heys. 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 screened out from further analysis. **Midland Meres & Mosses – Phase 1 Ramsar** Midland Meres & Mosses – Phase 1 Ramsar is located over 9km from the Thelwall Heys allocation. 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 MD5 – The South East Warrington Employment Area	***MD6.1 Key Land Use and Infrastructure Requirements*** *'1. The South East Warrington Employment Area, situated at the junction of the M6 and M56 will be removed from the Green Belt and allocated for employment development to deliver around 137 hectares of employment land to meet strategic and local employment needs.* *2. The employment land is allocated for distribution and industrial uses (B8 and B2).'*	**Rixton Clay Pits SAC** Since the Rixton Clay Pits SAC is located within Warrington there is the possibility that the South East Warrington Employment Area (approx. 6.5km from the SAC) could lead to likely significant effects on 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 South East Warrington Employment Area (approx. 6.7km from the SAC) could lead to likely significant effects on the SAC. This policy is

Policy	Brief description	Screening outcome
	'9. If habitats within the allocation site or on adjacent land are suitable to support significant populations of wildlife, avoidance measures and mitigation will be required and any planning application may need to be assessed through project specific Habitats Regulations Assessment.'	screened in for the SAC due to issues associated with air quality and increased recreation.
		Rostherne Mere Ramsar Rostherne Mere Ramsar is located over 8km from the proposed South East Warrington Employment 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 over 13km west of the South East Warrington Employment Area. 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 screened out from further analysis.
		Midland Meres & Mosses – Phase 1 Ramsar Midland Meres & Mosses – Phase 1 Ramsar is located over 8km from the South East Warrington Employment 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 OS1 – Croft	*'1. Land to the north east of Croft (inset settlement) 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

Policy	Brief description	Screening outcome
		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 OS2 – Culcheth	*'1. Land to the east of Culcheth (inset settlement) 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 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

Policy	Brief description	Screening outcome
		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 OS3 – Hollins Green	*'1. Land to the southwest of Hollins Green (inset settlement) 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 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

Policy	Brief description	Screening outcome
		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 OS4 – Lymm (Pool Lane and 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 170 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 Pool Lane and Warrington Road, Lymm for residential development could lead to likely significant effects on 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 and Warrington Road, Lymm for residential development could lead to likely significant effects on 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 7km from the proposed allocation of land at Pool Lane and 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.
		Mersey Estuary SPA/ Ramsar The Mersey Estuary SPA/ Ramsar is located over 16km west from land at Pool Lane and 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 8km from the proposed allocation of land at Pool Lane and 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

Policy	Brief description	Screening outcome
		effects alone or in combination with other plans and projects. This site is therefore screened out from further analysis.
Policy OS5 – Lymm (Rushgreen Road)	*'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 136 homes and a new health facility.'* *'8. Development will be required to provide a new primary health care facility of a minimum of 1,500 sq.m.'*	**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 on 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 Rushgreen Road, Lymm for residential development could lead to likely significant effects on 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 7km 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 16km 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 Midland Meres & Mosses – Phase 1 Ramsar is located over 8km from the proposed allocation of Land at Rushgreen Road / Tanyard Farm, 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 – Land to the	*'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

Policy	Brief description	Screening outcome
north of Winwick		development could lead to likely significant effects on 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 on 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:

- The loss of functionally linked habitat (relating to the Mersey Estuary SPA / Ramsar and the wider network of SPAs in north-west England);
- 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);
- Disturbance in functionally linked habitat due to an increase in recreational activities (in relation to the Mersey Estuary SPA / Ramsar);
- 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); and
- The threat of urbanisation to 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.

Loss of functionally-linked habitat

4.3 Paragraphs 4.4 to 4.15 discuss the potential for losses of functionally linked land due to development on all sites considered to potentially support functionally-linked land. Therefore, they have all been considered cumulatively and in combination. The determination of whether a parcel of land is likely to constitute significant functionally-linked habitat utilises a '1% of the SPA population' threshold specifically in order to capture the fact that, while 1% of the population is a small percentage, cumulative losses of land parcels supporting 1% of the population can be significant 'in combination'. It also makes reference to a recent report from Natural England regarding functionally-linked land in north-west England.

~~4.3~~4.4 With regard to the loss of functionally linked habitat, the two closest allocations (MD1 – Warrington Waterfront and MD3 – Fiddlers Ferry), and the ones posing the highest potential risk, are located approximately 6km and 4.9km respectively from the Mersey Estuary SPA/Ramsar site. The vast majority of Warrington Borough is located much more distant. However, the Cheshire Bird Atlas[37] identifies that some parts of the borough are utilised by interest features associated with the SPA/Ramsar site, particularly the area around Moore Nature Reserve south west of Warrington itself, including its lakes. Across the rest of the borough records of wintering or passage species for which Ribble & Alt Estuaries SPA/Ramsar site, Mersey Narrows & North Wirral Foreshore SPA/Ramsar site, or the Mersey Estuary SPA/Ramsar were designated are very sparse; records of wintering pink-footed goose are few and dispersed in contrast to the Liverpool City Region authorities. The exceptions are lapwing, which is widespread (although not necessarily abundant) on farmland, particularly improved grassland, across Cheshire and Wirral, and redshank and golden plover which have local concentrations around the upper River Mersey west of Warrington.

~~4.4~~4.5 Any loss of functionally linked habitat that supports a significant population of designated SPA birds on a regular basis may result in an adverse effect on the SPA and Ramsar site features if unmitigated. The development sites most likely to coincide with significant wintering/passage populations of SPA birds are MD1 (Warrington Waterfront) and MD3 (Fiddlers Ferry), both lying close to the River Mersey south-west of Warrington. Warrington Waterfront lies close to Moore Nature Reserve which is known to be a significant area for wintering gulls, waterfowl, and waders, while Fiddlers Ferry has a number of lagoons within the

[37] http://www.cheshireandwirralbirdatlas.org/ [accessed 11/06/2019]

allocation site that would be adjacent to the proposed areas of residential development. The layout of the Warrington Waterfront development avoids the key areas for these species as indicated by the Cheshire Bird Atlas, which are mostly further west. Notwithstanding this, further data on the importance of the wider Warrington Waterfront area for overwintering SPA / Ramsar birds are discussed hereafter.

4.54.6 The developer of the Warrington Waterfront allocation, as proposed in the previous version of the proposed submission version Local Plan (2019), commissioned TEP to undertake breeding and overwintering bird surveys within the proposed site boundary, specifically focussing on the Port Warrington area of the allocation. The data showed that the development proposal as it stood at that time would result in the loss of a waterbody that supports teal, although at numbers below 1% of the SPA / Ramsar population. The waterbody proposed for removal only supported approx. 0.1-0.2% of the current estimated SPA / Ramsar teal population. It was also noted that teal are found across the entire Moore Nature Reserve, with several other waterbodies providing suitable habitat. A large section of the nature reserve was to be retained in the Arpley Meadows Country Park. It was concluded that regarding the loss of functionally linked habitat the Warrington Waterfront proposal was unlikely to result in significant effects, despite the loss of the aforementioned waterbody. The Waterfront allocation has been revised for this latest version of the Local Plan and now only includes the residential elements that lie to the east of the proposed Western Link Road route. Therefore, any residual risk of functionally linked habitat loss is ~~now also removed~~reduced, although not entirely removed (pending further surveys for any planning application).

4.64.7 The Fiddlers Ferry allocation lies directly north of the Mersey Estuary SPA / Ramsar, comprising what appear to be three relatively large agricultural fields that are to be released from the Green Belt. The close proximity to the River Mersey, Widnes Warth Saltmarsh Local Wildlife Site (LWS) and the Upper Mersey Estuary Intertidal Areas and Mudflats LWS, Norton Marsh and Upper Moss Side Fields LWS and Moore Nature Reserve LWS is likely to be one of the main reasons why all qualifying species (i.e. shelduck, teal, pintail, golden plover, dunlin, black-tailed godwit and redshank) of the SPA / Ramsar have been recorded in the tetrad encompassing this allocation. However, most of these species are tightly associated with aquatic feeding habitats and are unlikely to rely on agricultural land, unless freshwater habitats are found on site. However, golden plover, a species that moves from its upland breeding grounds to over-winter in low-lying countryside, is strongly dependent on agricultural foraging grounds. Black-tailed godwit may also supplement their diet with earthworms and other invertebrates found in non-estuarine habitats. A Preliminary Ecological Appraisal undertaken by Arcadis in January 2021 in support of the proposed demolition of the Fiddlers Ferry Power Station[38], confirmed the presence of various habitats on site, including unimproved neutral grassland, swamp, standing water, saltmarsh and arable fields. The report also specifies that shelduck, teal and redshank are supported within the lagoons of the site. It concludes that the site has potential functional linkage to the Mersey Estuary SPA / Ramsar. This is reinforced by the identification of the area around Fiddlers Ferry as being of 'moderate functionally-linked land potential – visited by significant numbers of birds' in Appendix 4 of Natural England's recently published report on functionally-linked land in north-west England[39]. Given the current evidence base, it is concluded that further wintering bird data is required as part of the policy requirement for the allocation of this site in the Warrington Local Plan[40].

4.74.8 It is noted that Policies MD1 (Warrington Waterfront) and MD3 (Fiddlers Ferry) both contain specific policy wording regarding the protection of the Mersey Estuary SPA / Ramsar and the ecological settings surrounding the site allocations. For example, Policy MD1 states that the planning application will require '*evidence that the development will not have adverse impacts on the integrity of the Mersey Estuary Special Protection Area; and have regard to sites identified in policy DC4 (Ecological Network) which should be protected...*' The policy goes on to stipulate that '*25. Site surveys will be required as specified by Policy DC4 to assess habitats and their suitability to support significant wildlife populations. If habitats within the site or on adjacent land are suitable to support significant populations of wildlife, avoidance measures and mitigation will be required and any planning application may need to be assessed through a project specific Habitats Regulations Assessment.*' Similar protective policy wording is included in the text for Policy MD3.

[38] The report is available on the Council website as part of planning application 2021/38558. Available at: https://planning.warrington.gov.uk/swiftlg/apas/run/WPHAPPCRITERIA [Accessed on the 06/08/2021]

[39] Bowland Ecology 2021. Identification of Functionally Linked Land supporting SPA waterbirds in the North West of England. NERC361. Natural England

[40] The current proposals within the Fiddler's Ferry Power Station Regeneration Vision supporting document include plans for a new visitor centre and the use of the lagoons for leisure. However, the policy does not identify the delivery of a new visitor centre or the use of the lagoons for leisure and if these proposals were retained in any planning application and were deemed by development control to result in unacceptable impacts on the role of the wider site as functionally-linked land then they would be explicitly contrary to point 24 of Policy MD3 which states that '*In accordance with Policy DC4 development within the allocation site will be required to evidence that it will not have any adverse impacts on the integrity of the Mersey Estuary Special Protection Area'.*

It is considered that this policy wording is sufficiently protective to allow a conclusion of 'no adverse effect' at the plan level, because it ensures that further work (e.g. habitat assessments and bird surveys) will be required to support relevant planning application(s).

4.84.9 Other than MD1 (Warrington Waterfront) and MD3 (Fiddlers Ferry), the allocation MD2 (South-East Warrington Urban Extension) may support populations of lapwing according to clusters of records in the Cheshire Bird Atlas (although the resolution of records in the atlas is very low) and given the size of and presence of suitable habitats within this site. However, MD2 is a very large site with a policy requirement to deliver substantial amounts of greenspace. Therefore, the site has considerable potential to retain any key areas of improved grassland or arable land that are identified as being significant for roosting or foraging by lapwing (or any other SPA species). The other allocated sites (at Croft, Culcheth Hollins Green, Lymm and Winwick) generally provide suitable habitat for lapwing (the most widely distributed SPA bird in Warrington, which favours agriculturally improved grassland) but are in areas that contain few or no records of the species in the Cheshire Bird Atlas. The only major allocated site that appears entirely unsuitable for lapwing is Peel Hall (MD4), which based on aerial photography consists of fallow unmanaged grassland that would be unsuitable for lapwing.

4.94.10 Both MD5 (Thelwall Heys) and MD6 (South East Warrington Employment Area) encompass arable land, which represents suitable foraging habitat in principle. However, the allocations lie further than 11.5km and 14km from the Mersey Estuary SPA / Ramsar, making it unlikely that they are functionally linked to the site. It is concluded that no additional policy mitigation is required for these site allocations. With specific regard to lapwing, which has been identified as a particular concern regarding development in Warrington by Cheshire Wildlife Trust, Natural England's Impact Risk Zone guidance for birds[41] states that '*Developments affecting functionally linked land more than 10km from the site are unlikely to impact significantly on designated populations*.'

4.104.11 The existing policies of sites MD1-MD3 require the applicant to provide evidence that the development will not result in an adverse effect on integrity. To demonstrate this, overwintering bird surveys (typically at least two survey seasons) will be required to determine the habitats within the site to verify if it is suitable to support a significant population[42] of designated bird features. Where habitats are suitable, non-breeding bird surveys will be required to determine if the site and neighbouring land constitute a significant area of supporting habitat. Surveys will need to be undertaken during autumn, winter and spring. If habitat within the site or adjacent land are identified to support significant populations of designated bird features, avoidance and mitigation measures will be required and the planning application will likely require a project specific Habitats Regulations Assessment to ensure that the development does not result in adverse effects on integrity. Care must be taken in developing planning applications for these sites that functionally-linked land, if it exists, is mitigation or preserved, and appropriately buffered.

4.114.12 It is considered that allocating sites for development prior to full wintering bird surveys being undertaken is appropriate and legally compliant in this case. Firstly, only a small number of allocated development sites (notably Warrington Waterfront, Fiddlers Ferry and the South-East Warrington Urban Extension) may be affected and they are large sites that are likely to be able to preserve key areas of functionally-linked land within their masterplans.

4.124.13 Secondly, the law accepts that ecological investigation to support plan development must be tiered, with more detailed investigation undertaken at each subsequent stage:

- The Court of Appeal[43] has ruled that provided the competent authority is duly satisfied that mitigation can be achieved in practice (in other words that solutions exist that are likely to be effective) this will suffice to enable a conclusion that the proposed development would have no adverse effect.
- The High Court[44] has 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 the Habitats Regulations*'.

[41] Natural England (2019). Impact Risk Zones Guidance Summary Sites of Special Scientific Interest Notified for Birds. Version 1.1
[42] A significant population is classified as a site that regularly used by 1% or more of the population of qualifying bird species
[43] No Adastral New Town Ltd (NANT) v Suffolk Coastal District Council Court of Appeal, 17th February 2015
[44] High Court case of R (Devon Wildlife Trust) v Teignbridge District Council, 28 July 2015

- Advocate-General Kokott[45] has commented that *'It would also hardly be proper to require a greater level of detail in preceding plans* [than lower tier plans or 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'*.

~~4.13~~4.14 Thirdly, there is a low risk of any of these allocated sites proving undeliverable due to the presence of SPA / Ramsar bird species. The functionally-linked habitats in question are common, widespread and easily recreated (or managed in a more favourable manner), and the species in question (particularly redshank and lapwing) do not have highly specific habitat requirements and are sufficiently widespread that development is only likely to affect a small proportion of their overall foraging resource. This approach also takes account of the fact that these developments will be delivered over long timescales over the course of the plan period and ecological surveys will therefore need repeating and updating to accompany planning applications. This approach therefore avoids considerable time and expense being undertaken doing potentially redundant survey work.

~~4.14~~4.15 Therefore, it is concluded that a sufficient policy framework exists to ensure no adverse effect on European sites through loss of functionally-linked habitat.

Recreational pressure

~~4.15~~4.16 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, through recreational activities.

~~4.16~~4.17 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 and all sensitive coastal sites within 10km of the borough. In practice, this includes the Rixton Clay Pits SAC, Manchester Mosses SAC, Mersey Estuary SPA / Ramsar, Rostherne Mere Ramsar and Midlands Meres & Mosses Phase 1 Ramsar.

Mechanical/abrasive damage and nutrient enrichment

~~4.17~~4.18 Most types of terrestrial European site can be affected by trampling, which in turn causes soil compaction, erosion and direct physical damage to individual plants. Walkers with dogs contribute to pressure on sites through nutrient enrichment via dog fouling and have potential to cause greater disturbance to fauna as dogs are less likely to keep to marked footpaths and roam freely when off-lead. Motorcycle scrambling and off-road vehicle use can cause serious erosion, as well as disturbance to sensitive species.

~~4.18~~4.19 Several published academic papers empirically demonstrate that damage to vegetation in bogs, woodlands and other habitats can be caused by vehicles, walkers, horses and cyclists:

- Gremmen (2003)[46] 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)[47] 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

[45] 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
[46] 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.
[47] 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.

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)[48] 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)[49] 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)[50] 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 reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance but recovered rapidly. Higher trampling intensities caused more disturbance.

~~4.19~~4.20 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)[51] 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[52].

Disturbance

~~4.20~~4.21 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.

~~4.21~~4.22 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.

~~4.22~~4.23 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

[48] 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.
[49] 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.
[50] 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.
[51] 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.
[52] 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.

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.

4.234.24 Disturbing activities occur 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. 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.

4.244.25 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

4.254.26 Impacts of recreational pressure are not currently identified within the site's Conservation Objectives, or environmental conditions of the SAC, and no concern is identified on the Site Improvement Plan. Fishing at Rixton Clay Pits SAC may result in likely significant effects to the population of great crested newts. Great-crested newt larvae are extremely vulnerable to predation by fish such as sticklebacks and perch. Furthermore, 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[53]. These impacts 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 OS3 – Hollins Green;
- Policy OS4 – Lymm (Pool Lane / Warrington Road);

  and

- Policy OS5 – Lymm (Rushgreen Road).

4.264.27 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. Therefore, the site 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 with 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 in an adverse effect on the ability of the SAC to support great crested newts.

4.274.28 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 an increase in existing alternative facilities due to the Local Plan, rather than a decrease. For example, Policy DC5 - Open Space, Sport and Recreation Provision states that '*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 population including… d. natural/semi-natural greenspaces…* 4. *All residential development proposals of 40 dwellings or more will be required to contribute to the provision*

[53] 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

of open space and equipped play provision'. In addition, the Local Plan also identifies the future opportunities for restoration works at disused industrial sites.

4.284.29 Policy ENV6 – Restoration and Aftercare of Mineral and Waste Sites states that '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*.' 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 in Warrington Borough that can be used for recreational activities.

4.294.30 Overall, a conclusion of no adverse effects on integrity due to recreational pressure can be made for this SAC.

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

4.304.31 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 several reasons for this, which may be due to poor public perception of bog habitat, private ownership of land, or inaccessibility. Raised-bog by nature is uneven, waterlogged terrain that is not easily used for recreational activities and/or is not accessible due to health and safety issues. As such, bogs are generally protected from negative impacts of trampling and disturbance issues.

4.314.32 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[54]. In addition, as already discussed, recreational policies DC3 and DC5 ensure that an appropriate level of recreational space is provided for residential development within Warrington, whilst policy ENV6 enables the restoration of mineral workings to publicly accessible habitat of greater appeal for recreation than bog and mere. As such, none of the development allocations included 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 pressure.

Mersey Estuary SPA / Ramsar

4.324.33 The Mersey Estuary SPA/ Ramsar is currently experiencing a decline in wader and waterfowl numbers, similar to 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[55] and for many species other contributing factors may contribute significantly (e.g. weather and habitat condition changes along migratory routes). 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, with the potential to result in likely significant effects on the site. 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 – Fiddlers Ferry; and
- Policy MD4 - Land at Peel Hall.

[54] Warrington Borough Council (2018) Risley Moss. [Online] Available from: www.warrington.gov.uk/homepage/542/risley_moss [Accessed: 18 Feb. 19].
[55] 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

4.334.34 Proposals of the Warrington Western Link Highways project aim to link the A56 (Chester Road) with the A57 over the River Mersey. The objectives of this project are to relieve congestion within the town centre of Warrington and to connect the north and south of Warrington separated by the River Mersey. This road proposal could lead to an increase in recreational pressure due to its close proximity to the Mersey Estuary in Runcorn. However, due to the Manchester Ship Canal and the heavily industrialised waterside of the Ship Canal accessibility to the River Mersey in this area is greatly restricted. Therefore, arguably the closest accessible unit of the SPA / Ramsar relevant to Warrington Borough is Hale Marsh. According to local knowledge[56], high numbers of teal feed along the creeks on the marsh and flocks of waders are seen roosting here (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's swans and whooper swans have stayed on the marsh during the winter.

4.344.35 Hale Marsh lies approximately 9km from the nearest residential areas of Warrington (over 10km from most of the borough) and there is limited parking. As such, it is considered that the Mersey Estuary SPA / Ramsar will form a negligible recreational resource for Warrington residents. This is in contrast to those authorities in the Liverpool City Region that lie closer to the accessible parts of the SPA / Ramsar and will be more likely to contribute to on-foot access to the SPA / Ramsar. Therefore, it is 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.

Disturbance in functionally linked habitat

4.354.36 Arpley Meadows Country Park is to serve as strategic greenspace for the 1,070 residential dwellings allocated in site MD1 (Warrington Waterfront) during the Plan period (and 1,335 dwellings in total beyond the Plan period). Given its proximity to the proposed development and its attractiveness, it is very likely that Arpley Meadows will be a primary recreational resource for new residents. Any species that depend on areas within the Country Park as functionally linked habitat are likely to experience an increase in recreational pressure, most likely from dog walkers.

4.364.37 There are numerous publications that have shown the disturbance effects of recreational trail use on wintering waterfowl. For example, the number of waterfowl after disturbance through recreational trail use was significantly lower than pre-disturbance. This effect was most marked within 40m of the walk trajectories at sites with no existing trail usage, illustrating the sensitivity of waterfowl with little previous experience of disturbance[57]. In contrast, the disturbance effect was much less pronounced at existing trail sites, indicating that waterfowl are likely to show some degree of habituation to recreational use. Indeed, in other areas such as the Bedfont Lakes Country Park (functionally linked to the South-West London Waterbodies SPA / Ramsar), high recreational use does not prevent the site to fulfil its supporting role for waterfowl species. The populations of gadwall and shoveler congregate in specific areas of the Bedfont Lakes, allowing other parts of the site to be used for recreation. The Moore Nature Reserve near the Warrington Waterfront is already being visited for recreation (it is an attractive destination for bird watchers in particular) and therefore is already subject to recreational disturbance. Notwithstanding this, it will need to be ensured that the increase in recreational pressure due to the 1,070 proposed dwellings does not threaten the site's ecological functionality.

4.374.38 The Arpley Meadows Country Park will cover a relatively large area of 160ha, which is far more than would be required for the mitigation of the local population increase if one uses the most widely deployed area-based indicator of recreational pressure mitigation requirements: Natural England's SANG guidelines developed for the Thames Basin Heaths SPA and elsewhere of 8ha per 1000 population or 0.008ha per person. The Country Park would provide greenspace at a rate of 33ha per 1000 population, well in excess of the maximum typically required to protect European sites from direct recreational pressure. Therefore, there would be sufficient space to enabling recreational use of the country park while avoiding excessive pressure on the residual habitat areas of the Moore Nature Reserve. The primary means to ensure that the ecological functionality of the site is maintained would be to appropriately design and manage the park. This could involve some or all of the following measures:

- Planning paths to avoid sensitive areas (e.g. areas for loafing)

[56] http://www.rspb.org.uk/groups/Liverpool/places/353268/
http://www.thefriendsofpickeringspasture.org.uk/winter-2015-16-pickerings-pasture.html
[57] Trulio L. & White H.R. (2017). Wintering waterfowl avoidance and tolerance of recreational trail use. *Waterbirds 40*: 252-262.

- Planting of visual screens to shield waterfowl from visitors
- Temporary closure of areas during peak sensitivity periods
- Warden(s) to fulfil both educational and enforcement roles
- Information boards to educate visitors about sensitive wildlife
- Dog-on-lead zones
- Zoning for different recreational activities

4.384.39 Given the very high rate of greenspace provision associated with the Warrington Waterfront development, it is considered that there is a high likelihood that an unsustainable increase in visitor pressure within the Moore Nature Reserve can be avoided. It can therefore be concluded that the Plan will not result in adverse effects on the site integrity of the Mersey Estuary SPA / Ramsar regarding visual and / or noise disturbance in the functionally linked habitat provided by Moore Nature Reserve (located in the Arpley Meadows Country Park).

Air quality

4.394.40 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[58]. The air pollutant of most concern for sensitive vegetation in relation to road traffic emissions is oxides of nitrogen (NOx) concentrations[59]. 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.

4.404.41 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 habitat, which has a low nitrogen 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[60]. Supported communities within bogs are particularly sensitive to nitrogen deposition. Bryophytes (mosses and liverworts) lack a well-developed cuticle and absorb pollutants across their cell surface more easily. Their abundance decreases when a certain threshold of nitrogen is exceeded. Bryophytes are important organisms as they store large quantities of carbon and, to an extent, filter pollutants from the environment[61]. The protection of this habitat from nitrogen degradation is therefore of critical importance.

4.414.42 The main pathways of nitrogen impact described above are through toxicity and the movement of nitrogen through varying trophic levels. Another potential route is through nitrogen acidification. A study undertaken

[58] 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.
[59] 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.
[60] 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.
[61] 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.

by Maskell et al (2010)[62] 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. Microbial communities carry out a natural decay 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, resulting in a net decrease in biodiversity[63]. 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

4.424.43 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. However, its sensitivity depends on the susceptibility of the SAC newt population to relatively subtle changes in vegetation structure and (for nitrogen deposition) whether the supporting waterbodies are phosphate-limited rather than nitrogen limited, such that phosphorus (which does not come from atmosphere) is the key pollutant in eutrophication.

4.434.44 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 that are calcium rich. Of the three species of newts native to the UK, great crested newts are least sensitive to acidification of waterbodies. A study by Giffiths (1993)[64] observed that during larval development, feeding behaviour was not impaired by acidic condition (pH 4-5). Miro (2017)[65] 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 Europe can be seen thriving in naturally acidic conditions. For example, Dolmen (1980)[66] observed breeding populations of newts within acidic bog lakes occurring within coniferous woodland.

4.444.45 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- rather than nitrogen-limited. In most lowland freshwater bodies; eutrophication is primarily determined by phosphate inputs (which comes from agriculture or treated wastewater, but not atmosphere) rather 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. Therefore, it is 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.

4.454.46 Dust deposition and subsequent coating of vegetation disrupting photosynthesis could be an effect of sites that come forward under policies ENV4 and ENV5, which both promote minerals development, if the minerals development is located within 50m of the SAC[67]. 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. This will include the protection of residents, infrastructure and the environment from dust deposition.

Manchester Mosses SAC

4.464.47 Air quality impact pathways described within paragraph 4.404.39 are of particular relevance to the Manchester Mosses SAC as this site supports raised bogs and associated vulnerable species. Holcroft

[62] 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.
[63] Defra (2007) Acid Deposition Processes. Nobel House: London.
[64] Griffiths, R.A. 1993 The Effect of pH on Feeding-Behaviour in Newt Larvae (*Triturus*, Amphibia). Journal of Zoology 231 285-90
[65] 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.
[66] 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.
[67] 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

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.

~~4.47~~4.48 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.

~~4.48~~4.49 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.

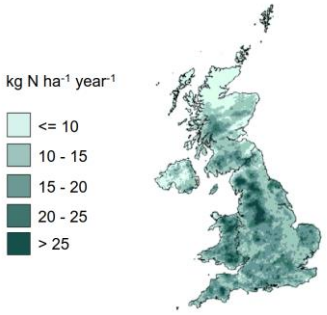

Figure 5: The nitrogen deposition measured between 2003-2005.

~~4.49~~4.50 Monitoring programs such as the Countryside survey and the New Plant Atlas[68] of the UK revealed shifts in species composition that favour nutrient-tolerant species[69]. 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 36 kgN/ha/yr at the closest area of SAC bog to the M62. Therefore, Holcroft Moss is already subject to a deposition rate far above its critical load.

~~4.50~~4.51 In order to understand the potential ecological effect of the forecast 'in combination' change in nitrogen deposition reported in the HRA screening assessment (3 kgN/ha/yr) it is useful to know what the botanical effect of a 'dose' of 0.6 kgN/ha/yr would be on bog habitats.

~~4.51~~4.52 It is also important to note that the general long-term trend for NOx concentrations in the UK has been one of improvement (particularly since 1990) despite an increase in vehicles on the roads[70]. Total nitrogen deposition[71] in the UK decreased by 13% between 1988 and 2008, while NOx concentrations decreased by

[68] Preston, C.D., Pearman, D.A. & Dines, T.D. (eds), 2002. New Atlas of the British and Irish Flora. ISBN: 0198510675
[69] Haines-Young, R., et al., 2003. Changing landscapes, habitats and vegetation diversity across Great Britain. Journal of Environmental Management, 67, 267-281.
[70] Emissions of nitrogen oxides fell by 72% between 1970 and 2017. Source: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/778483/Emissions_of_air_pollutants_1990_2017.pdf [accessed 30/08/19]
[71] 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.

50% over the same time period[72]. According to Plantlife, '*There is an overall decreasing trend in the percentage of UK habitats affected by nitrogen deposition, with levels exceeding critical loads dropping from 75% of UK sensitive habitats in 1996, to 62.5% in 2011-2013*'[73]. The trend has also been observed and documented by the European Union and has been recently used by them to develop a tool to monetise the biodiversity benefit of such improvements[74].

4.524.53 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, progressing towards the government's target of ending the sale of all new petrol and diesel cars and vans by 2030. For example, the latest and most stringent (Euro6/VI) emissions standard only became mandatory in 2014 (for heavy duty vehicles) and 2015 (for cars). The effects of these changes in standards will not be visible in the data available from APIS because relatively few people will have been driving vehicles compliant with that standard as early as 2016. In contrast, far more drivers can be expected to be using Euro6 compliant vehicles by the end of the Local Plan period (2038) since vehicles that are not compliant with Euro6 ceased manufacture in 2015. Defra's UK vehicle fleet projections show that in 2030, 99% of petrol and diesel cars are expected to be Euro 6 compliant[75]. The Warrington Local Plan period runs significantly beyond this date to 2038. From 2030 a significant increase in the number of electric vehicles (which do not emit exhaust pollutants) can be expected even without local stimulation but since no official forecast trends are available this has not been taken into account in AECOM's modelling. Similarly, the Defra Emission Factor Toolkit for NOx only contains projections to 2030, so AECOM's modelling has effectively frozen improvements in emissions by 2030.

4.534.54 Full modelling results are presented in Appendix A while the modelling methodology is in Appendix B. Bearing in mind the level of caution in the modelling, the modelling forecasts that on the worst-affected transect (transect R2) the total nitrogen deposition rate at the closest area of bog (90m from the road) in the hypothetical scenario of no growth at all is expected to be 33.2330.07 kgN/ha/yr by 2038, taking account of other sources such as agriculture and industrial sources. ~~When the Warrington Local Plan is added, this rate increases to 33.38 kgN/ha/yr, a small increase of 0.15 kgN/ha/yr.~~ When all other growth (including surrounding Local Plans and the M62 Smarter Motorways scheme) is added, this increases to 36.3132.19 kgN/ha/yr, a large increase of 2.9123 kgN/ha/yr. When the Warrington Local Plan is added, this rate increases to 33.3832.32 kgN/ha/yr, a small increase of 0.153 kgN/ha/yr leading to a total in combination dose from traffic growth of 2.25 kgN/ha/yr.. Therefore, the vast majority (9594%) of forecast additional nitrogen deposition due to traffic growth is not associated with Warrington Local Plan, even though the relevant section of the M62 lies within Warrington borough.

4.55 Natural England Commissioned Report 210[76] examines the ecological effect of a given nitrogen dose on various habitats including bog. Table 21 of the report identifies that at high background rates of nitrogen deposition (such as is experienced at Manchester Mosses SAC) a typical additional dose of 3.3 kgN/ha/yr is required to reduce species richness by the equivalent of 1 species. The limited species richness effect even when a large nitrogen dose is applied is probably due to the hydrological regime limiting further species responses to deposition once the critical load is exceeded[77].

4.56 As discussed earlier (footnote 36 on page 19) no direct effect of NOx as a pollutant (other thanas a source of nitrogen, already considered above) is anticipated following APIS guidelines. The other relevant pollutants are ammonia and acid deposition.

4.57 Ammonia as a source of nitrogen has already been factored into the nitrogen deposition calculations. However, ammonia in atmosphere can also be directly toxic to lower plants (lichens and bryophytes), which are characteristic of good condition bogs, at concentrations above 1 μgm^{-3}. Total ammonia at Holcroft Moss

[72] 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)
[73] https://www.plantlife.org.uk/application/files/1614/9086/5868/We_need_to_talk_Nitrogen_webpdf2.pdf
[74] Jones, L., Milne, A., Hall, J., Mills, G., Provins, A. and Christie, M. (2018). Valuing Improvements in Biodiversity Due to Controls on Atmospheric Nitrogen Pollution. Ecological Economics, 152: 358-366. http://ec.europa.eu/environment/integration/research/newsalert/pdf/monetising_biodiversity_benefit_of_reducing_nitrogen_pollution_in_air_522na2_en.pdf
[75] Defra's Emission Factor Toolkit (EFT) v10.1 available at https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html
[76] Caporn, S., Field, C., Payne, R., Dise, N., Britton, A., Emmett, B., Jones, L., Phoenix, G., S Power, S., Sheppard, L. & Stevens, C. 2016. Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance. Natural England Commissioned Reports, Number 210.
[77] NECR210, pages 56 and 72. Page 72 also notes that the relationships expressed in the report for bog habitats should be regarded as conservative.

far exceeds this threshold under all current and future scenarios, being c. 4 μgm^{-3} at the closest part of the bog to the road. This is relatively typical of much of the UK due primarily to agriculture. The total in combination change in ammonia when all sources are taken into account is 0.36 $\mu g/m^3$ or 40% of the critical level. The contribution of the Local Plan is a worst-case 0.02 $\mu g/m^3$ or 2% of the critical level and therefore cannot be dismissed as insignificant. Scrutiny of ammonia data from the UKEAP national ammonia monitoring network for a range of sites covering 2010-2019 shows that the normal variation in ammonia concentrations throughout a year can be as high as 3-4 $\mu g/m^3$, and even at rural sites concentrations generally fluctuate by more than 1 $\mu g/m^3$ (100% of the critical level) throughout the year. In other words, the forecast ammonia doses fall well within the expected variance in existing ammonia concentrations and are unlikely to be statistically significant. It is, however, the case that the forecast traffic growth is forecast to make the existing situation worse without mitigation, although it should be noted that the modelling has taken no account on the government ban on the sale of new petrol and diesel cars and vans from 2030 which will considerably reduce ammonia emissions from traffic.

4.544.58 With regard to acid deposition (which stems from the forecast nitrogen deposition) the critical load (minCLMaxN) for this habitat is 0.564 keq/ha/yr, so 1% is 0.005 keq/ha/yr. The total acid deposition is c. 2.3 keq/ha/yr (well above the critical load) and results in the total acid deposition (taking account of all sources) deteriorating from 2.15 keq/ha/yr in the theoretical situation of no traffic growth by 2038 to 2.31 keq/ha/yr with all traffic growth. The worst case impact of the plan is 0.01 keq/ha/yr which is 1.8% of the critical load. The contribution of the Local Plan drops below 1% of the critical load after 180m from the road.

4.554.59 This analysis therefore leads to a conclusion that:

a) The Warrington Local Plan will have a likely significant effect on Manchester Mosses SAC alone through a small, but not imperceptible, increase in nitrogen deposition (0.135 kgN/ha/yr), ammonia and acid deposition, although this is a very precautionary conclusion as (for nitrogen) it uses the minimum part of the critical load range, which according to APIS is most applicable in lower precipitation environments, for nitrogen and NOx (and therefore acid) it freezes improvements in NOx emission factors at 2030, and for all pollutants it takes no account of the significant shift to electric vehicles that can be expected between 2030 and 2038 as a result of the government ban on the sale of new petrol and diesel cars and vans (this was established in Chapter 3);

b) It will contribute to a likely significant 'in combination' effect on Manchester Mosses SAC (this was also established in Chapter 3);

c) However, the vast majority (95%) of the 'in combination' effect will be attributable to other sources (i.e. existing sources such as agriculture or new sources such as the Smart Motorways scheme and growth in Greater Manchester) rather than Warrington Local Plan; and

d) The 'in combination' nitrogen dose is expected to cause a small (but greater than negligible) negative difference in the vegetation composition compared to a situation without growth, mainly regarding slight difference in species richness and a modest increase in percentage grass cover.

4.564.60 The worst-case 'in combination' effect at the closest area of bog to the M62 (c.90m64m away) is thus predicted to be botanically subtle. At distances greater than 9064m (i.e. within the majority of Holcroft Moss up to 200m from the motorway) the effect will be even more subtle. Moreover, even the worst-case effect could be negated by changes in management or hydrological regime and the botanical effect that is forecast may prove to be even more subtle than identified in this report if the full improvement in vehicle emissions that Defra expect to arise by 2030 and beyond does occur.

4.574.61 Nonetheless, since the site has a restore objective and However, to confidently draw a conclusion of no adverse effect on integrity the HRA of the Warrington Local Plan considers that some measures to reduce the (small) contribution of Warrington to the overall subtle effect is required for purposes of good stewardship and to reinforce the conclusion of no adverse effect on integrity. This conclusion will be further underlined as vehicle purchasers react to the 2030 ban on the sale of new diesel and petrol cars and vans in the later part of the Local Plan period.

4.584.62 Following discussion between AECOM and Warrington Borough Council a three-tier approach to achieving positive air quality for Warrington and Manchester Mosses SAC has been agreed, as follows, the framework for which is provided by the Local Plan policies INF1 (Parts 1-4 and 7) and ENV8 (Parts 3/4):

- Tier One: Warrington Council will deliver a programme of borough-wide initiatives to reduce reliance on the private car and promoting and delivering improved public transport and low emission vehicles, such as requiring a certain percentage of new developments having electric vehicle charging points and working with the transport authorities to improve non-road connectivity between Warrington and Greater Manchester, producing materials to promote use of low-emission transport and/or deliver improved bus services with less polluting buses. These strategic initiatives would to some degree address the contribution of all new housing and employment in Warrington even on small sites. Warrington Council considers that the appropriate forum for this would be the revised Local Transport Plan (LTP4) that has just been out for consultation. This can be accessed via the following link: https://www.warrington.gov.uk/info/201080/streets-and-transport/2383/local-transport-plan.

- Tier-Two: Warrington Council will require the larger developments (MD1 to MD6) and those which line the M62 corridor (OS1, OS2, OS6) to each devise a scheme-specific range of measures to reduce reliance on cars, reduce trip generation and promote ultra-low emission vehicles. These 9 sites are responsible for a large proportion of Warrington Local Plan's new housing and the vast majority of its new employment such that applying this requirement would actually capture a lot of the planned development. It is noted that the updated policies for the main sites now require these developments '*to mitigate air quality impacts on the Manchester Mosses SAC in accordance with Policy ENV8…*' The kind of measures the applicants would be expected to introduce could include, but not be limited to, the following:

  a. Electric vehicle charging points at parking spaces. The government has committed to ceasing the sale of all new petrol and diesel cars and vans from 2035. In the latter part of the plan period therefore people can be expected to show particular interest in electric vehicles;

  b. Provision of a communal minibus (particularly if electric), and car club space. This will be effective for housing developments but particularly for employment developments;

  c. Cycle parking and shower facilities for staff;

  d. On-site services (e.g. GP surgery's and shops) to reduce need for off-site movements;

  e. Personalised Journey Planning services for residents. If employment premises the company could provide incentives for car-sharing and minimising car journeys for work;

  f. Production of sustainable travel information for residents e.g. accurate and easily understandable bus timetables;

  g. Implementation of a Staff Management Plan to place restrictions on car use by Staff;

  h. For vehicles generating HGV movements, restrictions to keep movements below 200 HDV per day, or a commitment to ensuring all HGVs used will be Euro6 compliant.

- Tier Three: Warrington Council will require all other developments that would exceed Warrington Council's thresholds for Transport Assessments to also devise a scheme-specific range of measures to reduce reliance on cars, reduce trip generation and promote ultra-low emission vehicles. This would avoid placing an undue burden on small sites and convey benefits to the SAC as well as air quality more broadly.

4.594.63It is not possible to precisely forecast the effect of this strategy on nitrogen dioxide (NO_2) emissions, or nitrogen deposition rates. However, retrospective data regarding the measured effectiveness of a broadly comparable package of measures elsewhere gives a reasonable broad indication of likely minimum effectiveness. A report published by the DfT in 2004[78] reviewed the evidence for the impact of various 'soft' measures[79] such as workplace and school travel plans, personalised travel planning, travel awareness campaigns, public transport information and marketing, car clubs and car sharing schemes, teleworking, teleconferencing and home shopping on resident behaviour. The authors of the report concluded that a

[78] DfT, 2004. Smarter Choices - Changing the Way We Travel https://www.gov.uk/government/publications/smarter-choices-main-report-about-changing-the-way-we-travel
[79] Soft transport policy measures seek to give better information and opportunities, aimed at helping people to choose to reduce their car use while enhancing the attractiveness of alternatives.

package of 'low intensity' interventions[80] could be expected to reduce traffic by 2-3%, whilst a package of 'high intensity' interventions[81] could be expected to lead to an 11% reduction.

~~4.60~~4.64 The conclusions of the 2004 DfT report were used to inform large-scale Smarter Choice Programmes that were carried out in three designated Sustainable Travel Towns: Darlington, Peterborough and Worcester. This project involved implementing a limited package of soft measures in each town: workplace travel planning, school travel planning, personal travel planning, public transport information and marketing, cycling and walking promotion and travel awareness raising. Post-project appraisal of these schemes[82] confirmed an average 9% reduction in car-based trips by residents. This compared very well with a fall of approximately 1% in medium-sized urban areas that did not have such a package of measures.

~~4.61~~4.65 AECOM's modelling indicates that Warrington Local Plan would increase traffic (in terms of AADT i.e. daily trips) on the M62 by 1.8% compared to the baseline situation.

2016 Baseline AADT on M62 past Manchester Mosses SAC	Additional AADT on M62 past Manchester Mosses SAC due to full implementation of Warrington Local Plan	Growth in traffic due to Warrington Local Plan as a percentage of the 2016 baseline
116,214	2,431	2.1%

~~4.62~~4.66 Therefore, a *reduction* of 2.1% in M62 trips, vehicle kilometres travelled, or emissions (due to an increased proportion of vehicles with less polluting engines) compared to the situation without such measures, would entirely address the forecast contribution of Warrington Local Plan. The recorded trip reductions of 2% to 9% from implementation of soft measures in Peterborough, Darlington and Worcester compare very well with the 2.1% reduction that would be the target for Warrington. This is particularly the case since:

a) the three-tier approach for Warrington would be much more fine-scale than the approach implemented at Peterborough, Darlington and Worcester, in that one element is to require a bespoke package of measures to be devised for specific new developments; and

b) a number of the measures identified in the three-tier strategy, notably working with the transport authorities to improve non-road connectivity between Warrington and Greater Manchester and/or delivering improved bus services with less polluting buses, go beyond the 'soft measures' that were implemented at those other settlements.

~~4.63~~4.67 The available evidence that exists regarding the effectiveness of local authorities implementing Smarter Choice Programmes, even without the additional measures set out in (a) and (b) above, indicates that it is reasonable to expect a reduction of at least 2% in AADT or NO_x emissions on the M62 by 2038 (compared to the 2016 baseline), as a result of the implementation of the three-tier strategy for Warrington. The UK government's policy to end the sale of new petrol and diesel cars and vans from 2030 can be expected to considerably accelerate this reduction beyond the scale forecast above during the latter part of the plan period. As such the duration of the negative impact is such that it is likely to fall below the 1% threshold even in combination with other plans and projects after 2040 as by that time it will have been impossible to purchase a new petrol or diesel car or van for a decade meaning relatively few cars and vans still on the network are likely to be emitting NOx or ammonia.

~~4.64~~4.68 As such, with the aforementioned three-tier strategy in place it is considered that a conclusion of no adverse effect on integrity can be reached with confidence. In addition, the Council have agreed with Natural England to propose the insertion of the following supporting text into the Local Plan as a minor modification: '*Environmental impacts as a result of air pollution is an element of the plan where there is limited evidence but one which requires LPAs to work together on wider solutions. The LPA is committed to continued engagement on this issue and it will make any necessary steps required to support wider initiatives that may come forward prior to a review of the plan, this includes working with neighbourhood authorities and combined authorities in the assessment of in-combination effects'*.

[80] The 'low intensity' scenario was broadly defined as a simple projection of the 2003-4 levels of local and national activity on soft measures.
[81] The 'high intensity' scenario identified the potential provided by a significant expansion of activity to a much more widespread implementation of present good practice, albeit to a realistic level which still recognised the constraints of money and other resources, and variation in the suitability and effectiveness of soft factors according to local circumstances.
[82] DfT, 2010. The Effects of Smarter Choice Programmes https://www.gov.uk/government/publications/the-effects-of-smarter-choice-programmes-in-the-sustainable-travel-towns-full-report

4.654.69 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[83]. 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.

~~Rostherne Mere Ramsar~~

~~4.66 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.~~

~~4.67 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 OS3 – Hollins Green;~~
- ~~Policy OS4 – Lymm (Pool Lane / Warrington Road); and~~
- ~~Policy OS5 – Lymm (Rushgreen)~~

~~4.68 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 close to background levels at the SAC boundary. 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~~

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~~4.691.1 The Mersey Estuary SPA / Ramsar is situated in the neighbouring Borough of Halton within the boundaries of the City of Liverpool. At its closest point, the SPA/Ramsar lies approx. 3.7km from the Warrington Borough boundary. 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-rich 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).~~

[83] 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

4.701.1 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*'[84], which is far in excess of anything that would be deposited from atmosphere. For coastal saltmarshes such as those in the Mersey Estuary SPA/Ramsar, nitrogen inputs from air are not as important as nitrogen effects from other sources because the effect of any nitrogen deposition from the 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*'[85].' 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.

4.711.1 Furthermore, Natural England's Site Improvement Plan highlights that greater threats to the site integrity are the declines of designated seabirds and 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.[86].

4.72 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

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

4.744.71 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.

4.754.72 The impacts of poor water quality entering European Sites can have far-reaching consequences similar to atmospheric pollution. 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.

4.764.73 It was identified at the screening stage that only the River Mersey SPA/Ramsar site, the Rixton Clay Pits SAC and Manchester Mosses SAC were susceptible to issues due to surface water quality. The Mersey Estuary is hydrologically linked to some development sites via the River Mersey or other watercourses, while the These sitestwo terrestrial sites are located within 1km of several residential developments allocated within the Local Plan. The remaining European Sites are located well over 1km from the Warrington Borough boundary and are not hydrologically connected to growth within it and are therefore not expected to be impacted by developments emerging from Warrington's Local Plan.

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

Mersey Estuary SPA/Ramsar site

4.74 Pollution of downstream European sites via watercourses was considered given that the Mersey Estuary SPA/Ramsar site lies downstream of Warrington Borough.

4.75 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 GB1 – Green Belt
- Policy MD1 - Warrington Waterfront
- Policy MD3 - Fiddlers Ferry; and
- Policy MD2 - South-East Warrington Urban Extension

4.76 Warrington Waterfront and Fiddlers Ferry are both adjacent to the River Mersey, while the Lumb Brook flows adjacent to the South East Warrington Urban Extension and drains into the Manchester Ship Canal which in turn drains into the River Mersey. However, even the closest development site (Fiddlers Ferry) is 3.5km upstream of the SPA/Ramsar site (Warrington Waterfront is 8.6km upstream and the confluence of the Lumb Brook and Manchester Ship Canal is 14km upstream).

4.77 The average depth of the River Mersey between Warrington and Runcorn ranges from 2m to 3.5m deep and from an average of approximately 150m wide to 800m in the vicinity of the Mersey Gateway Bridge. As such any pollution will be diluted within c. 5 million cubic metres of water by the time it reached the SPA/Ramsar site, probably to below the level of detection. More importantly, it is in any event a criminal offence to pollute watercourses under the Environmental Damage (Prevention and Remediation) (England) Regulations 2015 and the Environmental Permitting (England and Wales) Regulations 2016, such that in practice, no pollution events are expected to arise. For this reason, the Mersey Estuary SPA/Ramsar site is not discussed further regarding water quality.

Rixton Clay Pits SAC

~~4.77~~4.78 The Rixton Clay Pits SAC has been identified to be sensitive to water quality issues that may result in the loss of suitable pond vegetation that great crested newts use to lay eggs.

~~4.78~~4.79 There is one residential development proposal that is located within the 1km buffer zone of Rixton Clay Pits SAC:

- Policy OS3 – Hollins Green (Green Belt release).

~~4.79~~4.80 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 OS3 – Hollins Green; and
- Policy GB1 - Green Belt.
- ~~Policy ENV4 – Primary Extraction of Minerals~~
- ~~Policy ENV5 – Energy Minerals~~
- ~~Policy ENV7 – Renewable and Low Carbon Energy Development~~

~~4.80~~4.81 Despite the far-reaching implications of poor water quality to the SAC, several Local Plan policies and other legal drivers protect water quality and provide safeguarding to this site.

~~4.81~~4.82 Notably, Policy ENV2 - Flood Risk and Water Management states that *'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.'* Development must also '*8. c. 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 '*9. 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*.'

~~4.82~~4.83 In addition, all Main Development Area Polices (Policy MD1, MD2, MD3, MD4, MD5 and MD6) and settlement site allocations from Green Belt release (Policy OS1, OS2, OS3, OS4, OS5 and OS6) 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 ~~4.71~~4.58 are appropriately mitigated for each development policy of the Local Plan. The safeguarding of European Sites is further provided by Policy DC4 – Ecological Network, which states 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'*.

~~4.83 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.~~

4.84 ~~Finally,~~Furthermore, 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.

4.85 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 permissible 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*[87].'

4.86 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, OS3 and GB1 involve development in the Hollins Green area for permanent residential development, further measures are recommended for this site allocation.

4.87 **To ensure robustness of the Local Plan, it is recommended that the following text is added to Policy OS3:**

'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.'**

4.88 After consultation with AECOM regarding the water quality assessment and policy recommendations; Warrington Borough Council has since incorporated this policy recommendation to Policy OS3 under Point 18 (in amended form). With this additional safeguard it is considered that a conclusion of no adverse effect on integrity can be reached.

[87] 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]

Manchester Mosses SAC

4.89 The major current threat to raised bogs in the UK is the incorrect management of water. Bog habitat 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)[88] suggest that the vertical movement of the water table (i.e. water from the vegetation layer to the underlying peat) ranges up to 20cm.

4.90 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, outdated drainage systems designed to accommodate the current levels of urbanisation within Warrington, or inappropriate drainage of land for development ~~or mineral extraction associated with policies ENV4 and ENV5~~.

4.91 Policies within the Warrington Local Plan that could pose a risk of likely significant effects regarding water quality issues within 1km of this SAC are:

- Policy DEV1 – Housing Delivery;
- Policy DEV3 – Gypsy & Traveller and Travelling Show People Provision; and
- Policy GB1 - Green Belt.~~:~~
- ~~Policy ENV4 – Primary Extraction of Minerals~~
- ~~Policy ENV5 – Energy Minerals.~~

4.92 However, as described in paragraphs 4.82~~4.86~~ to 1.14~~4.88~~, there are safeguarding polices that will effectively provide water quality protection in the Manchester Mosses SAC. Moreover, the protection to water quality is set out in other legal drivers. Therefore, it is considered that a conclusion of no adverse effect on integrity can be reached.

Urbanization effects

Rixton Clay Pits SAC

4.93 The Rixton Clay Pits SAC is located towards the eastern boundary of Warrington Borough and is set within a rural landscape of agricultural fields, 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 sensitive to development due to habitat fragmentation, preventing the movement of adult newts between breeding ponds and terrestrial habitats. 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 OS3 – Hollins Green (with the closest development site located 110m to the east).

4.94 The development of Hollins Green may result in the net loss of overwintering and foraging habitats for newts that breed within the SAC. Therefore, the allocation will result in the potential loss of functionally-linked land for the SAC (and thus an effect on the integrity of the SAC) without mitigation. Moreover, since the

[88] 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.

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.

4.95 **Therefore, it was recommended in previous iterations of this HRA that the following text is incorporated into Policy OS3:**

'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 overwintering habitat within 500m of the SAC. This could be attained through new habitat creation or the enhancement of existing habitat features 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.'

4.96 After consultation with AECOM regarding the potential loss of great-crested newt supporting habitat and the above policy recommendations, Warrington Borough Council has addressed the issue of newt supporting habitat in Policy OS3 (albeit in much condensed policy wording). With this additional safeguard it is considered that a conclusion of no adverse effect on integrity could be reached.

5. In combination

Local Plans

5.1 The boroughs adjoining 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 expected level of impact on European Sites within and around the Borough of Warrington. The HRA of the Halton Local Plan 2014-2037 concluded no adverse impacts on 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 were identified. However, recommendations within the Halton HRA provide a framework for the appropriate safeguarding of this site for all future development within Halton. HRA undertaken in 2018 of the 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*. 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 given that AECOM's HRA policy recommendations have been included in the Local Plan, it is considered that no residual adverse effect on integrity would occur as a result of the Warrington Local Plan in combination with other plans and projects.

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* [that] *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*[89].'

5.4 Currently, there is no HRA regarding the impacts of HS2 on the Rixton Clay Pits SAC. However, reports have highlighted that this site is vulnerable to a *'temporary adverse effect due to indirect effects from construction activities and traffic movements'* at a national level[90]. The proposed route of HS2 through Warrington is located 1.2km north-west of the SAC; outside of a 500m buffer zone. However, at this stage a project-specific HRA is required to screen out all possible impact pathways expected in combination with the Warrington Local Plan. 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 the Manchester Mosses SAC. This will effectively increase capacity of the M62 by turning the hard shoulder into a conventional running lane and will involve an increase in traffic flows on the

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

M62 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. It is also to be noted that the Smart Motorway scheme has been taken into account in the Air Quality Impact Assessment informing the 'Atmospheric Pollution' section above.

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.

Appendix A Air Quality Modelling Results for M62 at Manchester Mosses

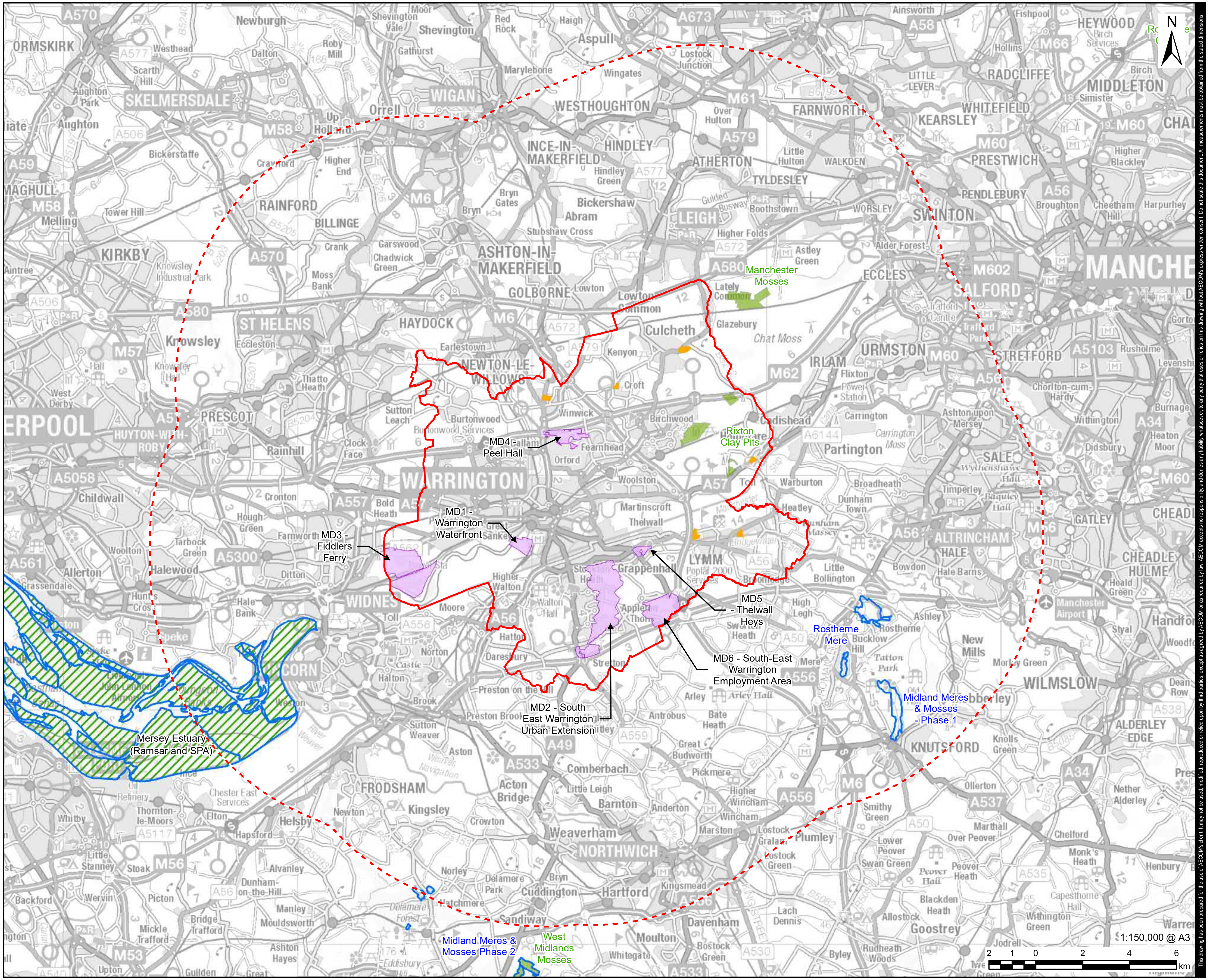
In the table below, Future Baseline is the hypothetical situation in 2038 with no traffic growth but allowing for improvements in vehicle emissions factors in line with the Defra Emission Factor Toolkit up to 2030. It includes pollution from all sources including, where relevant, agriculture and industrial sources. Do Minimum takes account of all traffic growth to 2038 except for the Local Plan. Do Something is identical to Do Minimum but adds in Warrington Local Plan. The difference between Do Something and Do Minimum is therefore the effect of the Local Plan while the difference between Do Something and Future Baseline is the in combination effect of all traffic growth. The data at 960m from the road have been highlighted in bold as these represent the results for the closest area of bog to the M62.

	Total Annual Mean NO_X (µg/m³)				Total Annual Mean NH_3 (µg/m³)				Total Annual Mean Nitrogen Deposition				Total Annual Mean Acid Deposition			
Distance from road	**2016 Baseline**	**2038 Future Baseline**	**2038 Do Minimum**	**2038 Do Something**	**2016 Baseline**	**2038 Future Baseline**	**2038 Do Minimum**	**2038 Do Something**	**2016 Baseline**	**2038 Future Baseline**	**2038 Do Minimum**	**2038 Do Something**	**2016 Baseline**	**2038 Future Baseline**	**2038 Do Minimum**	**2038 Do Something**
Transect R2																
R2_20m	97.06	32.90	40.12	40.44	6.07	6.76	7.72	7.78	48.11	45.53	51.38	51.76	3.44	3.25	3.67	3.70
R2_30m	82.50	29.11	34.81	35.06	5.28	5.82	6.57	6.62	43.15	40.43	45.07	45.37	3.08	2.89	3.22	3.24
R2_40m	73.21	26.69	31.42	31.62	4.77	5.22	5.84	5.88	39.96	37.18	41.03	41.27	2.85	2.66	2.93	2.95
R2_50m	66.77	25.01	29.05	29.23	4.42	4.80	5.33	5.37	37.74	34.91	38.22	38.43	2.70	2.49	2.73	2.74
R2_60m	62.01	23.77	27.30	27.46	4.16	4.48	4.95	4.99	36.09	33.23	36.13	36.31	2.578	2.374	2.581	2.594
R2_70m	58.32	22.80	25.95	26.09	3.96	4.24	4.66	4.69	34.81	31.93	34.52	34.68	2.49	2.28	2.47	2.48
R2_80m	55.40	22.04	24.88	25.00	3.80	4.05	4.43	4.46	33.79	30.91	33.24	33.38	2.41	2.21	2.37	2.38
R2_90m	**53.00**	**21.41**	**24.00**	**24.11**	**3.67**	**3.90**	**4.24**	**4.26**	**32.95**	**30.07**	**32.19**	**32.32**	**2.35**	**2.15**	**2.30**	**2.31**
R2_100m	51.02	20.89	23.26	23.37	3.57	3.77	4.08	4.10	32.25	29.36	31.31	31.44	2.30	2.10	2.24	2.25
R2_110m	49.36	20.45	22.65	22.74	3.47	3.66	3.95	3.97	31.67	28.77	30.58	30.69	2.26	2.05	2.18	2.19
R2_120m	47.92	20.08	22.12	22.20	3.40	3.56	3.83	3.85	31.17	28.26	29.94	30.05	2.23	2.02	2.14	2.15
R2_130m	46.67	19.75	21.66	21.74	3.33	3.48	3.74	3.75	30.73	27.82	29.39	29.49	2.19	1.99	2.10	2.11
R2_140m	45.55	19.46	21.24	21.32	3.27	3.41	3.65	3.66	30.33	27.43	28.90	29.00	2.17	1.96	2.06	2.07
R2_150m	44.58	19.21	20.89	20.96	3.21	3.35	3.57	3.59	29.99	27.09	28.48	28.57	2.14	1.93	2.03	2.04
R2_160m	43.71	18.98	20.57	20.64	3.17	3.29	3.50	3.52	29.68	26.79	28.10	28.18	2.12	1.91	2.01	2.01
R2_170m	42.92	18.78	20.29	20.35	3.12	3.24	3.44	3.45	29.40	26.51	27.76	27.84	2.10	1.89	1.98	1.99
R2_180m	42.21	18.60	20.03	20.09	3.09	3.19	3.38	3.40	29.15	26.27	27.45	27.53	2.08	1.88	1.96	1.97
R2_190m	41.57	18.43	19.79	19.85	3.05	3.15	3.33	3.35	28.93	26.04	27.17	27.24	2.07	1.86	1.94	1.95
R2_200m	40.98	18.28	19.58	19.64	3.02	3.12	3.29	3.30	28.72	25.84	26.92	26.99	2.05	1.85	1.92	1.93
Transect R3																
R3_23m	84.97	29.78	35.76	36.02	5.42	5.99	6.78	6.83	44.00	41.35	46.20	46.51	3.14	2.95	3.30	3.32
R3_30m	77.45	27.82	33.00	33.23	5.01	5.50	6.18	6.23	41.43	38.70	42.92	43.19	2.96	2.76	3.07	3.09
R3_40m	69.70	25.79	30.16	30.35	4.58	4.99	5.57	5.61	38.76	35.97	39.54	39.76	2.77	2.57	2.82	2.84
R3_50m	64.18	24.34	28.12	28.28	4.28	4.63	5.13	5.16	36.85	34.02	37.11	37.30	2.63	2.43	2.65	2.66
R3_60m	**60.03**	**23.24**	**26.58**	**26.72**	**4.06**	**4.36**	**4.80**	**4.83**	**35.40**	**32.54**	**35.27**	**35.44**	**2.53**	**2.32**	**2.52**	**2.53**
R3_70m	56.79	22.39	25.37	25.50	3.88	4.14	4.54	4.57	34.27	31.38	33.83	33.99	2.45	2.24	2.42	2.43
R3_80m	54.15	21.69	24.40	24.51	3.74	3.97	4.33	4.35	33.35	30.45	32.67	32.81	2.38	2.17	2.33	2.34
R3_90m	51.97	21.12	23.59	23.70	3.62	3.83	4.15	4.18	32.59	29.68	31.71	31.84	2.33	2.12	2.27	2.27
R3_100m	50.13	20.65	22.93	23.02	3.52	3.71	4.01	4.03	31.95	29.04	30.91	31.03	2.28	2.07	2.21	2.22
R3_110m	48.57	20.24	22.35	22.45	3.43	3.61	3.89	3.91	31.40	28.49	30.23	30.34	2.24	2.04	2.16	2.17
R3_120m	47.21	19.89	21.86	21.94	3.36	3.52	3.78	3.80	30.92	28.02	29.64	29.74	2.21	2.00	2.12	2.12
R3_130m	46.04	19.58	21.43	21.51	3.29	3.44	3.69	3.70	30.51	27.61	29.12	29.22	2.18	1.97	2.08	2.09
R3_140m	44.99	19.31	21.04	21.12	3.24	3.37	3.60	3.62	30.14	27.24	28.67	28.76	2.15	1.95	2.05	2.05
R3_150m	44.07	19.07	20.70	20.78	3.19	3.31	3.53	3.55	29.81	26.92	28.26	28.35	2.13	1.92	2.02	2.02

	Total Annual Mean NO_X (µg/m³)				Total Annual Mean NH_3 (µg/m³)				Total Annual Mean Nitrogen Deposition				Total Annual Mean Acid Deposition			
Distance from road	**2016 Baseline**	**2038 Future Baseline**	**2038 Do Minimum**	**2038 Do Something**	**2016 Baseline**	**2038 Future Baseline**	**2038 Do Minimum**	**2038 Do Something**	**2016 Baseline**	**2038 Future Baseline**	**2038 Do Minimum**	**2038 Do Something**	**2016 Baseline**	**2038 Future Baseline**	**2038 Do Minimum**	**2038 Do Something**
R3_160m	43.25	18.86	20.41	20.47	3.14	3.26	3.47	3.48	29.52	26.63	27.91	27.99	2.11	1.90	1.99	2.00
R3_170m	42.51	18.67	20.14	20.20	3.10	3.21	3.41	3.42	29.26	26.37	27.59	27.66	2.09	1.88	1.97	1.98
R3_180m	41.82	18.50	19.89	19.95	3.06	3.17	3.36	3.37	29.02	26.14	27.29	27.36	2.07	1.87	1.95	1.95
R3_190m	41.20	18.34	19.67	19.72	3.03	3.13	3.31	3.32	28.80	25.93	27.02	27.09	2.06	1.85	1.93	1.94
R3_200m	40.63	18.19	19.46	19.52	3.00	3.09	3.26	3.28	28.60	25.73	26.78	26.85	2.04	1.84	1.91	1.92
Transect R1																
R1_17m	104.06	34.84	42.83	43.17	6.45	7.25	8.30	8.37	50.48	48.13	54.59	55.00	3.61	3.44	3.90	3.93

Appendix B Air Quality Modelling Methodology

Revision: 0 Drawn: CN Checked: TD Approved: DW Date: 2021-08-20



AECOM

PROJECT

Habitats Regulations Assessment of the Warrington Local

CLIENT

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LEGEND

- Warrington Borough
- Warrington Borough 10km Buffer
- Main Allocations
- Other Allocations
- Ramsar
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)

NOTES

ISSUE PURPOSE

FINAL

PROJECT NUMBER

60473226

FIGURE TITLE

European Sites Within 10km of Warrington Borough and Allocations Proposed in the Local Plan

FIGURE NUMBER

Figure 4

Filename: I:\5004 - Information Systems\60473226_Warrington_Local_Plan_HRA\02_Maps\FIG4_EuropeanSites10km_MainSettlement_A3_210812_r01.mxd