Draft London Plan Habitats Regulations Assessment

Greater London Authority

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Quality information

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1. Introduction

1.1 Background to the Project

AECOM was appointed by the Greater London Authority (hereafter referred to as the 'GLA') to assist the Authority in undertaking a Habitat Regulations Screening Assessment of its Draft London Plan (hereafter referred to as the 'Plan'). The objective of this assessment is to identify any aspects of the Plan that would cause a likely significant effect on any Natura 2000 sites, otherwise known as European sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and, as a matter of Government policy, Ramsar sites), either in isolation or in combination with other plans and projects, and to advise on appropriate policy mechanisms for delivering mitigation where such effects were identified.

1.2 Current Legislation

The need for Appropriate Assessment is set out within Article 6 of the EC Habitats Directive 1992, and interpreted into British law by the Conservation of Habitats and Species Regulations 2010. The ultimate aim of the Directive is to "*maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest*" (Habitats Directive, Article 2(2)). This aim relates to habitats and species, not the European sites themselves, although the sites have a significant role in delivering favourable conservation status.

The Habitats Directive applies the precautionary principle to European sites. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. Plans and projects with predicted adverse impacts on European sites may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

The legislation sets out a multi-stage process. An initial analysis is undertaken order to determine whether there are likely to be significant effects. If it is not possible to conclude that there will not be likely significant effects, then in order to ascertain whether or not site integrity (i.e. the coherence of structure and function) will be affected, an 'appropriate assessment' should be undertaken of the plan or project in question. It should be noted that 'appropriate assessment' is not a technical term and the content is not explicitly defined in law or guidance; it literally means whatever level of assessment is required to support the conclusion of no adverse effects on integrity in a particular case. As such, in terms of the nature or level of technical analysis involved, there is no hard distinction between that required for screening and that required for appropriate assessment. Similarly, case law has established that it is legally compliant for mitigation measures to be taken into account when making a screening decision. A screening assessment can thus be brief and very high level, but it can also be very detailed, depending on what works best for a given analysis. Similarly, there is no legal or procedural limit to the number of iterations of either screening or appropriate assessment that can be undertaken for a given plan. The most important factor is that at the end of the assessment process one must be able to conclude that either there are going to be no likely significant effects or no adverse effects on integrity, in order to avoid reliance on the No Alternatives and Imperative Reasons of Over-riding Public Interest tests.

Over time the phrase 'Habitats Regulations Assessment' (HRA) has come into wide currency to describe the overall process set out in the Habitats Directive from screening through to Imperative Reasons of Overriding Public Interest (IROPI). This has arisen in order to distinguish the process from the individual stage described in the law as an 'appropriate assessment'. Throughout this report we use the term Habitat Regulations Assessment for the overall process and restrict the use of Appropriate Assessment to the specific stage of that name.

Box 1: The legislative basis for Appropriate Assessment

Habitats Directive 1992

Article 6 (3) states that:

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

Conservation of Habitats and Species Regulations 2010

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 … shall make an appropriate assessment of the implications for the site in view of that sites conservation objectives… The authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site".

1.3 Scope of the Project

There is no guidance that dictates the physical scope of a HRA of a Plan document since the potential for affecting sites will depend on the nature and scope of the plan itself. Therefore, in considering the physical scope of the assessment, this analysis was guided primarily by identified impact pathways rather than by arbitrary 'zones'. Current guidance suggests that the following European sites be included in the scope of assessment:

- All sites within the Greater London Authority boundary; and
- Other sites shown to be linked to development within the Authority boundary through a known 'pathway' (discussed below).

Briefly defined, pathways are routes by which a change in activity provided within a plan can lead to an effect upon a European designated site. Guidance from the former Department of Communities and Local Government states that the HRA should be '*proportionate to the geographical scope of the [plan policy*]' and that '*an AA need not be done in any more detail, or using more resources, than is useful for its purpose*' (CLG, 2006, p.6).

There are seven European sites that wholly or partially lie within the Greater London Authority boundary. These are:

- Richmond Park SAC located within the London Borough of Richmond upon Thames and immediately adjacent to the London Borough of Wandsworth and the Royal Borough of Kingston upon Thames;
- Wimbledon Common SAC located in the London Borough of Wandsworth and the London Borough of Merton and immediately adjacent to the Royal Borough of Kingston upon Thames;
- Epping Forest SAC located in the London Borough of Waltham Forest, the London Borough of Redbridge and Epping Forest District; hence partially inside and outside the GLA boundary.
- Lee Valley SPA and Ramsar site located in the London Borough of Waltham Forest, Epping Forest District and the Borough of Broxbourne; hence partially inside and outside the GLA boundary; and,
- South West London Waterbodies SPA and Ramsar site located in the London Borough of Hounslow, the Borough of Elmbridge, the Borough of Runnymede, the Borough of Spelthorne and the Royal Borough of Windsor and Maidenhead; hence partially inside and outside the GLA boundary.

Outside London, the following sites are also considered because there is potential for impacts stemming from the Plan to create significant effects:

Table 1. Distance of European Designated Site from the GLA and the Authority Within Which it is Located

European Designated Site	Distance from the GLA Boundary	Council Authority the Site is Located In.
Thames Estuary and Marshes SPA and Ramsar site	8.3 km	Medway District Council, Gravesham Borough Council, Thurrock Borough Council
Burnham Beeches SAC	8.7 km	South Buckinghamshire District Council
Mole Gap to Reigate Escarpment SAC	5.3 km	Mole Valley District Council; and Reigate and Banstead Borough Council.
Wormley- Hoddesdonpark Woods SAC	3.7 km	Broxbourne Borough Council; Welwyn Hatfield Borough Council; East Hertfordshire District Council.
Windsor Forest and Great Park SAC	5.7 km	Royal Borough of Windsor and Maidenhead; Bracknell Forest Borough Council; and Runnymede Borough Council
Thames Basin Heaths SPA	7.5 km	Bracknell Forest Council, Surrey Heath Borough Council, Woking Borough Council, Guildford Borough Council, Rushmoor Borough Council, Waverley Borough Council, Hart District Council
Thursley, Ash, Pirbright & Chobham SAC	11.0 km	Surrey Heath Borough Council; Guildford Borough Council; Woking Borough Council; and Waverley Borough Council.

Locations of all European designated sites are illustrated in **Appendix A, Figure A1**.

2. Methodology

2.1 Introduction

There is no formal central Government guidance on HRA, although general EC guidance on HRA does exist[1]. The Department for Communities and Local Government (DCLG) released a consultation paper on the Appropriate Assessment of Plans in 2006[2]. As yet, no further formal guidance has emerged. However, Natural England has produced its own internal guidance[3] as has the RSPB[4].

Figure 1 below outlines the stages of HRA according to current draft DCLG 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.

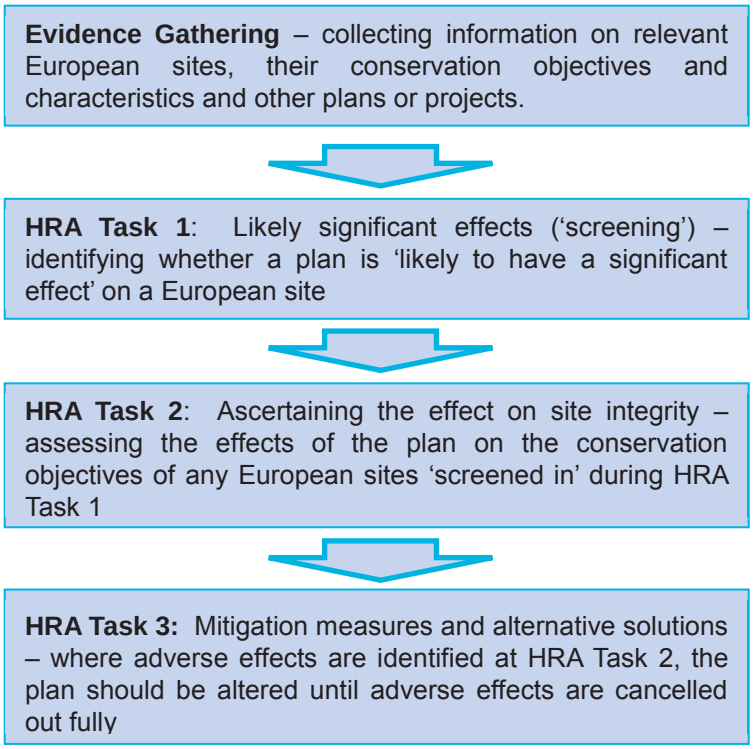


Figure 1: Four Stage Approach to Habitats Regulations Assessment. Source CLG, 2006.

[1] European Commission (2001): Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive.
[2] CLG (2006) Planning for the Protection of European Sites, Consultation Paper
[3] Natural England (1997) Habitats regulations guidance note 1.
http://www.ukmpas.org/pdf/practical_guidance/HRGN1.pdf
[4] Dodd A.M., Cleary B.E., Dawkins J.S., Byron H.J., Palframan L.J. and Williams G.M. (2007) *The Appropriate Assessment of Spatial Plans in England: a guide to why, when and how to do it.* The RSPB, Sandy.

2.2 HRA Task 1 - Likely Significant Effects (LSE)

Following evidence gathering, the first stage of any Habitat Regulations Assessment and the purpose of this assessment 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:

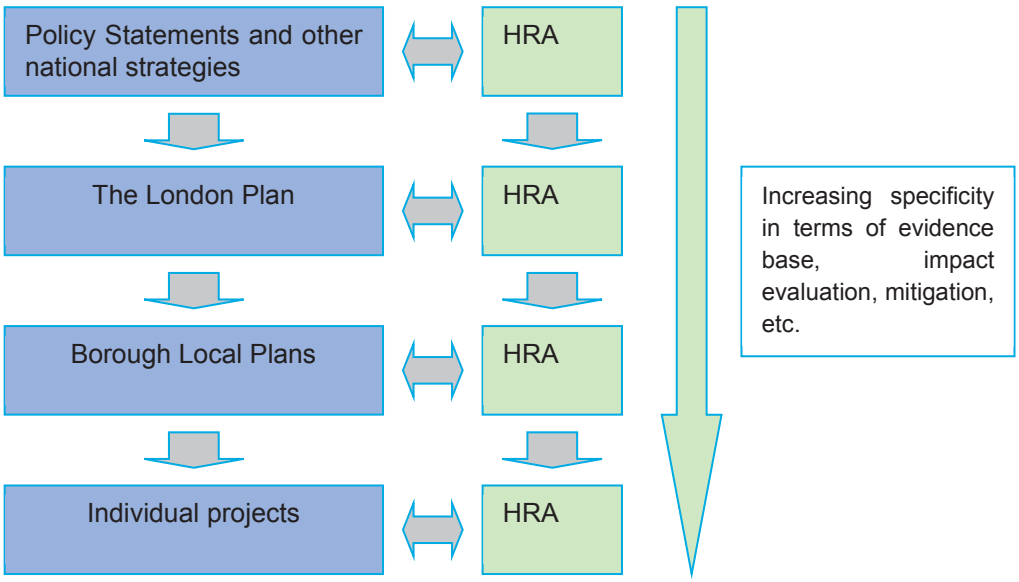
"*Is the Plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?"*

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.

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

Government guidance, and Court rulings, has confirmed that the level of detail in the HRA of a plan, whilst meeting the relevant requirements of the Habitats Regulations, should be appropriate to the level (or tier) of plan or project that it addresses. This 'tiering' of assessment is summarised in Box 2.

Box 2: Tiering in HRA of Land Use Plans



Case law has established that ecological investigation to support plan development should be tiered, with more detailed investigation undertaken at each subsequent stage:

- The Court of Appeal[5] 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 provided there is a lower tier in the process at which the detail of the mitigation can be scrutinised.
- The High Court[6] 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*'.

[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

- Advocate-General Kokott[7] has commented that *'It would …hardly be proper to require a greater level of detail in preceding plans 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'*.

Therefore, when discussing the likelihood of significant effects, or the nature of 'mitigation', for a high level strategic plan such as the London Plan, which contains no site allocations and often only a broad indication of growth quantum across London or per borough, one is concerned primarily with the policy framework to enable the delivery of such mitigation rather than the details of the mitigation measures themselves.

2.3 Principal Other Plans and Projects That May Act 'In Combination'

In practice, in combination assessment is of greatest relevance when the plan would otherwise be screened out because its individual contribution is inconsequential. For the purposes of this assessment, we have determined that, due to the nature of the identified impacts, the key other plans and projects relate to the additional housing, and commercial/industrial development proposed within the Greater London Authority area and authorities neighbouring the Greater London Authority area over the lifetime of the London Plan as follows. Individual plans are only discussed in the analysis in each chapter where relevant.

2.3.1 Authorities within the Greater London Authority boundary

- London Borough of Barking and Dagenham: Core Strategy 2010
- London Borough of Barnet: Local Plan (Core Strategy) 2012
- London Borough of Bexley: Core Strategy 2012
- London Borough of Brent: Core Strategy 2010
- London Borough of Bromley: Draft Local Plan 2016
- London Borough of Camden: Local Plan 2017
- London Borough of Croydon: Local Plan: Strategic Polices (CLP1) 2013
- London Borough of Ealing: Local Plan 2013
- London Borough of Enfield: Core Strategy 2010
- Royal Borough of Greenwich: Local Plan: Core Strategy 2014
- London Borough of Hackney: Core Strategy 2010
- London Borough of Hammersmith and Fulham: Submission Local Plan (not yet adopted 2017)
- London Borough of Haringey: Local Plan: Strategic Policies 2017
- London Borough of Harrow: Local Plan: Core Strategy 2012
- London Borough of Havering: Proposed Submission Local Plan 2017
- London Borough of Hillingdon: Local Plan Part 1 2012
- London Borough of Hounslow: Local Plan 2015
- London Borough of Islington: Core Strategy 2011
- Royal Borough of Kensington and Chelsea: Submission Local Plan 2017
- Royal Borough of Kingston upon Thames: Core Strategy 2012

[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

- London Borough of Lambeth: Local Plan 2015
- London Borough of Lewisham: Core Strategy 2011
- London Borough of Merton: Core Planning Strategy 2011
- London Borough of Newham: Core Strategy 2012
- London Borough of Redbridge: Local Plan Pre-Submission Draft 2015
- London Borough of Richmond upon Thames: Draft Local Plan 2017
- London Borough of Southwark: Core Strategy 2011
- London Borough of Sutton: Draft Local Plan 2016
- London Borough of Tower Hamlets: Core Strategy 2010
- London Borough of Waltham Forest: Core Strategy 2012
- London Borough of Wandsworth: Core Strategy 2016
- City of Westminster: City Plan 2016
- Mayor's Transport Strategy. Draft for Public Consultation June 2017.
- London Environment Strategy. Draft for Public Consultation. August 2017
- The London Housing Strategy. Draft for Public Consultation. September 2017
- The Mayor's Economic Development Strategy for London (May 2010). It is understood that the Mayor intends to release a new strategy in January 2018.
- Joint Waste Development Plan for the East London Waste Authority Boroughs 2012
- Draft North London Waste Plan 2012
- South London Waste Plan 2012
- Joint West London Waste Plan 2015
- Thames Water draft Water Resource Management Plan 2015-2040
- Essex and Suffolk Water's Water Resource Management Plan 2015-2040
- Sutton and East Surrey Water's Water Resource Management Plan 2015-2040
- Affinity Water's Water Resource Management Plan 2015-2040

2.3.2 Authorities neighbouring to the Greater London Authority boundary or otherwise relevant

- Kent County Council: The Minerals and Waste Plan (2013 to 2030); and, Local Transport Plan 4 (2016 to 2031)
- Surrey County Council: Surrey Waste Plan (2008); Surrey Minerals Plan (2011) Core Strategy DPD; and Surrey Transport Plan (2011).
- Buckinghamshire County Council: Minerals and Waste Core Strategy (2012)
- Hertfordshire County Council: Hertfordshire Minerals Local Plan 2002 to 2016; and Hertfordshire Waste Development Framework (2011-2026); and, Hertfordshire Local Transport Plan 3 (2011 to 2031)
- Essex County Council: Essex Minerals Local Plan (adopted 2014); Essex and Southend Waste Local Plan (adopted 2001)
- Bracknell Forest Borough Council: Bracknell Forest Borough Council Core Strategy Development Plan Document (adopted 2008); Bracknell Forest Borough Local Plan (adopted 2002); and, Bracknell Forest Council Site Allocations Local Plan (adopted 2013)
- Broxbourne Borough Council: Draft Local Plan 2016
- Chiltern District Council: Core Strategy 2011

- City of London: Local Plan 2015
- Dartford Borough Council: Core Strategy 2011
- Elmbridge Borough Council: Core Strategy 2011
- Epping Forest District Council: Epping Forest District Draft Local Plan (consultation version 2016)
- Mole Valley District Council: Core Strategy DPD (adopted 2009)
- Reigate and Banstead Borough Council: Reigate and Banstead Local Plan Core Strategy (adopted 2014)
- Runnymede Borough Council: Runnymede Borough Local Plan Second Alteration 2001
- Sevenoaks District Council: Sevenoaks District Council Core Strategy (adopted 2011)
- Slough Borough Council: Slough Local Development Framework Core Strategy 2006 to 2026 DPD.
- South Bucks District Council: Emerging Chiltern and South Bucks Local Plan (2014 to 2036)
- Spelthorne Borough Council: Core Strategy and Policies Development Plan Document (adopted 2009)
- Tandridge District Council: Tandridge District Core Strategy (adopted 2008)
- Three Rivers District Council: Local development framework Core Strategy (adopted 2011)
- Thurrock Council: Thurrock Local Development Framework Core Strategy and Policies for Management of Development (as amended) (adopted 2015)
- Watford Borough Council: Watford's Local Plan Part 1 Core Strategy 2006 to 2031 (adopted 2013)
- Welwyn Hatfield Borough Council: Welwyn Hatfield Local Plan Consultation (2015)
- Royal Borough of Windsor and Maidenhead: Borough Local Plan 2013 to 2033 Submission Version
- Wokingham Borough Council: Wokingham Borough Local Development Framework Core Strategy Development Plan Document (adopted 2010)

2.3.3 National Infrastructure Planning projects for consideration

- M4 Junctions 3 to 12 Smart Motorway – Works to upgrade the M4 Motorway to a Smart Motorway between Junctions 3 (London Borough of Hounslow) to Junction 12 in West Berkshire.
- Thames Tideway Tunnel (under construction)
- North London (Electricity Line) Reinforcement
- North London Heat and Power Project
- Potential expansion of Heathrow Airport as analysed by the Airports Commission led by Sir Howard Davies.

3. Introduction to Impact Pathways

In carrying out an HRA it is important to determine the various ways in which land use plans can impact on internationally designated sites by following the pathways along which development can be connected with internationally designated sites, in some cases many kilometres distant. Briefly defined, pathways are routes by which a change in activity associated with a development can lead to an effect upon an internationally designated site. Following screening of the Plan (undertaken in Appendix B), the following impact pathways are the focus of this document:

- Impacts from urbanisation and recreational activities (including disturbance and abrasion)
- Atmospheric pollution
- Water abstraction
- Water quality

The following sections provide a general introduction to these pathways. More specific discussion of each pathway as it relates to each European site (including site-specific evidence) is discussed in later chapters.

3.1 Urbanisation and Recreational Activities

3.1.1 Recreational pressure

Recreational use of an internationally designated site has potential to:

- Cause damage through mechanical/ abrasive damage and nutrient enrichment;
- Cause disturbance to sensitive species, particularly ground-nesting birds and wintering wildfowl; and
- Prevent appropriate management or exacerbate existing management difficulties.

Different types of internationally designated 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.

3.1.1.1 Mechanical/abrasive damage and nutrient enrichment

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

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

- Wilson & Seney (1994)[8] examined the degree of track erosion caused by hikers, motorcycles, horses and cyclists from 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.
- Cole et al (1995a, b)[9] conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow and grassland communities (each tramped between 0 – 500 times) over five mountain regions in the US. Vegetation cover was assessed two weeks and one year after

[8] Wilson, J.P. & J.P. Seney. 1994. Erosional impact of hikers, horses, motorcycles and off road bicycles on mountain trails in Montana. *Mountain Research and Development* 14:77-88

[9] 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

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 resilient to trampling. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling. It was concluded that these would be the least tolerant of a regular cycle of disturbance.

- Cole (1995c)[10] conducted a follow-up study (in 4 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)[11] experimentally compared the effects of off-track trampling by hiker and horse (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.

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[12] estimated the total amounts of urine and faeces from dogs as 30,000 litres and 60 tonnes respectively.

3.1.1.2 Disturbance

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[13]. Disturbance therefore risks increasing energetic output while reducing energetic input, which can adversely affect the 'condition' and ultimately the 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 have to sustain a greater number of birds[14].

The potential for disturbance may be less in winter than in summer, in that there are often a smaller number of recreational users. In addition, the consequences of disturbance at a population level may be reduced because birds are not breeding. However, winter activity can still cause important disturbance, especially as birds are particularly vulnerable at this time of year due to food shortages, such that disturbance which results in abandonment of suitable feeding areas through disturbance can have severe consequences. Several empirical studies have, through correlative analysis, demonstrated that out-of-season (October-March) recreational activity can result in quantifiable disturbance:

- Underhill et al[15] counted waterfowl and all disturbance events on 54 water bodies within the South West London Water bodies Special Protection Area and clearly correlated disturbance with a decrease in bird numbers at weekends in smaller sites and with the movement of birds within larger sites from disturbed to less disturbed areas.

[10] 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
[11] 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
[12] 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
[13] Riddington, R. *et al*. 1996. The impact of disturbance on the behaviour and energy budgets of Brent geese. *Bird Study* 43:269-279
[14] Gill, J.A., Sutherland, W.J. & Norris, K. 1998. The consequences of human disturbance for estuarine birds. *RSPB Conservation Review* 12: 67-72
[15] Underhill, M.C. *et al.* 1993. Use of Waterbodies in South West London by Waterfowl. An Investigation of the Factors Affecting Distribution, Abundance and Community Structure. Report to Thames Water Utilities Ltd. and English Nature. Wetlands Advisory Service, Slimbridge

- Evans & Warrington[16] found that on Sundays total water bird numbers (including shoveler and gadwall) were 19% higher on Stocker's Lake LNR in Hertfordshire, and attributed this to displacement of birds resulting from greater recreational activity on surrounding water bodies at weekends relative to week days.
- Tuite et al[17] used a large (379 site), long-term (10-year) dataset (September – March species counts) to correlate seasonal changes in wildfowl abundance with the presence of various recreational activities. They found that on inland water bodies shoveler was one of the most sensitive species to disturbance. The greatest impact on winter wildfowl numbers was associated with sailing/windsurfing and rowing.
- Pease et al[18] investigated the responses of seven species of dabbling ducks to a range of potential causes of disturbance, ranging from pedestrians to vehicle movements. They determined that walking and biking created greater disturbance than vehicles and that gadwall were among the most sensitive of the species studied.
- In a three-year study of wetland birds at the Stour and Orwell SPA, Ravenscroft[19] found that walkers, boats and dogs were the most regular source of disturbance. Despite this, the greatest responses came from relatively infrequent events, such as gun shots and aircraft noise Birds seemed to habituate to frequent 'benign' events such as vehicles, sailing and horses, but there was evidence that apparent habituation to more disruptive events related to reduced bird numbers – i.e. birds were avoiding the most frequently disturbed areas. Disturbance was greatest at high tide and on the Orwell, but birds on the Stour showed greatest sensitivity.

A number of studies have shown that birds are affected more by dogs and people with dogs than by people alone, with birds flushing 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. Nutrient-poor habitats such as heathland are particularly sensitive to the fertilising effect of inputs of phosphates, nitrogen and potassium from dog faeces[20] .

Underhill-Day[21] summarises the results of visitor studies that have collected data on the use of semi-natural habitat by dogs. In surveys where 100 observations or more were reported, the mean percentage of visitors who were accompanied by dogs was 54.0%.

However the outcomes of many of these studies need to be treated with care. For instance, the effect of disturbance is not necessarily correlated with the impact of disturbance, i.e. the most easily disturbed species are not necessarily those that will suffer the greatest impacts. It has been shown that, in some cases, the most easily disturbed birds simply move to other feeding sites, whilst others may remain (possibly due to an absence of alternative sites) and thus suffer greater impacts on their population[22]. A literature review undertaken for the RSPB[23] 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 facts have to be taken into account when attempting to predict the impacts of future recreational pressure on internationally designated sites.

Disturbing activities are on a continuum. The most disturbing activities are likely to be those that involve irregular, infrequent, unpredictable loud noise events, movement or vibration of long duration (such as those often associated with construction activities). Birds are least likely to be disturbed by

[16] Evans, D.M. & Warrington, S. 1997. The effects of recreational disturbance on wintering waterbirds on a mature gravel pit lake near London. International Journal of Environmental Studies 53: 167-182
[17] Tuite, C.H., Hanson, P.R. & Owen, M. 1984. Some ecological factors affecting winter wildfowl distribution on inland waters in England and Wales and the influence of water-based recreation. *Journal of Applied Ecology* 21: 41-62
[18] Pease, M.L., Rose, R.K. & Butler, M.J. 2005. Effects of human disturbances on the behavior of wintering ducks. *Wildlife Society Bulletin* 33 (1): 103-112.
[19] Ravenscroft, N. (2005) Pilot study into disturbance of waders and wildfowl on the Stour-Orwell SPA: analysis of 2004/05 data. Era report 44, Report to Suffolk Coast & Heaths Unit.
[20] Shaw, P.J.A., K. Lankey and S.A. Hollingham (1995) – Impacts of trampling and dog fouling on vegetation and soil conditions on Headley Heath. *The London Naturalist*, **74**, 77-82.
[21] Underhill-Day, J.C. (2005). A literature review of urban effects on lowland heaths and their wildlife. Natural England Research Report 623.
[22] Gill et al. (2001) - Why behavioural responses may not reflect the population consequences of human disturbance. *Biological Conservation,* **97**, 265-268
[23] Woodfield & Langston (2004) - Literature review on the impact on bird population of disturbance due to human access on foot. *RSPB research report* No. 9.

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.

It should be emphasised that recreational use is not inevitably a problem. Many internationally designated sites are also nature reserves managed for conservation and public appreciation of nature.

Where increased recreational use is predicted to cause adverse impacts on a site, avoidance and mitigation should be considered. Avoidance of recreational impacts at internationally designated sites involves location of new development away from such sites; Local Development Frameworks (and other strategic plans) provide the mechanism for this. Where avoidance is not possible, mitigation will usually involve a mix of access management, habitat management and provision of alternative recreational space.

- Access management – restricting access to some or all of a internationally designated site - is not usually within the remit of the Council and restriction of access may contravene a range of Government policies on access to open space, and Government objectives for increasing exercise, improving health etc. However, active management of access may be possible, for example as practised on nature reserves.
- Habitat management is not within the direct remit of the Council. However the Council can help to set a framework for improved habitat management by promoting cross-authority collaboration and S106 funding of habitat management. Provision of alternative recreational space can help to attract recreational users away from sensitive internationally designated sites, and reduce pressure on the sites. For example, some species for which internationally designated sites have been designated are particularly sensitive to dogs, and many dog walkers may be happy to be diverted to other, less sensitive, sites. However the location and type of alternative space must be attractive for users to be effective.

Epping Forest SAC, Lee Valley SPA and Ramsar site Richmond Park SAC, Wimbledon Common SAC and South West London Waterbodies SPA and Ramsar site are all located within the Greater London Authority boundary and as such are theoretically vulnerable to the effects of recreational pressure and/ or disturbances from construction activities resulting from development within the Greater London Authority boundary.

Further the following European designated sites located outside of the Greater London Authority boundary are located within sufficiently close proximity to the Authority that they could also be theoretically vulnerable to the effects of recreational pressure and/ or disturbances resulting from development within the Greater London Authority boundary:

- Wormley-Hoddesdonpark Woods SAC
- Mole Gap to Reigate Escarpment SAC

It is therefore necessary to perform an initial screening exercise to determine whether the London Plan contains policy measures that could lead to a likely significant effects, either alone or ‘in combination’ with other plans and projects, through recreational pressure, on these internationally designated sites.

3.1.2 Urbanisation

This impact is closely related to recreational pressure, in that they both result from increased populations within close proximity to sensitive sites. Urbanisation is considered separately as the detail of the impacts is distinct from the trampling, disturbance and dog-fouling that results specifically from recreational activity. The list of urbanisation impacts can be extensive, but core impacts can be singled out:

- Increased fly-tipping - Rubbish tipping is unsightly but the principle adverse ecological effect of tipping is the introduction of invasive non-native species with garden waste. Non-native species

can in some situations, lead to negative interactions with habitats or species for which internationally designated sites may be designated. Garden waste results in the introduction of invasive non-native species precisely because it is the 'troublesome and over-exuberant' garden plants that are typically thrown out[24]. Non-native species may also be introduced deliberately or may be bird-sown from local gardens.

- Cat predation - A survey performed in 1997 indicated that nine million British cats brought home 92 million prey items over a five-month period[25]. A large proportion of domestic cats are found in urban situations, and increasing urbanisation is likely to lead to increased cat predation

The most detailed consideration of the link between relative proximity of development to internationally designated sites and damage to interest features has been carried out with regard to the Thames Basin Heaths SPA.

After extensive research, Natural England and its partners produced a 'Delivery Plan' which made recommendations for accommodating development while also protecting the interest features of the internationally designated site. This included the recommendation of implementing a series of zones within which varying constraints would be placed upon development. While the zones relating to recreational pressure expanded to 5km (as this was determined from visitor surveys to be the principal recreational catchment for this internationally designated site), that concerning other aspects of urbanisation (particularly predation of the chicks of ground-nesting birds by domestic cats) was determined at 400m from the SPA boundary. The delivery plan concluded that the adverse effects of any development located within 400m of the SPA boundary could not be mitigated since this was the range over which cats could be expected to roam as a matter of routine and there was no realistic way of restricting their movements, and as such, no new housing should be located within this zone.

As such, screening is undertaken to determine whether the London Plan could lead to likely significant effects upon Lee Valley SPA and Ramsar site, Epping Forest SAC, Richmond Park SAC, Wimbledon Common SAC and South West London Waterbodies SPA and Ramsar site either alone or 'in combination' with other plans and projects, through impacts of urbanisation.

3.2 Atmospheric pollution

The main pollutants of concern for European sites are oxides of nitrogen (NOx), ammonia (NH_3) and sulphur dioxide (SO_2). Ammonia can have a directly toxic effect upon vegetation. In addition, greater NOx or ammonia concentrations within the atmosphere will lead to greater rates of nitrogen deposition to soils. An increase in the deposition of nitrogen from the atmosphere to soils is generally regarded to lead to an increase in soil fertility, which can have a serious deleterious effect on the quality of semi-natural, nitrogen-limited terrestrial habitats.

Table 2: Main sources and effects of air pollutants on habitats and species

Pollutant	Source	Effects on habitats and species
Acid deposition	SO_2, NOx and ammonia all contribute to acid deposition. Although future trends in S emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, it is likely that increased N emissions may cancel out any gains produced by reduced S levels.	Can affect habitats and species through both wet (acid rain) and dry deposition. Some sites will be more at risk than others depending on soil type, bed rock geology, weathering rate and buffering capacity.
Ammonia (NH_3)	Ammonia is released following decomposition and volatilisation of animal wastes. It is a naturally occurring trace gas, but levels have increased considerably with expansion in numbers of agricultural livestock. Ammonia reacts with acid pollutants such as the products of SO_2 and NO_X emissions to produce fine	Adverse effects are as a result of nitrogen deposition leading to eutrophication. As emissions mostly occur at ground level in the rural environment and NH_3 is rapidly deposited, some of the most acute problems of NH_3 deposition are for small relict nature reserves located in intensive agricultural landscapes.

[24] Gilbert, O. & Bevan, D. 1997. The effect of urbanisation on ancient woodlands. British Wildlife 8: 213-218.
[25] Woods, M. et al. 2003. Predation of wildlife by domestic cats Felis catus in Great Britain. Mammal Review 33, 2 174-188

	ammonium (NH_4+) - containing aerosol which may be transferred much longer distances (can therefore be a significant trans-boundary issue.)	
Nitrogen oxides NO_x	Nitrogen oxides are mostly produced in combustion processes. About one quarter of the UK's emissions are from power stations, one-half from motor vehicles, and the rest from other industrial and domestic combustion processes.	Deposition of nitrogen compounds (nitrates (NO_3), nitrogen dioxide (NO_2) and nitric acid (HNO_3)) can lead to both soil and freshwater acidification. In addition, NO_x can cause eutrophication of soils and water. This alters the species composition of plant communities and can eliminate sensitive species.
Nitrogen (N) deposition	The pollutants that contribute to nitrogen deposition derive mainly from NO_X and NH_3 emissions. These pollutants cause acidification (see also acid deposition) as well as eutrophication.	Species-rich plant communities with relatively high proportions of slow-growing perennial species and bryophytes are most at risk from N eutrophication, due to its promotion of competitive and invasive species which can respond readily to elevated levels of N. N deposition can also increase the risk of damage from abiotic factors, e.g. drought and frost.
Ozone (O_3)	A secondary pollutant generated by photochemical reactions from NO_x and volatile organic compounds (VOCs). These are mainly released by the combustion of fossil fuels. The increase in combustion of fossil fuels in the UK has led to a large increase in background ozone concentration, leading to an increased number of days when levels across the region are above 40ppb. Reducing ozone pollution is believed to require action at international level to reduce levels of the precursors that form ozone.	Concentrations of O_3 above 40 ppb can be toxic to humans and wildlife, and can affect buildings. Increased ozone concentrations may lead to a reduction in growth of agricultural crops, decreased forest production and altered species composition in semi-natural plant communities.
Sulphur Dioxide SO_2	Main sources of SO_2 emissions are electricity generation, industry and domestic fuel combustion. May also arise from shipping and increased atmospheric concentrations in busy ports. Total SO_2 emissions have decreased substantially in the UK since the 1980s.	Wet and dry deposition of SO_2 acidifies soils and freshwater, and alters the species composition of plant and associated animal communities. The significance of impacts depends on levels of deposition and the buffering capacity of soils.

Sulphur dioxide emissions are overwhelmingly influenced by the output of power stations and industrial processes that require the combustion of coal and oil. Ammonia emissions are dominated by agriculture, with some chemical processes also making notable contributions. NOx emissions, however, are dominated by the output of vehicle exhausts (more than half of all emissions). Within a 'typical' housing development, by far the largest contribution to NOx (92%) will be made by the associated road traffic. Other sources, although relevant, are of minor importance (8%) in comparison[26]. Emissions of NOx could therefore be reasonably expected to increase as a result of greater vehicle use as an indirect effect of the plan.

As such, screening is undertaken to determine whether the London Plan could lead to likely significant effects upon European designated sites both within and outside of the Authority boundary either alone or 'in combination' with other plans and projects as a result of poor air quality.

[26] Proportions calculated based upon data presented in Dore CJ et al. 2005. UK Emissions of Air Pollutants 1970 – 2003. UK National Atmospheric Emissions Inventory. http://www.airquality.co.uk/archive/index.php

3.2.1 The London Environment Strategy and The Mayor's Transport Strategy

Associated with the development of the London Plan, the Mayor has been producing a number of other strategies including several that are intended to improve air quality and reduce NOx and other emissions over the London Plan period and beyond. These include the London Environment Strategy and the Mayor's Transport Strategy. Although neither of these are part of the London Plan they are interlinked and it is therefore essential to take account of these parallel strategies in evaluating the impacts of the London Plan.

Travel in London Report Number 9[27] sets the existing context, stating that: '*Alongside this strong historic growth in travel demand, London has achieved an unprecedented 10.4 percentage point shift in mode share away from the private car towards public transport, walking and cycling – reflecting sustained investment in these modes, limitations on the capacity of the road network, and wider structural, social and behavioural factors. Private transport …accounted for just 36 percent of all trips in 2015, despite rapidly increasing population… In outer London, car mode share fell by three percentage points, from 50 to 47 percent, but with a six percentage point increase in public transport mode share… Much of the Capital's future growth will be focused on London's Opportunity and Growth Areas, which will feature dense, mixed-use developments with high public transport connectivity… Household car ownership levels are falling – in 2015/16, 43 percent of London households did not have access to a car*'.

Among the London actions in the Mayor's Transport Strategy over the duration of this London Plan period (i.e. commencing over the period to 2029/30) are Zero emission capable taxis, Town centre Zero Emission Zones, Electric single-deck buses and bus charging infrastructure, supporting low emission freight, delivery of 2000 electric vehicle charging points, further investment in charging and refueling infrastructure, 15 hydrogen fuelling stations installed in and around London, all new taxis zero emission capable, all new private hire vehicles zero emission capable, a pan-London approach to parking charges for zero emission vehicles, keep Congestion Charge under review and support borough measures, and an Extended Ultra Low Emissions Zone[28].

With specific regard to the effects of the Mayor's Transport Strategy on the pollutant of greatest relevance to this analysis (oxides of nitrogen or NOx) the Mayor's Transport Strategy Supporting Evidence Outcomes Summary Report[29] *states that 'By 2041, the number of trips made in London on an average day is expected to rise to 32 million, 5 million more than today. With the committed programme of investment but without the interventions proposed in the MTS* [emphasis added]*, the sustainable mode share is expected to rise from 64 per cent to 70 per cent. …NO_X emissions would reduce significantly as a result of the implementation of the Ultra-Low Emission Zone[30]…'* It then goes on to conclude that following implementation on the MTS '*… by 2041, travel will have risen by around a quarter but car travel will have fallen by around a third. There would be at least 3 million fewer car trips per day (compared to 2015) and 250,000 fewer cars owned in London. General traffic would fall by 10 to 15 per cent, a reduction of 6 million kilometres…'*

It concludes that '*… with the actions identified in this strategy, a sustainable mode share of 80 per cent can be achieved, meaning that eight in ten journeys made in London will be made on foot, by bicycle or by public transport and just two in ten by car, taxi, private hire vehicle or motorcycle'* and that '*Traffic reduction and improvements in vehicle technology will deliver large scale reductions of 94 percent in NOx'*. This forecast large scale reduction in NOx across London is thus the context for the delivery of the growth set out in the London Plan since it allows for the projected population and employment growth across London in the London Plan and beyond.

The air quality aim of the London Environment Strategy is that '*London will have the best air quality of any major world city by 2050*…' Among the Strategy's air quality actions are '*The Mayor will: …clean*

[27] Travel in London Report 9 (executive summary) https://tfl.gov.uk/corporate/publications-and-reports/travel-in-london-reports?intcmp=3120 [accessed 27/10/17]
[28] Source: TfL (2017), Draft Mayor's Transport Strategy. Available at: www.london.gov.uk/what-we-do/transport/our-vision-transport/draft-mayors-transport-strategy-2017
[29] https://tfl.gov.uk/corporate/publications-and-reports/travel-in-london-reports?intcmp=3120 [accessed 27/10/2017]
[30] [30] Page 27 of the main report adds that in the Reference Case '*Emissions of NOx reduce in the short term as Euro 6 / VI vehicles are adopted. Further reductions in emissions occur as taxis convert to zero emission capable (ZEC) vehicles and electric and hydrogen buses are deployed'*. Page 45 of the main report adds that '*There will also be 'knock on' benefits* [of the Ultra-Low Emission Zone] *outside central London as a result of cleaner vehicles passing through inner and outer London to access central London'.*

up London's transport system and phase out fossil fuels including diesel, making the whole bus fleet zero emission by 2037 at the latest and introducing the Ultra Low Emission Zone by 2019 to deter the most polluting vehicles from entering London' and the Mayor will *'… consider introducing a new Air Quality Positive standard so new building developments contribute to cleaning London's air.'*

3.2.2 Implications of the Ashdown Forest SAC Judicial Review

In early 2017, a Judicial Review brought by Wealden District Council against Lewes District Council and the South Downs National Park Authority with regard to the Ashdown Forest SAC[31] clarified the importance of considering 'in combination' air quality effects on European sites even when the contribution of a given Local Plan may be very small. The draft London Plan is a strategic multi-authority plan and thus by definition the analysis presented (and the traffic modelling and air quality improvement measures underlying the Mayor's Transport Strategy and related strategies) covers all 32 London boroughs collectively. . As such, in combination effects from authorities across London have been considered, as have those outside London.

3.3 Water abstraction

The East of England is generally an area of high water stress. It is particularly vulnerable to climate change now and in the future. It is already the driest region in the country and the predicted changes will affect the amount and distribution of rainfall, and the demand for water from all sectors. The average natural summer flows of rivers could drastically reduce; the period where groundwater resources are replenished could be shorter; and resources could become much more vulnerable. By 2050, climate change could reduce water resources by 10 -15% on an annual average basis, and reduce summer river flows by 50 -80%. Drought and floods may become more frequent in the future. The reliability of existing reservoirs, groundwater extractions and river intakes will change. The delivery of housing and economic development throughout the region could therefore result in adverse effects on many internationally designated sites in the region including those listed in preceding sections.

The Greater London Authority lies within the Affinity Water (Central region, WRZ 5) and Thames Water (London Region) supply areas. Approximately 60% of the Central region's water supply comes from groundwater sources (chalk and gravel aquifers) and 40% comes from surface water sources and imports from neighbouring water companies. Water is also exported to neighbouring water companies[32].

As such, screening is undertaken to determine whether the London Plan could lead to likely significant effects upon European designated sites both within and outside of the Authority boundary either alone or 'in combination' with other plans and projects as a result of increased water demand.

3.4 Water quality

The quality of the water that feeds European sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts:

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.

[31] http://www.bailii.org/ew/cases/EWHC/Admin/2017/351.html [accessed 26/10/2017]
[32] Affinity Water (2014) Final Water Resource management Plan, 2015-2040.

- 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.

Sewage and some industrial effluent discharges contribute to increased nutrients in the European sites and in particular to phosphate levels in watercourses.

As such, screening is undertaken to determine whether the London Plan could lead to likely significant effects upon European designated sites both within and outside of the Authority boundary either alone or ‘in combination’ with other plans and projects as a result of reduced water quality.

4. Initial Policy Sift

Appendix B presents an analysis of every policy in the London Plan with regard to whether likely significant effects would result. Most of the policies in the London Plan could be concluded not to pose risk of likely significant effects following this initial analysis. This was because those policies inherently presented no pathway of impact (e.g. the policy on burial spaces), confined themselves to setting out general principles, often without indicating a specific quantum of growth (e.g. the policy on retailing), or contained wording within the policy itself that addressed any possible likely significant effects (e.g. the policy on aviation). Policy SD1 on Opportunity Areas was also screened out following consideration of the location of those Opportunity Areas to European sites and their association with improved public and sustainable transport corridors.

As a result, only one policy needs further impact assessment in the main body of this document. This is Policy H1 (Increasing Housing Supply), which sets the ten-year housing growth targets for each borough. The remainder of this document therefore focusses on the implications of housing growth across London as set out in the new London Plan but also factors in consideration of expected employment growth over the same period even though there are no specific borough targets associated with a given policy. Employment growth is particularly relevant when considering air quality due to its effect on journeys to work. The report is presented with a chapter discussing each European site in London and a final chapter examining implications for European sites outside London.

5. Richmond Park SAC

5.1 Introduction

The site is approximately 850ha in size. Richmond Park has been managed as a royal deer park since the seventeenth century, producing a range of habitats of value to wildlife. In particular, Richmond Park is of importance for its diverse deadwood beetle fauna associated with the ancient trees found throughout the parkland. In addition the Park supports the most extensive area of dry acid grassland in Greater London.[33]

5.2 Reasons for Designation[34]

The site is designated as an SAC for the following Annex II species:

- Stag beetle *Lucanus cervus*

5.3 Current Pressures[35]

- None specifically identified in the Natural England Site Improvement Plan, although loss of habitat (dead wood) would affect the stag beetle population.

5.4 Conservation Objectives[36]

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

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.

5.5 Likely Significant Effects

The Habitats Regulations Assessments for the London Borough of Richmond upon Thames Core Strategy[37] and Local Plan[38] identified that Richmond Park SAC is located in an urban setting and as such is potentially vulnerable to recreational pressure and urbanisation. However, the site is designated as an SAC only for its stag beetle population, which is dependent upon mature trees and deadwood during its life stages. The presence of mature trees and deadwood would be affected by habitat management but not by development identified within the London Plan. The Air Pollution Information System[39] concludes that whilst the woodland habitats which stag beetle inhabit are vulnerable to nitrogen deposition, stag beetles themselves are not vulnerable to nitrogen deposition. The main reason cited is that '*nitrogen deposition is not believed to have a direct, major effect on tree growth in the UK'*[40] and thus the cycle of tree growth and death should continue, as should a continued supply of dead wood. Most of the effects of nitrogen deposition on woodlands are on features other than tree growth, such as ground flora diversity/structure, fungi and lichen populations.

[33] http://www.sssi.naturalengland.org.uk/citation/citation_photo/1002388.pdf [Accessed 16/02/2017]
[34] JNCC (2015) Natura 2000 Standard Data Form: Richmond Park SAC
[35] Natural England (2014) Site Improvement Plan: Richmond Park
[36] Natural England (2014) Conservation Objectives: Richmond Park SAC
[37] Baker Shepherd Gillespie (August 2007) Assessment of likely significant effect
[38] LUC (2016) London Borough of Richmond upon Thames. Publication Local Plan. Habitats Regulations Assessment Report.
[39] http://www.apis.ac.uk/ [accessed 26/10/2017]
[40] http://www.apis.ac.uk/node/965 [accessed 31/10/17]

In any event, the interventions outlined in the Mayor's Transport Strategy[41] will result in '*Traffic reduction and improvements in vehicle technology* [leading to] *large scale reductions of 94 per cent in NOx'* by 2041, with many of the interventions taking place during this London Plan period (i.e. by 2029/2030). . As such it can be concluded that the London Plan does not have any impact pathways that could interact with the SAC in a manner that would prevent it achieving its conservation objectives for stag beetle. Richmond Park SAC is therefore not discussed further within this document.

[41] Mayor's Transport Strategy Supporting Evidence Outcomes Summary Report https://tfl.gov.uk/corporate/publications-and-reports/travel-in-london-reports?intcmp=3120 [accessed 26/10/2017]

6. Wimbledon Common SAC

6.1 Introduction

The site is located within the London Boroughs of Wandsworth and Merton. It is approximately 350ha in size. Wimbledon Common supports the most extensive area of open, wet heath on acidic soil in Greater London. The site also contains a variety of other acidic heath and grassland communities reflecting the variations in geology, drainage and management. Associated with these habitats are a number of plants uncommon in the London area.[42]

6.2 Reasons for Designation[43]

The site is designated as an SAC for the following Annex I habitats:

- Northern Atlantic wet heaths with *Erica tetralix*
- European dry heaths

The site is designated as an SAC for the following Annex II species:

- Stag beetle *Lucanus cervus*

6.3 Current Pressures[44]

- Inappropriate behaviour by some visitors (e.g. collection and removal of dead wood)
- Habitat fragmentation
- Invasive species (specifically oak processionary moth *Thaumetopoea processionea*)
- Atmospheric pollution (nitrogen deposition)

6.4 Conservation Objectives[45]

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

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 and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

6.5 Recreational activity and urbanisation

A single London Plan policy H1 (Increasing housing supply) may result in increased urbanisation and demand for recreational greenspace, and has the potential to impact upon Wimbledon Common SAC.

Wimbledon Common SAC is designated mainly for its population of stag beetle *Lucanus cervus*, but is also designated for its wet and dry heathland. Similarly to Richmond Park SAC, the stag beetles are dependent on mature trees and deadwood. These supporting features are not susceptible to any

[42] http://www.sssi.naturalengland.org.uk/citation/citation_photo/1004317.pdf [Accessed 16/02/2017]
[43] JNCC (2015) Natura 2000 Standard Data Form: Wimbledon Common SAC
[44] Natural England (2014). Site Improvement Plan: Wimbledon Common.
[45] Natural England (2014) Conservation Objectives: Wimbledon Common SAC

adverse effects of the London Plan. The Site Improvement Plan for Wimbledon Common SAC identifies that removal of dead wood from the site by visitors could adversely affect the ability of the SAC to support stag beetle. However, this is a very specific action as a result of the personal decision of some visitors and cannot be attributed to growth generally.

The heathlands of the SAC are theoretically vulnerable to recreational pressure and Wimbledon Common generally (not just the SAC component) is a popular site for visitors. According to the most recent conservation report on the Wimbledon and Putney Commons website '*Being an unfenced Common the whole area is open to the public 24 hours a day throughout the year'*[46]*.*

However, according to habitat mapping on MAGIC (www.magic.gov.uk) the heathland is only found in the northern portion of the SAC. The Natural England condition assessment for the SAC states that most of the heath fails to meet key targets for quality (although the actual extent of the heathland is increasing due to a programme of tree and scrub removal). However, the condition assessment also concludes that there are no indications of significant damaging impacts to the heathland arising from non-native species, drainage, trampling, burning or disturbance. Therefore, although the heathland does not yet meet its key targets this does not appear to be attributable to recreational trampling and is more to do with a historic lack of traditional management. That has been extensively addressed in recent years with the result that *'there has certainly been no loss of heathland, removal of invasive trees and scrub has been carried out, a mosaic of age and structure for heather and gorse has been achieved, pernicious weeds have been kept under control and many areas of the Commons' heathland and acid grassland are now much improved from the condition they were in 10 years ago'*[47]*.* From reviewing this report, it appears that the main hotspots of recreational usage at Wimbledon Common SAC are not the heathland areas but the grassland areas, which do not represent any SAC features.

The London Plan policies were subjected to a high-level sieve (Appendix C) to identify those policies that could be dismissed as having no scope for a likely significant effect. As a result of this sieve the focus was placed on housing delivery. The London Plan sets a target for achieving 36,800[48] new dwellings in the London Boroughs of Wandsworth and Merton between 2019 and 2029. It is the delivery of new housing and the associated increase in population that presents the greatest scope for potential effects on the European site. Wandsworth and Merton Councils have adopted Local Plans that intend to deliver over 30,000 dwellings between c. 2015 and c. 2030[49]. Both boroughs Local Plans were subjected to Habitat Regulations Assessment and in both cases the HRAs concluded that the SAC features of Wimbledon Common were not likely to be affected by the large scale of housing planned for the boroughs either alone or in combination with other projects and plans. The Royal Borough of Kingston upon Thames lies adjacent to Wimbledon Common SAC and potential effects on this site were discussed in the HRA of their adopted Core Strategy. They also concluded that no likely significant effect would arise from growth in the borough, alone or in combination. The adopted Core Strategy plans to achieve at least 5,625 dwellings between 2013 and 2027. The new London Plan sets a target of 14,100 dwellings between 2019 and 2029. This is therefore a substantial step-change in the scale of housing delivery in Kingston upon Thames compared to the adopted Core Strategy.

According to Natural England's Countryside Stewardship Negotiation Schedule, the aim of the management of Lowland Heath is '*to provide a mosaic of vegetation which allows all heathland features to flourish, including pioneer heath and bare ground which benefits rarer invertebrates, birds, reptiles and plants'.* In response to this, some of the management prescriptions included in the Wimbledon and Putney Commons conservation report for 2016/17 include:

[46] https://www.wpcc.org.uk/downloads/nature/annual-conservation-report-.pdf
[47] Ibid
[48] Policy H1: Increasing Housing Supply provides for the following 10 year housing targets: Merton = 14,100; Wandsworth = 23,900
[49] This consists of 27,000 dwellings in Wandsworth between 2015 and 2030 and 4,800 in Merton between 2011 and 2026.

- The creation of bare ground sites through the scraping back of turves.
- The maintenance of a full range of age classes of gorse by cutting and removing arisings.
- The management of dense bracken stands and deep bracken litter layers by rotational cutting, bruising or spraying.

While clearly such measures to open up the sward can be taken to excess, the extent of historic scrub encroachment on the heathland, and these management prescriptions, suggests that in general a lack of physical disturbance and trampling (which would help to retard such encroachment), from both people and grazing animals, is more of a concern for the heathland areas than excessive footfall.

It is therefore considered that the scale of growth proposed for Merton, Kingston and Wandsworth in the London Plan is not likely to result in a significant recreational pressure effect on Wimbledon Common SAC alone or in combination with other plans and projects. This conclusion will need revisiting for any updates to be made to the Wandsworth, Kingston and Merton Local Plans in the light of the proposed development locations in those boroughs.

6.6 Air quality

The draft London Plan contains the following policies that could result in increased atmospheric pollution linking to impacts upon Wimbledon Common SAC:

- Policy H1: Increasing Housing Supply

This will operate along with expected growth in employment and jobs over the plan period although there is no total specified target quantum of employment growth in the London Plan. The Air Pollution Information System[50] concludes that whilst the woodland habitats which stag beetle inhabit are vulnerable to nitrogen deposition, whilst the stag beetles themselves are not.

An area of heathland within the SAC, from King's Mere to the north-east, does lie within 200m of the A3 and the A219 at Putney Heath. According to MAGIC the biggest blocks of heathland lie more than 200m from the roads and the total area within 200m of either road is c.3.5ha of heathland. According to the Air Pollution Information System (www.apis.ac.uk) average background nitrogen deposition rates within the SAC do exceed the minimum part of the critical load range for heathland at 15 kgN/ha/yr.

The draft London Plan contains fourteen policies that either make reference to improving air quality in London (other than greenhouse gases which are not directly relevant to impacts on European sites), or which will improve air quality via their delivery, demonstrating a strong commitment to improve air quality within the Greater London Authority boundary. Whilst it is noted that the aim is in general to improve air quality from a public health perspective, any improvement in air quality will have a positive knock-on-effect to European designated sites that are sensitive to atmospheric pollution. The relevant policies are:

- Policy SD1 - Opportunity Areas
- Policy SD4 – The Central Activities Zone (CAZ)
- Policy D1 - London's form and characteristics
- Policy D2 - Delivering good design
- Policy D7 - Public Realm
- Policy S1 - Developing London's social Infrastructure
- Policy S5 - Sports and Recreation Facilities
- Policy SI2 - Minimising greenhouse gas emissions
- Policy SI3 - Energy Infrastructure
- Policy T2 – Healthy Streets
- Policy T4 – Assessing and mitigating transport impacts

[50] http://www.apis.ac.uk/ [accessed 26/10/2017]

- Policy T7 - Freight and Servicing
- Policy T8 – Aviation

There is also a key policy within the London Plan to improve air quality within Greater London. This is Policy SI1 Improving Air Quality. The policy states: *'London's air quality should be significantly improved and exposure to poor air quality, especially for vulnerable people, should be reduced:*

1) Development proposals should not:
   a) lead to further deterioration of existing poor air quality
   b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits
   c) reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality
   d) create unacceptable risk of high levels of exposure to poor air quality.

2) Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality. Particular care should be taken with developments that are in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people.

3) The development of large-scale redevelopment areas, such as Opportunity Areas and those subject to an Environmental Impact Assessment should propose methods of achieving an Air Quality Positive approach through the new development. All other developments should be at least Air Quality Neutral.

4) Development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance115.

5) Air Quality Assessments (AQAs) will normally be required for all major developments, unless they can demonstrate that transport and building emissions will be less than the previous or existing use.

6) Development proposals should ensure that where emissions need to be reduced, this is done on-site. Where it can be demonstrated that on-site provision is impractical or inappropriate, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated.'

The interventions outlined in the Mayor's Transport Strategy[51] will result in '*Traffic reduction and improvements in vehicle technology* [leading to] *large scale reductions of 94 per cent in NOx'* across London by 2041, notwithstanding the expected population and employment growth in London over the same period (due to the London Plan and other initiatives), with many of the interventions taking place during this London Plan period (i.e. by 2029/2030). Among the London actions in the Mayor's Transport Strategy over the duration of this London Plan period are Zero emission capable taxis, Town centre Zero Emission Zones, Electric single-deck buses and bus charging infrastructure, supporting low emission freight, delivery of 2000 electric vehicle charging points, further investment in charging and refueling infrastructure, 15 hydrogen fuelling stations installed in and around London, all new taxis zero emission capable, all new private hire vehicles zero emission capable, a pan-London approach to parking charges for zero emission vehicles, keep Congestion Charge under review and support borough measures, and an Extended Ultra Low Emissions Zone[52].

Overall, the Mayor's air quality policies in the draft London Plan, The Mayor's Transport Strategy and the London Environment Strategy will improve air quality in London considerably over the plan period and beyond even allowing for growth in population and jobs, as will the specific major transport initiatives associated with the growth area around Wimbledon, such as delivery of Crossrail 2 and the Trams Triangle proposals referenced in Policy SD1 (Opportunity Areas).

6.7 Other plans and projects

As discussed earlier, Wimbledon Common SAC is situated in Wandsworth and Merton boroughs. Over 30,000 dwellings are likely to be delivered in these two boroughs up until 2030 according to

[51] Mayor's Transport Strategy Supporting Evidence Outcomes Summary Report https://tfl.gov.uk/corporate/publications-and-reports/travel-in-london-reports?intcmp=3120 [accessed 26/10/2017]
[52] Source: TfL (2017), Draft Mayor's Transport Strategy. Available at: www.london.gov.uk/what-we-do/transport/our-vision-transport/draft-mayors-transport-strategy-2017

adopted Local Plans. Both boroughs adopted Core Strategies that were subjected to Habitat Regulations Assessment. In both cases the HRAs concluded that the scale of housing planned for the boroughs would not result in a likely significant effect on Wimbledon Common SAC either alone or in combination with other projects and plans. Given this, it is considered that no 'in combination' effect would arise.

6.7.1 The Mayor's Transport Strategy

The Mayor's Transport Strategy[53] has a positive role in managing atmospheric pollution contributions within the Greater London Authority boundary. The Strategy acknowledges that motorised traffic is responsible for more than half of the air pollution within the city, with cars contributing around 14% of NOx. The main focus of the Strategy is to reduce atmospheric pollution emissions within the Strategy area via shifts in behaviours. The Strategy aims to shift Londoner's reliance on car transport to transport such as walking, cycling and public transport ('*The Mayor's aim for 2041 is for 80 per cent of Londoners' trips to be on foot, by cycle or by using public transport'* in comparison to 64% at present) to help reduce air pollution. The Strategy's Vision includes for 'Healthy Streets and Healthy People' which also encourages active transport methods such as walking and cycling to improve physical and mental health. It aims to move freight off London's road network and onto the rail network, and also to be a zero carbon city by 2050 to deliver air quality improvements. Whilst the target to improve air quality in London is driven from a health perspective, the knock-on effect will have a positive impact upon sensitive European designated sites.

Of specific note within the Mayor's Transport Strategy:

- Proposal 20 of the Strategy provides for support from TfL for borough-wide traffic-reduction strategies,
- Proposal 21 of the Strategy identifies that TfL will work with boroughs who wish to develop and implement appropriate traffic demand management measures.
- Additional measures within the Strategy such as incentives for residents to give up parking spaces (thus discouraging car use) and higher parking charges for the most polluting cars could help encourage the use of cleaner vehicles and improve air quality.
- Reducing and retiming freight through joint procurement could help take nonessential trips off the streets, or move them outside peak times, as could encouraging more delivery points for personal packages away from central areas and closer to where people live.
- Policy 5 of the Strategy identifies that TfL will work with the boroughs to take action to reduce emissions – in particular diesel emissions – from vehicles on London's streets, to improve air quality and support London reaching compliance with UK and EU legal limits as soon as possible. This will include measures such as retrofitting vehicles with equipment to reduce emissions, promoting electrification, road charging, the imposition of parking charges/ levies, responsible procurement, the making of traffic restrictions/ regulations and local actions and the introduction of 'real-world' testing for cars and vans into the 'Euro 6' European vehicle-type approval process should mean that new vehicles are far less polluting than previous models.

All these provisions will go a long way towards improvements in air quality within the Greater London Authority area, coupled as they are with policies in the London Plan itself as well as the Mayor's Environment Strategy. At present the Mayor's Transport Strategy has not yet been adopted, but to do so would have to not result in likely significant effects upon European designated sites, either alone or in combination. Rather, it will play a crucially important part in improving air quality across London notwithstanding expected growth in population and employment.

[53] Mayor of London. Mayor's Transport Strategy. Draft for public consultation June 2017

7. Epping Forest SAC

7.1 Introduction

70% of this 1,600 hectare site consists of broadleaved deciduous woodland, and it is one of only a few remaining large-scale examples of ancient wood-pasture in lowland Britain. Epping Forest supports a nationally outstanding assemblage of invertebrates, a major amphibian interest and an exceptional breeding bird community.

7.2 Reasons for Designation[54]

Epping Forest qualifies as a SAC for both habitats and species. The site contains Annex I habitats of:

- Beech forests on acid soils with *Ilex* and sometime *Taxus* in the shrublayer.
- Wet heathland with cross-leaved heath; and
- Dry heath

The site contains Annex II species:

- Stag beetle *Lucanus cervus*.

7.3 Current Pressures[55]

- Air pollution
- Public disturbance
- Inappropriate water levels
- Water pollution

7.4 Conservation Objectives

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 and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

7.5 Recreational activity and urbanisation

Epping Forest SAC receives a great many visits per year (estimated at over 4 million) and discussions with the Corporation of London (who manage Epping Forest) have identified long-standing concerns about increasing recreational use of the forest resulting in damage to its interest features. A programme of detailed formal visitor surveys has been undertaken in recent years. A 2011 visitor survey report[56] identified that those living within 2km of the edge of the Forest comprise at least 95% of all visitors. However, further analysis of these data was undertaken by Footprint Ecology in

[54] JNCC (2015) Natura 2000 Standard Data Form: Epping Forest SAC
[55] Natural England (2016). Site Improvement Plan: Epping Forest SAC
[56] Alison Millward Associates. 2011. Epping Forest Visitor Survey 2011: Results Summary

September 2016[57]. This further analysis identified that, although the scale of the data was substantial (in 2014 alone almost 900 questionnaires were returned) the catchment appeared to be larger than suggested by previous reports. Based on 2014 data it appeared that 89% of survey respondents originated from within 5km of the SAC and 76% originated from within 4km. Some uncertainties with the data were identified as follows:

- It is not clear to what extent the postcodes reflect a random sample of visitors due to the nature of the survey method, which enabled completion online as well as collection of data from people who attended the visitor centres, rather than based on encounters with people on footpaths and at car parks across the site. Therefore, although the scale of response is good, respondents are a self-selecting group to some extent. However, in order to try and address this staff and volunteers targeted visitors from the harder to reach groups such as under 16s, ethnic minorities, the elderly and disabled, at the busier locations with the hard copy version to be completed by themselves or with help from staff and volunteers; and
- The data show an uneven distribution of postcodes from which visitors originated. It showed that the southern portion of Epping Forest SAC (427ha of the total area of 2476ha), receives more than half of visitors, who focus on a few key honeypot sites (Wanstead Flats, Bush Wood, Wanstead Park, Hollow Ponds, Connaught Water and High Beach), with the northern portion of the SAC receiving a smaller proportion of visitors. This is not really surprising given that far more people live within 5km of the southern part of the SAC than the northern part. However, it does mean that, while the data indicate that 89% of 2014 survey respondents live within 5km this may over-estimate the catchment for the northern part of the SAC within Epping Forest district.

It should be noted that the distances mentioned above are distances measured from the SAC boundary because interview location wasn't always known and in many cases questionnaires were completed online or at visitor centres rather than out on site. This survey therefore applied a slightly different method to those for other European sites, where visitor origin data has been typically been presented as the distance between the interview location (which is usually an entry point such as a car park) and home postcode. This doesn't change the distribution of respondents' post-codes around Epping Forest SAC, but means that the catchment information from the Epping Forest visitor surveys is not directly comparable to data collected on other European sites by other methods.

However, the distribution of postcodes revealed by the analysis seems logical and intuitive as these distances cover all the larger settlements surrounding the SAC. There is therefore no reason to assume at this point that the core catchment is either much larger or much smaller, although a recreational visitor survey of the SAC is being undertaken at time of writing (October 2017) on behalf of the East Hertfordshire/South Essex authorities, which will refine understanding of core catchments. The results of that survey will be reflected in an update to this HRA. Natural England confirmed to Epping Forest District Council and its partners in August 2017 that the 75th percentile (i.e. the zone within which 75% of visitors derive) should define the ‘core catchment’ and thus the zone within which mitigation for recreational pressure will be required. Based on current data this is 4km. Since that zone crosses numerous authority boundaries, and the SAC itself straddles London and Essex, this analysis is inherently ‘in combination’.

A single London Plan policy (Policy H1: Increasing Housing Supply) may result in increased urbanisation and demand for recreational greenspace, and has the potential to impact upon Epping Forest SAC.

The London Boroughs of Redbridge and Waltham Forest have the SAC within their boundaries and appear from existing data to be major points of visitor origin. The Forest Gate area of London Borough of Newham is also a focal point of visitor origin, although this is only a small proportion of the entire borough. Overall, the main points of visitor origin in London appear to be Waltham Forest and Redbridge (with residents from across both boroughs visiting the SAC for recreation). Outside London the southern part of Epping Forest District is a major source of visitors, particularly the chain of settlements along the eastern side of the SAC: Loughton, Theydon Bois, and Buckhurst Hill. Current evidence indicates that these three authorities are the residential areas for more than 50% of visitors to the SAC. Therefore, significant increases in housing and residents within these authorities are likely to have a particularly significant impact on future visitor numbers within the SAC without steps being

[57] Footprint Ecology (2016). Initial review of current visitor data for Epping Forest

taken to accommodate those visitors through enhanced visitor management and provision of alternative natural visitor destinations (where appropriate and possible).

Based on their most recently published draft Local Plan at time of writing (October 2016), Epping Forest District Council expects to deliver approximately 5,000 net new dwellings within 4km of the SAC over the period to 2033[58]. The London Plan targets identify that 36,400 dwellings are expected to be delivered in the London Boroughs of Redbridge and Waltham Forest between 2019 and 2029 (19,700 in Redbridge and 18,200 in Waltham Forest). This compares to 16,854 between 2015 and 2030 in the submitted Redbridge Local Plan and 10,320 between 2011 and 2026 in the adopted Waltham Forest Core Strategy. Therefore the new draft London Plan targets do require a significantly increased rate of housing delivery for both boroughs, beyond that in their submitted or adopted plans. However, provided that adequate mitigation is delivered, in terms of enhanced access and visitor management within the SAC and/or significant enhanced access to other areas of natural greenspace that would be used as an alternative there is no *a priori* reason to conclude that these housing targets are inherently unachievable without an adverse effect on the SAC.

All the dwellings within Waltham Forest will be within 4km of the SAC; it is not known at this level how many dwellings within Redbridge will be located within 4km of the SAC as that is a decision to be made at the Local Plan level. Clearly however there can be expected to be a substantial net increase in visitors to the SAC as a result of growth in all three authorities (Waltham Forest, Redbridge and Epping Forest authorities), although that needs to be balanced against the significantly increased recreational resource to be delivered in Waltham Forest for example through the creation of the newly opened Walthamstow Wetlands, which provides public access to a large previously inaccessible area.

Epping Forest District Council is already aware of the contribution to visitor activity within the SAC that is likely to be made by new residents who live within 3-4km of the site. The Council already has a Memorandum of Understanding agreed with Natural England and the Corporation of London, which commits it, and partners in the East Hertfordshire/South Essex Housing Market Area, to undertaking an updated visitor survey and then devising a mitigation strategy for addressing recreational pressure arising from its new Local Plan, to be in place before that plan is adopted. It is aiming to work within the London Boroughs of Waltham Forest and Redbridge (the main other contributing authorities based on current evidence) to obtain their commitment to working collaboratively to manage recreation within the SAC and has had discussions with both authorities.

At time of writing the recreation mitigation strategy is in the early stages of being devised but is likely to involve a tariff, or tariffs, to be applied to net new dwellings within a chosen zone around the SAC. The funds obtained by those tariffs will be directed towards a combination of access management, increased ranger capacity and potentially additional greenspace provision to ensure that population growth is sustainably managed.

7.5.1 Recommendations for the London Plan

In the first (internal) draft of this HRA the following recommendations were made for the London Plan:

1. The individual local authorities are best-placed to devise the mitigation strategy and per dwelling tariffs in a manner that both mitigates for any effect on the SAC and works most appropriately with the circumstances of their populations. However, there is a role for the Greater London Authority and London Plan in the process: The London Plan should encourage the London Boroughs (particularly Waltham Forest and Redbridge and possibly Newham and Enfield) to participate as necessary in this mitigation strategy that is already being devised.

2. The London Plan already recognises that the housing targets set for the London Boroughs are challenging. While boroughs must make every endeavour to deliver those targets, the London Plan should acknowledge that Epping Forest SAC, its sensitivity to recreational pressure and the high level of protection it receives represent a factor for the London Boroughs of Redbridge and Waltham Forest that does not exist for most other London boroughs. There is no *a priori* reason to believe that the recreation management strategy being devised for the SAC would not be able to address the impacts of the housing growth

[58] At time of writing the Regulation 19 Local Plan has not yet been published for consultation

planned for both authorities, but monitoring of progress with the delivery of these housing targets in parallel with the success of the mitigation solution may trigger a need to revise them in the future. It would be appropriate to reflect this potential need for future revision in the London Plan text.

If the London Plan incorporates these recommendations, then it is considered that the London Plan will have a framework in place to enable delivery of necessary measures to avoid an adverse recreational pressure effect on this SAC through recreational pressure and urbanisation.

7.6 Air quality

Epping Forest SAC is known to be adversely affected by relatively poor local air quality alongside the roads that traverse the SAC and this has been demonstrated to have negatively affected the epiphytic lichen communities of the woodland as well as other features. The nature of the road network around Epping Forest is such that journeys between a number of key settlements around the Forest by car, van or bus effectively necessitate traversing the SAC. Modelling undertaken for the South Essex/East Hertfordshire Housing Market Area authorities in 2016 indicated that even on B roads through the SAC vehicle flows are substantial (e.g. a 2014 base case of c.20,000 AADT on the B1393 with roadside NOx concentrations of 60µgm^{-3}, twice the critical level) while the A121 between Wake Arms Roundabout and the M25 had 2014 base flows of 25,000 AADT. Moreover, lengthy queues are known to build around most arms of Wake Arms Roundabout, which increases emissions compared to the same volume and composition of free-flowing traffic.

Modelling undertaken for the South Essex/East Hertfordshire HMA (due to be updated in 2018) identified that traffic flows on some roads through Epping Forest are forecast to increase substantially to 2033. For example, flows on the B1393 in 2033 are forecast to be over 6,000 AADT higher than in 2014. The currently available modelling forecasts that expected improvements in background NOx concentrations and nitrogen deposition rates, and vehicle emissions, to 2033 are likely to result in a net improvement in air quality in the SAC notwithstanding this growth in traffic due primarily to national initiatives such as improvements in vehicle emission factors and the effects of the Government's July 2017 announcement to ban the sale of new petrol or diesel cars and vans from 2040 (which is likely to affect sales of such vehicles before that date). However, the nitrogen deposition rates and critical levels on several modelled roads would remain well above the critical level (for NOx) and critical load (for nitrogen deposition) due primarily to existing traffic. Given this, the HMA authorities have agreed to work collaboratively with Essex County Council, Hertfordshire County Council, Highways England, Natural England and the Corporation of London (all signatories to a Memorandum of Understanding on the matter) to devise a strategy to a) address the traffic flows through the SAC and b) facilitate improved roadside air quality in the SAC.

Journey to work census data from 2011 indicate that the London boroughs most likely to contribute to NOx concentrations and nitrogen deposition within Epping Forest SAC, arising from road traffic, are the London Boroughs of Redbridge, Waltham Forest and possibly Enfield. Not only do Redbridge and Waltham Forest both include parts of the SAC that lie within 200m of significant roads but 6% of Redbridge journeys to work are west to Waltham Forest while 5% of Waltham Forest journeys are east to Redbridge. Internal borough journey's to work are also likely to involve these roads. Approximately 5% of Enfield's journeys to work are to Waltham Forest, Redbridge or Epping Forest District which could involve roads within 200m of the SAC. This appears to be the most significant London Borough other than Redbridge and Waltham Forest. Authorities outside London, notably the Borough of Broxbourne and Epping Forest District are also likely to contribute considerably to journeys to work through Epping Forest SAC.

Based on their most recently published draft Local Plan (October 2016), Epping Forest District Council expects to deliver approximately 5,000 net new dwellings within 4km of the SAC over the period to 2033. The London Plan targets identify that 37,900 dwellings are expected to be delivered in the London Boroughs of Redbridge and Waltham Forest between 2019 and 2029 (19,700 in Redbridge and 18,200 in Waltham Forest). This compares to 16,854 between 2015 and 2030 in the submitted Redbridge Local Plan and 10,320 between 2011 and 2026 in the adopted Waltham Forest Core Strategy. Therefore the new draft London Plan targets do require a significantly increased rate of housing delivery for both boroughs, beyond that in their submitted or adopted plans. The HMA

authorities are in discussion with the London Boroughs of Waltham Forest and Redbridge as it is probable both authorities could also play a major part in delivering improvement measures.

The draft London Plan contains fourteen policies that either make reference to improving air quality in London (other than greenhouse gases which are not directly relevant to impacts on European sites), or which will improve air quality via their delivery, demonstrating a strong commitment to improve air quality within the Greater London Authority boundary. Whilst it is noted that the aim is in general to improve air quality from a public health perspective, any improvement in air quality will have a positive knock-on-effect to European designated sites that are sensitive to atmospheric pollution. The relevant policies are:

- Policy SD1 - Opportunity Areas
- Policy SD4 – The Central Activities Zone (CAZ)
- Policy D1 - London's form and characteristics
- Policy D2 - Delivering good design
- Policy D7 - Public Realm
- Policy S1 - Developing London's social Infrastructure
- Policy S5 - Sports and Recreation Facilities
- Policy SI2 - Minimising greenhouse gas emissions
- Policy SI3 - Energy Infrastructure
- Policy SI1 - Improving Air Quality
- Policy T2 – Healthy Streets
- Policy T4 – Assessing and mitigating transport impacts
- Policy T7 - Freight and Servicing
- Policy T8 – Aviation

These policies in general encourage measures to improve air quality. This includes: encouraging the use of sustainable transportation (such as cycling, walking, taking public transport), that have potential to reduce atmospheric pollution contributions; minimising greenhouse gas emissions (Policy SI2 (Minimising greenhouse gas emissions) states:

'…emissions from construction and operation, and minimising both annual and peak energy demand in accordance with the following energy hierarchy:

1) *Be lean: use less energy and manage demand during construction and operation.*

2) *Be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly. Development in Heat Network Priority Areas should follow the heating hierarchy in SI 3 Energy Infrastructure.*

3) *Be green: generate, store and use renewable energy on-site..'*

There is also a key policy within the London Plan to improve air quality within Greater London. This is Policy SI1 (Improving Air Quality) which states:

'*A London's air quality should be significantly improved and exposure to poor air quality, especially for vulnerable people, should be reduced:*

1) Development proposals should not:

a) lead to further deterioration of existing poor air quality

b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits

c) reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality

d) create unacceptable risk of high levels of exposure to poor air quality.

2) Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality. Particular

care should be taken with developments that are in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people.

3) The development of large-scale redevelopment areas, such as Opportunity Areas and those subject to an Environmental Impact Assessment should propose methods of achieving an Air Quality Positive approach through the new development. All other developments should be at least Air Quality Neutral.

4) Development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance115.

5) Air Quality Assessments (AQAs) will normally be required for all major developments, unless they can demonstrate that transport and building emissions will be less than the previous or existing use.

6) Development proposals should ensure that where emissions need to be reduced, this is done on-site. Where it can be demonstrated that on-site provision is impractical or inappropriate, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated.'

The interventions outlined in the Mayor's Transport Strategy[59] will result in '*Traffic reduction and improvements in vehicle technology* [leading to] *large scale reductions of 94 per cent in NOx'* across London by 2041, notwithstanding the expected population and employment growth in London over the same period (due to the London Plan and other initiatives), with many of the interventions taking place during this London Plan period (i.e. by 2029/2030). Among the London actions in the Mayor's Transport Strategy over the duration of this London Plan period are Zero emission capable taxis, Town centre Zero Emission Zones, Electric single-deck buses and bus charging infrastructure, supporting low emission freight, delivery of 2000 electric vehicle charging points, further investment in charging and refueling infrastructure, 15 hydrogen fuelling stations installed in and around London, all new taxis zero emission capable, all new private hire vehicles zero emission capable, a pan-London approach to parking charges for zero emission vehicles, keep Congestion Charge under review and support borough measures, and an Extended Ultra Low Emissions Zone[60].

Overall, the Mayor's air quality policies in the draft London Plan, The Mayor's Transport Strategy and the London Environment Strategy is expected to result in a considerable net improvement in air quality in London (including the Epping Forest area) considerably over the plan period and beyond, even allowing for growth in population and jobs over the same time period and beyond national initiatives.

Transport for London (and the Mayor's Transport Strategy) would be able to play a valuable role in assisting in the delivery of air quality improvement measures and this would also comply with the Mayor's overall objectives to substantially improve air quality in London and the delivery of the Mayor's Transport Strategy objectives.

In addition, the supporting text for Policy SD1 Opportunity Areas references opportunity areas in the Lee Valley Growth Corridor which would contribute to improved air quality around the SAC:

[59] Mayor's Transport Strategy Supporting Evidence Outcomes Summary Report https://tfl.gov.uk/corporate/publications-and-reports/travel-in-london-reports?intcmp=3120 [accessed 26/10/2017]

[60] Source: TfL (2017), Draft Mayor's Transport Strategy. Available at: www.london.gov.uk/what-we-do/transport/our-vision-transport/draft-mayors-transport-strategy-2017

- The Lee Valley corridor is related to the potential unlocking by Crossrail 2 and this in itself may be positive for local air quality including around the northern part of the corridor near Epping Forest SAC. Similarly, broadening employment opportunities in Stoke Newington, Blackhorse Lane etc. could also be positive by reducing the need for residents to travel out of the borough to work and thus reduce traffic on the road network.
- New Southgate is relatively close to Epping Forest SAC from a traffic/air quality point of view. However, the Opportunity Area is clearly linked to provision of greater public transport and Crossrail 2 (as well as undergrounding the north circular). All of these are potentially positive for air quality in the SAC.

7.6.1 Recommendations for the draft London Plan

However, there is a further role for the Greater London Authority and London Plan in the process and this led to the following recommendations in the first (internal) draft of this HRA:

1. The London Plan should direct the London Boroughs (particularly Waltham Forest and Redbridge) to participate as necessary in the traffic and air quality strategy that is in the early stages of being devised for the SAC. A framework for this involvement is already provided in Policy T4 (Assessing and Mitigating Transport Impacts) which makes a direction for transport assessments and mitigation measures. It is recommended that this part of the policy is expanded upon to make specific reference to the potential need for such assessments and measures to improve conditions in internationally important wildlife sites around London, particularly Epping Forest SAC. This would then constitute a direction to the London boroughs to participate as necessary in the strategic multi-authority air quality impact assessments and solutions for Epping Forest SAC, which is already underway.

2. The draft London Plan already recognises that the housing targets set for the London Boroughs are challenging. While boroughs must make every endeavour to deliver those targets, the London Plan should acknowledge that Epping Forest SAC and its sensitivity to recreational pressure represents a factor for the London Boroughs of Redbridge and Waltham Forest that does not exist for most other London boroughs. There is no reason to believe that the strategy being devised for the SAC would not be able to address the impacts of the housing growth planned for both authorities, but monitoring of progress with the delivery of these housing targets in parallel with the success of the solution to improve air quality in the SAC may trigger a need to revise them in the future. That should be reflected in the London Plan text regarding Policy H1 and the ten-year housing targets.

In response to the first of these recommendations paragraph 10.4.1 of the London Plan, associated with Policy T4 (Assessing and Mitigation Transport Impacts) was amended to include the following: '*Consideration of the potential impacts on internationally important wildlife sites should also be appropriately assessed*'.

If these recommendations are incorporated, then it is considered that the draft London Plan will have a framework in place to enable delivery of necessary measures to avoid an adverse air quality effect on this SAC.

7.7 Other plans and projects

7.7.1 The Mayor's Transport Strategy

As discussed in section 6.7.1 the Mayor's Transport Strategy has positive provision to improve air quality within the Greater London Authority boundary. It should be noted that the new Transport strategy has not yet been formally adopted. In particular, Policy 5 of the Strategy identifies that TfL will work with the boroughs to take action to reduce emissions from vehicles on London's streets, to improve air quality and support London reaching compliance with UK and EU legal limits as soon as possible. This will include measures such as retrofitting vehicles with equipment to reduce emissions, promoting electrification, road charging and the imposition of parking charges/ levies. These would play a crucially important part in improving air quality across London notwithstanding expected growth in population and employment and be useful tools to improve air quality in Epping Forest.

8. Lee Valley SPA and Ramsar site

8.1 Introduction

The Lee Valley is a series of wetlands and reservoirs located in the north east of London within the Lee Valley Regional Park. The site occupies approximately 24 km of the valley and comprises embanked water supply reservoirs, sewage treatment lagoons and former gravel pits that support a range of man-made, semi-natural and valley bottom habitats that support wintering wildfowl.

8.2 Reasons for Designation

Lee Valley qualifies as an SPA for its Annex I species[61]:

Wintering:
- Bittern *Botaurus stellaris*

Migratory:
- Gadwall *Anas strepera*
- Shoveler *Anas clypeata*

Lee Valley qualifies as a Ramsar site under the following criterion[62]:

- Criterion 2: The site supports the nationally scarce plant species whorled water-milfoil *Myriophyllum verticillatum* and the rare or vulnerable invertebrate *Micronecta minutissima* (a water-boatman); and,
- Criterion 6: species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation):
- Species with peak counts in spring/autumn: Northern shoveler *Anas clypeata*
- Species with peak counts in spring/autumn: Gadwall *Anas strepera*

8.3 Current Pressures[63]

- Water pollution
- Hydrological changes
- Recreational disturbance including angling
- Atmospheric pollution

8.4 Conservation Objectives[64]

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

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

[61] JNCC (2015). Natura 2000 Standard Data Form: Lee Valley SPA
[62] JNCC (2008). Information Sheet on Ramsar Wetlands: Lee Valley Ramsar site.
[63] Natural England (2014) Site Improvement Plan: Lee Valley
[64] Natural England (2014) Conservation Objectives: Lee Valley

8.5 Recreational activity

A single London Plan policy (Policy H1: Increasing Housing Supply) may result in increased urbanisation and demand for recreational greenspace, and has the potential to impact upon the SPA/Ramsar site.

Within the past five to ten years landowners/managers within the SPA (RSPB, the local Wildlife Trust, the Regional Park Authority and Thames Water) have undertaken initiatives both to facilitate and to promote greater public access to the SPA for recreation. Changing public access is fundamentally linked with increasing visitor numbers given that one of the primary reasons for changing the access is to attract more visitors. Most recently, Thames Water's flagship Walthamstow Wetlands project which opened in October 2017, aims to substantially increase public access to, and use of, Walthamstow Reservoirs, which were little used for recreation and had only been accessible by prior arrangement. Clearly, the various owners and managers of the SPA components would not have embarked on these initiatives (or have been permitted to do it by competent authorities) if it was expected that by providing and promoting greater public access at this location they would risk an adverse effect on the SPA. Recreational disturbance is therefore not considered an issue for growth in London since Walthamstow Reservoirs are currently considered an underused recreational resource and is thus has been opened up to the public as part of the carefully planned Walthamstow Wetlands project. Since Walthamstow Reservoirs has only recently opened, future updates to the London Plan and any HRA work will need to take account of the results of planned long-term visitor monitoring of the site.

8.5.1 Recommendation for the draft London Plan

The draft London Plan supporting text regarding Opportunity Areas in the Lee Valley Growth Corridor (paragraph 2.1.31, Policy SD1) states that the growth corridor planning framework '*… should also protect and improve access to the Lee Valley Regional Park and reservoirs'*. Clearly there are numerous initiatives already in progress to increase access to the Lee Valley area for recreation (e.g. the Walthamstow Wetlands project). For robustness it was recommended in the first (internal) draft of this HRA that the word '*sustainable'* be inserted before '*access'* as, theoretically, too much unmanaged access could start to cause harm in the longer term, although there are no current concerns. This change has since been made to paragraph 2.1.31 of the London Plan.

8.6 Air quality

The only parts of the Lee Valley SPA/Ramsar site in London are Walthamstow Reservoirs. These are sealed reservoirs that are internationally designated for their populations of wintering gadwall and shoveler ducks. The Air Pollution Information System (APIS) website provides details of critical loads of atmospheric pollution which if exceeded could lead to habitat damage. However, no critical loads are provided for the habitat - open standing water – on which the bird species forming the reason for the international designation rely. The APIS website states that *'No Critical Load has been assigned to the EUNIS classes for meso/eutrophic systems. These systems are often phosphorus limited; therefore decisions should be taken at a site specific level'*. In this case, no likely significant effects are anticipated since the South West London Waterbodies SPA, like most freshwater environments, is essentially phosphate limited, rather than nitrogen limited, meaning that it is phosphate availability that controls the growth of macrophytes and algae. The London Plan will not affect phosphate availability within Walthamstow Wetlands.

8.7 Water resources

Walthamstow Reservoirs SSSI is a series of sealed reservoirs that are part of the water supply infrastructure for London. As such, water levels are directly controllable by the site manager (Thames Water) and they have been largely responsible for creating the circumstances that have led to the site being of international importance for gadwall and shoveler. Moreover, Thames Water has invested significantly in water supply infrastructure to ensure that London's water supply is as resilient as possible. This includes the construction of an operational desalination plant at Beckton in north-east London. Further, there are no wastewater treatment works that have catchments within the GLA

boundary that discharge into the River Lee, or its tributaries.[65] Therefore, it is considered that the draft London Plan will not result in levels of water usage that would require Thames Water to establish inappropriate water levels in Walthamstow Reservoirs or general water quality within the River Lee.

8.8 Other plans and projects

In addition to the areas of the SPA/Ramsar site in London, there are two parts of the SPA/Ramsar site within East Herts District: Amwell Quarry (Amwell Nature Reserve) and Rye Meads Nature Reserve. These are managed by Hertfordshire and Middlesex Wildlife Trust and the RSPB. Both reserves are laid out in considerable detail with a network of hides (ten at Rye Meads, three at Amwell) and clearly marked footpaths/boardwalks with screening vegetation that are specifically laid out and designed to route people away from the sensitive areas and minimise disturbance while at the same time accommodating high numbers of visitors. Moreover, no dogs are allowed (except registered assistance dogs) and the wet and marshy/open water nature of the habitats on site inherently limits off-track recreational activity, rendering it difficult to accomplish and unappealing. For these reasons it is considered that the vulnerability of Amwell Nature Reserve and Rye Meads Nature Reserve to the potential adverse effects of recreational activity that can affect other less well-managed sites is very low. Within Turnford and Cheshunt Pits, which lie outside East Herts but within the Lee Valley Country Park, recreational activity is similarly regulated through zoning of water bodies. The majority of the site is already managed in accordance with agreed management plans in which nature conservation is a high or sole priority.

The HRA of the Lee Valley Park Development Framework (UE Associates, 2009) was able to conclude that there would be no likely significant effect of the numerous measures and policies intended to increase public accessibility to the Regional Park (including those areas of international importance) due to the Regional Park Authority's overriding commitment to managing the Regional Park, their past experience of delivering increased access while avoiding disturbance and their ongoing commitment to visitor access management in the more sensitive parts of the Park. In 2009 the East Herts Local Plan (then called the Core Strategy) was already in development and had been made public; the Regional Park Authority HRA specifically mentions that the conclusion did take into account effects 'in combination' with the East Herts Core Strategy and other surrounding local authorities. The Lee Valley Regional Park Authority were therefore aware that there would be considerable housing and population growth in surrounding local authorities and took that into account in their conclusion of no likely significant effect (including the Development Framework proposals to increase and promote public access to parts of the SPA). If proposals to promote and deliver greater recreational use of the SPA/Ramsar site can be concluded as being unlikely to lead to a significant effect, then logically, changes in the number of residents within the visitor catchment of the Park can be screened out.

[65] Thames Water's Abbey Mills Pumping Station is on the River Lee but since construction of the Lee Tunnel its wastewater is transferred to Beckton STW on the River Thames for treatment and discharge.

9. South West London Waterbodies SPA and Ramsar

9.1 Introduction

The South-West London Waterbodies SPA comprises several gravel pits and reservoirs scattered around Staines in Greater London. Hundreds of migratory wintering gadwall *Anas strepera* and shoveler *Anas clypeata* spend the winter on and around these waterbodies. Their numbers are significant at a European level. Some sites appear to be favoured by one species more than the other whilst some are used by both, and individual birds move from one waterbody to another.

Two SSSI units are located in proximity to The Royal Borough of Kingston Upon Thames. These are Kempton Park Reservoirs SSSI and Knight & Bessborough Reservoirs SSSI. Kempton Park Reservoirs SSSI comprises two artificially embanked basins to the northeast of Kempton Park Racecourse near Hampton. The site consists of Kempton Park East Reservoir and Red House Reservoir which lie within the operational boundary of Kempton Waterworks. In addition to the nationally important numbers of gadwall, the site also supports significant numbers of wintering shoveler. Knight & Bessborough Reservoirs SSSI consists of two connected artificially embanked water storage reservoirs that support internationally important population of shoveler, and nationally important populations of gadwall, cormorant *Phalacrocorax carbo* and goldeneye *Bucephala clangula.*

9.2 Reasons for Designation

The site is designated as an SPA for its population of Annex II winter migrant species as follows[66]:

- Northern shoveler *Anas clypeata*
- Gadwall *Anas strepera*

The site is designated as a Ramsar site under the following criterion[67]:

Ramsar criterion 6 – species/populations occurring at levels of international importance.

- Species with peak counts in spring/autumn: Northern shoveler, *Anas clypeata*
- Species with peak counts in winter: Gadwall, *Anas strepera strepera*

9.3 Current Pressures[68]

- Recreational pressure on some waterbodies, resulting in disturbance
- Hydrological changes

9.4 Conservation Objectives[69]

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

[66] JNCC (2015) Natural 2000 Standard Data Form: South West London Waterbodies SPA
[67] JNCC (2000) Information Sheet on Ramsar Wetlands: South West London Waterbodies
[68] Natural England (2015). Site Improvement Plan: South West London Waterbodies
[69] Natural England (2014) Conservation Objectives: South West London Waterbodies SPA

9.5 Recreational activity

A single London Plan policy (Policy H1: Increasing Housing Supply) may result in increased urbanisation and demand for recreational greenspace, and has the potential to impact upon the SPA.

The components of the South West London Waterbodies (and other, undesignated, but functionally linked waterbodies) are susceptible to disturbance, if that disturbance is sufficiently extensive in extent, lengthy in duration or large enough in magnitude to deter a significant proportion of the gadwall and shoveler that utilise those waterbodies, causing them to abandon their preferred waterbodies for other features and reducing the overall population that the complex can support. Different waterbodies have different access arrangements: some are not open to the public at all, others are open to the public but access is controlled, while a minority have unrestricted public access. The latter are the ones most likely to experience a significant increase in visitors due to local population change. Despite their name, the majority of the SPA waterbodies are beyond Greater London. However, a small part of the SPA - Kempton Nature Reserve/Kempton Park East Reservoir - is in the London Borough of Hounslow; there are also a number of waterbodies in London that constitute functionally-linked habitat. There is an SPA reservoir at Kempton Racecourse in Spelthorne District, just outside London but it doesn't appear to be publically accessible and is fenced.

Brian Briggs in his doctoral thesis concerning the waterbodies[70] considered the extent to which they were disturbed (or vulnerable to disturbance) and also commented on the types of recreational use experienced. That study has been used to determine whether the waterbodies/complexes considered in this chapter would be likely to be subject to an increase in visitors due to London Plan housing targets.

9.5.1 Kempton Park East Reservoir

Kempton Park East Reservoir (also known as Kempton Nature Reserve) is located within the Hounslow boundary. However, while public access to the reservoir is possible, it is controlled through the Friends of Kempton Nature Reserve ('*Access to Kempton Nature Reserve is restricted to members of our Friends scheme, to limit disturbance to wildlife and protect public from the open water bodies on site*'[71]). As such, an increase in the population cannot be assumed to result in a significant increase in visitors since access can essentially be managed to a degree that balances the ecological interest of the site. Given this, it is considered that excessive recreational disturbance will not arise and there will therefore be no likely significant effect due to the delivery of the London Plan.

9.5.2 Stain Hill Reservoirs

Stain Hill Reservoirs in the London Borough of Richmond are identified as being a key area for gadwall. However, these do not appear to be open to the public. According to Briggs: *'Stain Hill reservoirs are two small, disused basins next to Hampton Waterworks. The water levels in the basins are low (around 1m), the sites are well sheltered, and they are virtually undisturbed, hence they provide a refuge for birds disturbed at other sites, as well as a valuable roosting and feeding resource for Shoveler'.*

9.5.3 Red House Reservoir

Red House Reservoir is located just outside London in Spelthorne District. It is still operational as a water supply resource. Access is possible but only by arrangement. As such, an increase in the population cannot be assumed to result in a significant increase in visitors since access can essentially be managed to a degree that balances the ecological interest of the site. Given this, it is considered that excessive recreational disturbance will not arise and there will therefore be no likely significant effect due to the delivery of the London Plan. This conclusion ties in with that of the Spelthorne Local Plan HRA which concluded that development in Spelthorne would not result in a likely significant effect on the SPA/Ramsar site either alone or in combination with other projects and plans.

[70] Brian Briggs. 2007. The use of waterbodies in South-West London by Gadwall and Shoveler: implications for nature conservation. PhD thesis
[71] https://www.thameswater.co.uk/kemptonnaturereserve

9.5.4 Bedfont Lakes

Bedfont Lakes in Hounslow appear to have some functional linkage to Staines Reservoirs part of the SPA south of Heathrow.

Bedfont Lakes are the centrepiece of the Bedfont Lakes Country Park. These lie in the London Borough of Hounslow and constitutes supporting habitat for the SPA, although it is not of particular importance. According to Briggs '*Bedfont Lakes is managed as a nature reserve, and supports small numbers of Gadwall throughout the winter. Birds also use this site as a refuge when disturbed at Princes Lake or the Staines reservoirs.*' The research also indicates that, while the park is open to and popular with the general public, the population of gadwall that uses the lakes have become habituated to the presence of people. Indeed, gadwall seems to have become sufficiently habituated that although this site is well used for recreation by dog walkers and joggers it also serves as a refuge for birds displaced from Princes Lake. This is probably also attributable to the management of the site as a nature reserve (in 2007 the site was recorded as having two regular wardens) and the fact that some parts of the site have restricted public access to provide refuge areas.

Given the fact that the site is already well-used for recreation but that this is clearly entirely compatible with its value for gadwall (and there are no proposals to introduce disturbing activities such as water-skiing as the site is managed as a nature reserve) it is considered that no likely significant effect would arise.

9.5.5 Princes Lake

Most of Princes Lake lies outside London in Spelthorne District. However, some of the lake lies in the London Borough of Hounslow. Princes Lake is a large waterski site, which at times during the Briggs study supported large numbers of feeding and roosting gadwall and shoveler. The area in the northwest corner of the site is largely undisturbed, unlike most other parts of the site, which are used regularly for waterskiing. The site therefore currently serves to support both high populations of gadwall and shoveler alongside water-skiing largely due to the physical separation between the two activities. The nature of water-skiing sites is that only a certain number of skiers are permitted on the water at any time. Therefore, unless an application was submitted to increase the extent of water-skiing on the site, an increase in the local population will not necessarily result in an increase in the amount of water-skiing activity at any time. Also, at time of writing we are not aware of any plans to extend water-skiing activity into the undisturbed refuge area. There are also no plans for Hounslow to deliver housing adjacent to Princes Lake as it is remote from the main population centres of the borough. Given this, it is considered that no likely significant effect would arise.

9.6 Air quality

The Air Pollution Information System (APIS) website provides details of critical loads of atmospheric pollution which if exceeded could lead to habitat damage. However, no critical loads are provided for the habitat - open standing water – on which the bird species forming the reason for the designation of the SPA/Ramsar site rely. The APIS website states that *'No Critical Load has been assigned to the EUNIS classes for meso/eutrophic systems. These systems are often phosphorus limited; therefore decisions should be taken at a site specific level'*. In this case, no likely significant effects are anticipated since the South West London Waterbodies SPA, like most freshwater environments, is essentially phosphate limited, rather than nitrogen limited, meaning that it is phosphate availability that controls the growth of macrophytes and algae. The London Plan will not affect phosphate availability within any component of the SPA/Ramsar site or its supporting waterbodies.

9.7 Water resources

A number of the reservoirs that constitute the South West London Waterbodies SPA/Ramsar site are still utilised for operational water supply by Thames Water. Since Thames Water is the statutory water company for the London Borough of Hounslow an increase in the population of the borough (coupled as it would be with population growth throughout the Thames Water area) over the Local Plan period could theoretically result in a potential effect on the South West London Waterbodies and their ability to support SPA if they required the top level of any of the reservoirs to be increased (to improve their capacity) which resulted in loss of habitat around the reservoir margins which is used by SPA birds.

However, the Thames Water draft Water Resource Management Plan 2015-2040 does not indicate that this is part of their intended solution for water supply in London or elsewhere in their area. As such it is considered that a likely significant effect will not occur through this pathway.

9.8 Other plans and projects

Outside London, the South West London Waterbodies lie within a geographic area that straddles Spelthorne District, Runnymede District and the Royal Borough of Windsor and Maidenhead. Spelthorne and Windsor & Maidenhead have adopted Core Strategies or Local Plans that were accompanied by HRA reports. Runnymede District Council is currently producing a Local Plan which has also been subjected to an HRA. All three authorities have concluded that they will not have a likely significant effect on the South West London Waterbodies SPA/Ramsar site for the same reasons set out earlier with regard to growth in London. Due to the general absence of impact pathways and the controlled nature of public access to the relevant parts of the SPA/Ramsar site, it is considered that there would be no effect in combination with other projects and plans.

10. Policy recommendations

In the initial (internal) draft of this HRA, the following recommendations were made for amendments to policies in the London Plan, or their supporting text.

10.1 Epping Forest SAC

Two recommendations were made for the London Plan regarding Epping Forest SAC:

1. Individual local authorities are best-placed to devise the mitigation strategy and per dwelling tariffs to address both recreational pressure and traffic-related air quality in a manner that both mitigates for any effect on the SAC and works most appropriately with the circumstances of their populations. However, there is a role for the Greater London Authority and London Plan in the process: The London Plan should encourage the London Boroughs (particularly Waltham Forest and Redbridge and possibly Newham and Enfield) to participate as necessary in the recreation management and air quality mitigation strategies that are already being devised for the Epping Forest area.

2. The London Plan already recognises that the housing targets set for the London Boroughs are challenging. While boroughs must make every endeavour to deliver those targets, the London Plan should acknowledge that Epping Forest SAC, its sensitivity to recreational pressure and the high level of protection it receives represent a factor for the London Boroughs of Redbridge and Waltham Forest that does not exist for most other London boroughs. There is no *a priori* reason to believe that the recreation management strategy being devised for the SAC would not be able to address the impacts of the housing growth planned for both authorities, but monitoring of progress with the delivery of these housing targets in parallel with the success of the mitigation solution may trigger a need to revise them in the future. It would be appropriate to reflect this potential need for future revision in the London Plan text.

At time of writing, these changes have not yet been made to the London Plan.

10.2 SD1: Opportunity Areas

The Lee Valley growth corridor and its opportunity areas provided by this policy is related to the potential that can be unlocked by Crossrail 2 which in-itself may be positive for local air quality, including around the northern part of the corridor near Epping Forest SAC. Similarly, broadening employment opportunities in Stoke Newington and Blackhorse Lane (two identified opportunity areas within the Lee Valley growth corridor) could also be positive by reducing the need for residents to travel out of the borough to work and thus reduce traffic on the road network. The supporting text associated with this corridor (paragraph 2.1.31) states that '*The Planning Framework should ensure that industrial, logistics and commercial uses continue to form part of the overall mix of uses in the area, with no net loss of industrial floorspace capacity, and that opportunities for intensification of industrial land and co-location of industrial and residential uses are fully explored.*' The development of the planning framework for this area needs to give due consideration to avoiding an associated significant increase in vehicular freight traffic through Epping Forest SAC, by maximising connectivity to the strategic rail network.

The policy supporting text (paragraph 2.1.31) also identifies that the growth corridor planning framework '*… should also protect and improve access to the Lee Valley Regional Park and reservoirs*'. Clearly there are numerous initiatives already in progress to increase access to the Lee Valley area for recreation. For robustness it was recommended that the word '*sustainable'* is inserted before '*access'* as, theoretically, too much unmanaged access could start to cause harm in the longer term, although there are no current concerns. This change has since been made to paragraph 2.1.31.

10.3 Policy D8: Tall Buildings

The policy identifies three specific environmental impacts that require consideration. This list is not intended to include all environmental impacts that may require consideration during a planning

application. Of note is the impact of new tall buildings in proximity to waterbodies supporting notable bird species upon the birds' flight lines. Dependant on location and design of a tall building the presence of a new tall building could disrupt flight lines associated with European designated sites that support wader bird species such as Lee Valley SPA and Ramsar site and the South West London Waterbodies SPA/ Ramsar. For clarity it was recommended that this policy identifies that this is not an exhaustive list of environmental impacts that require consideration and other impacts such disruption to designated feature sight lines may be required. This has been incorporated into paragraph 3.8.8 of the supporting text.

10.4 Policy G6: Biodiversity and Access to Nature

Changes to the supporting text of this policy were recommended as follows:

- It was recommended that reference is made within the supporting text of this policy for the requirement of an Appropriate Assessment where a project or plan is likely to result in significant [adverse] effects upon a European (International) designated site. At the moment the policy only states that such sites should be clearly identified in Local Plans. This will be required to ensure the integrity of the designated site is not affected.
- It was also recommended that, while the mitigation hierarchy does apply to European sites, before compensatory provision is identified as the only solution to a European site conflict, it is necessary to demonstrate no alternatives to them and Imperative Reasons of Overriding Public Interest (IROPI) as to why the project should go ahead.

At time of writing, these changes have not yet been made to the London Plan, although it is understood that the intention is to incorporate them.

10.5 Policy T4: Assessing and Mitigating Transport Impacts

This policy states: '*Transport assessments should be submitted with development proposals to ensure that any impacts on the capacity of the transport network (including impacts on pedestrians and the cycle network), at the local, network-wide and strategic level, are fully assessed'*. It was recommended that this part of the policy is expanded upon slightly to make specific reference to the potential need for such assessments and mitigation to protect internationally important wildlife sites around London, particularly Epping Forest SAC. This would then constitute encouragement to the London boroughs to participate as necessary in the strategic multi-authority assessments of air quality impact on Epping Forest SAC, which is already underway.

In response to this recommendation paragraph 10.4.1 of the London Plan, associated with Policy T4 (Assessing and Mitigation Transport Impacts), was amended to include the following: '*Consideration of the potential impacts on internationally important wildlife sites should also be appropriately assessed*'.

10.6 Policy T8: Aviation

It was recommended that some of the policy text be strengthened with regard to protecting internationally important wildlife sites. The term 'environmental costs' implies that whatever environmental damage that might result would/could be addressed, whereas for European sites the airport operator/promoter would actually need to prove 'no alternatives' and 'imperative reasons of overriding public interest' first. '*Acknowledging*' impacts and meeting '*environmental costs'* would not necessarily be compliant with the Habitats Directive. Further, section F of Policy T8 states that: '*Proposals that would lead to changes in airport operations or air traffic movements must take full account of their environmental impacts'*. '*Take full account'* could be expanded into a need to avoid adverse effects on internationally important ecological sites.

In response to both these recommendations, point C of the policy has been reworded to read *'The environmental impacts of aviation must be fully and appropriately assessed and where there is no alternative solution or there are overriding public interests the aviation industry should fully meet any appropriate external and environmental costs particularly in respect of noise, air quality and climate change*'.

11. European sites beyond London

11.1 Thames Estuary and Marshes SPA and Ramsar site and other downstream European sites on the River Thames

11.1.1 Introduction

This Thames Estuary & Marshes SPA and Ramsar site has a variety of different habitat types such as saltmarshes, grazing marshes, sea walls, counterwalls, fleets, dykes and mudflats. This site supports a large diversity of wading birds and wildfowl. The mudflats attract large numbers of feeding waders and wildfowl. Specially protected bird species found within the site include the hen harrier (*Circus cyaneus*), short-eared owl (*Asio flammerus*), ruff (*Philomachus pugnax*), common tern (*Sterna hirundo*), avocet and golden plover (*Pluvialis apricaria*). The site also supports a diverse range of invertebrates including beetles, flies and true bugs. The scare emerald damselfly (*Lestes dryas*) can be found in the Cliffe area of the site. 100 species of nationally scarce invertebrates have been recorded on the site all of which are restricted to wetland, estuarine or grazing marsh habitat.[72]

11.1.2 Reasons for Designation[73]

The Thames Estuary & Marshes SPA/Ramsar is designated as an SPA for its populations of European importance under Article 4.1 of the Directive (79/409/ECC) as follows;

- Avocet *Recurvirostra avosetta*; and
- Hen Harrier *Circus cyaneus*.

The site is also designated as an SPA for its populations of European importance under Article 4.2 of the Directive (79/409/ECC) of the following migratory species;

- Ringed Plover *Charadrius hiaticula* (on passage); and
- Ringed Plover (over wintering).

This site is also designated as an SPA for its assemblage qualification: A wetland of international importance. It is also qualifies under Article 4.2 of the Directive (79/409/ECC) by regularly supporting at least 20,000 waterfowl.

The site is designated as a Ramsar site under the following criteria[74]

- Ramsar criterion 2 – This site supports one endangered plant species and at least 14 nationally scarce plants of wetland habitats. This site also supports more than 20 British Red Data Book invertebrates.
- Ramsar criterion 5 – Assemblages of national importance
  - Species with peak counts in winter - 45118 waterfowl
- Ramsar criterion 6 – Species/populations occurring at levels of international importance
  - Ringed Plover *Charadrius hiaticula* (spring/autumn)
  - Black tailed godwit *Limosa limosa islandica* (spring/autumn)
  - Grey plover *Pluvialis squatarola* (winter)
  - Red knot *Calidris canutus islandica* (winter)
  - Dunlin *Calidris alpina alpine* (winter)
  - Common redshank *Tringa totanus tetanus* (winter)

[72] Natural England (2000) SSSI citation: South Thames Estuary and Marshes
[73] JNCC (2001) SPA description: Thames Estuary and Marshes SPA
[74] JNCC (2000) Information Sheet on Ramsar Wetlands (RIS): Thames Estuary and Marshes

11.1.3 Current pressures [75]

- Dredging
- Erosion
- Eutrophication – Studies by the Environment Agency indicate that the waters in the Thames estuary are hyper-nutrified for nitrogen and phosphorus.
- General disturbance from human activities (Pressure/threat)
- Coastal squeeze (pressure)
- Invasive species (threat)
- Changes in species distribution (Pressure/threat)
- Fisheries: Commercial marine and estuarine (Pressure/threat)
- Vehicles: illicit (pressure)
- Air pollution: risk of atmospheric nitrogen deposition (threat)

11.1.4 Conservation objectives[76]

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
- The population of each of the qualifying features, and
- The distribution of the quantifying features within the site.

11.1.5 Likely Significant Effects

Habitats and species associated with these European designated sites have been identified to be vulnerable to disturbances from recreational pressure. In 2012, a detailed study was undertaken of the North Kent Marshes internationally designated sites, investigating disturbance of birds for which the North Kent Estuaries (including Thames Estuary and Marshes SPA and Ramsar site, The Swale SPA/Ramsar site and Medway Estuary & Marshes SPA/ Ramsar site) were designated. The study provided outcomes and recommendations. These included that:

- Disturbance from people is a potential cause for bird population declines.
- Whilst all activities cased disturbances to bird features, dog walking was not to be of particular disturbance.

Development within 6km of access points to the SPAs is particularly likely to lead to increase in recreational use of the SPAs. Local greenspace use such as dog walking, cycling, jogging, walking and to some extent family outings will originate from people living within this radius, and as such in general development beyond this (with the exception of large developments within 6 km of the sites) will not result in likely significant effects alone or in combination with other projects or plans.

The Thames Estuary and Marshes SPA and Ramsar site is located 10km south east of Havering, which is the closest London borough. This was given preliminary consideration but is considered to be too far from the European site for Havering to form part of its core regular recreational catchment[77].

[75] Natural England (2000) Site Improvement Plan: Greater Thames Complex
[76] Natural England (2000) European Site Conservation Objectives for Thames Estuary and Marshes Special Protection Area Site Code: UK9012021
[77] There does not appear to have been visitor survey of the part of the SPA in Thurrock but the much larger area of SPA in Kent has been surveyed and a core catchment of 6km has been identified. it is reasonable to assume that the Thurrock part of the SPA has a similar catchment (possibly smaller since the site itself is smaller and therefore possibly less appealing) in which

Wastewater impacts from London population growth were considered, but Thames Water have invested extensively in infrastructure (such as expansions to Beckton, Mogden and Crossness Sewage Treatment Works, the Lee Tunnel and the Thames Tunnel) to ensure that water quality in the River Thames (and thus the SPA/Ramsar site downstream) improves notwithstanding the expected increase in the population of the catchment of WwTW that discharge to the tidal river.

As such, it is considered that there will be no Likely Significant Effects of the new draft London Plan upon the Thames Estuary and Marshes SPA and Ramsar site. This same conclusion will also apply to those coastal European sites further downstream around the Thames Estuary, such as Medway Estuary & Marshes SPA and Ramsar site, The Swale SPA and Ramsar site and Benfleet & Southend Marshes SPA and Ramsar site, in addition to the Outer Thames Estuary SPA and proposed SPA extension.

11.2 Mole Gap to Reigate Escarpment SAC

11.2.1 Introduction[78]

This 999.4ha site lies within Surrey Hills Area of Outstanding Natural Beauty (AONB) and the North Downs Natural Area. The site contains the largest part of the North Downs in Surrey, which has remained relatively undisturbed by modern farming and building. It also contains Box Hill Country Park, Mole Gap, Headley Heath and an area of Common Land.

11.2.2 Reasons for Designation[79]

The site is designated as an SAC for its Annex I habitats;

- Semi-natural dry grasslands and scrubland facies on calcerous substrates (*Festuco-Brometalia*)(* important orchid sites)
- Stable *xerothermophilous* formations with *Buxus sempervirens* on roack slopes
- European dry heaths
- *Taxus baccata* woods of the British Isles.
- *Asperulo-Fagetum* beech forests

This site is designated as an SAC for its Annex II species;

- Great crested newt *Triturus cristatus*
- Bechstein's bat *Myotis bechsteinii*

11.2.3 Current pressures[80]

- Disease (pressure/threat) – Natural box scrub
- Inappropriate scrub control (pressure)
- Change in land management (threat)
- Public access/disturbance (threat)
- Air pollution: risk of atmospheric nitrogen deposition (threat)

case the main population centres of Havering would be well outside the core catchment as the closest (Cranham) is 13km away

[78] Natural England (2000) SSSI citation: Mole Gap to Reigate Escarpment
[79] JNCC (2001) SAC description: Mole Gap to Reigate Escarpment
[80] Natural England (2000) Site Improvement Plan: Mole Gap to Reigate Escarpment

11.2.4 Conservation objectives[81]

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 and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

11.2.5 Likely Significant Effects

This SAC is just over 5km from Greater London at its closest. Since it is not a conveniently situated site for casual recreational visits for most Londoners, and London (particularly the boroughs closest to the SAC) has a large amount of its own high quality recreational natural greenspace, recreational pressure from the new London Plan is unlikely to arise either alone or in combination. The M25 lies within 200m of the SAC and it may constitute a significant journey to work route for London residents.

The draft London Plan contains fourteen policies that either make reference to improving air quality in London (other than greenhouse gases which are not directly relevant to impacts on European sites), or which will improve air quality via their delivery, demonstrating a strong commitment to improve air quality within the Greater London Authority boundary. Whilst it is noted that the aim is in general to improve air quality from a public health perspective, any improvement in air quality will have a positive knock-on-effect to European designated sites that are sensitive to atmospheric pollution. The relevant policies are:

- Policy SD1 - Opportunity Areas
- Policy SD4 – The Central Activities Zone (CAZ)
- Policy D1 - London's form and characteristics
- Policy D2 - Delivering good design
- Policy D7 - Public Realm
- Policy S 1 - Developing London's social Infrastructure
- Policy S 5 - Sports and Recreation Facilities
- Policy SI2 - Minimising greenhouse gas emissions
- Policy SI3 - Energy Infrastructure
- Policy T2 – Healthy Streets
- Policy T4 – Assessing and mitigating transport impacts
- Policy T7 - Freight and Servicing
- Policy T8 – Aviation

There is also a key policy within the London Plan to improve air quality within Greater London. This is Policy SI1: Improving Air Quality. The policy states:

'A London's air quality should be significantly improved and exposure to poor air quality, especially for vulnerable people, should be reduced:
1) Development proposals should not:

[81] Natural England (2000) European Site Conservation Objectives for Mole Gap to Reigate Escarpment Special Area of Conservation Site Code: UK0012804

a) lead to further deterioration of existing poor air quality
b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits
c) reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality
d) create unacceptable risk of high levels of exposure to poor air quality.

2) Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality. Particular care should be taken with developments that are in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people.

3) The development of large-scale redevelopment areas, such as Opportunity Areas and those subject to an Environmental Impact Assessment should propose methods of achieving an Air Quality Positive approach through the new development. All other developments should be at least Air Quality Neutral.

4) Development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance115.

5) Air Quality Assessments (AQAs) will normally be required for all major developments, unless they can demonstrate that transport and building emissions will be less than the previous or existing use.

6) Development proposals should ensure that where emissions need to be reduced, this is done on-site. Where it can be demonstrated that on-site provision is impractical or inappropriate, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated.'

As discussed in section 6.7.1 the Mayor's Transport Strategy has positive provision to improve air quality within the Greater London Authority boundary. The new Transport strategy has not yet been formally adopted but in particular, Policy 5 of the Strategy identifies that TfL will work with the boroughs to take action to reduce emissions from vehicles on London's streets, to improve air quality and support London reaching compliance with UK and EU legal limits as soon as possible. This will include measures such as retrofitting vehicles with equipment to reduce emissions, promoting electrification, road charging and the imposition of parking charges/ levies. These would be useful tools to improve air quality.

Of relevance to European sites situated outside London, the conclusion of the Supporting Evidence Outcomes Summary Report for the Mayor's Transport Strategy is that '*With the MTS, by 2041, travel will have risen by around a quarter but car travel will have fallen by around a third. There would be at least 3 million fewer car trips per day (compared to 2015) and 250,000 fewer cars owned in London…*' Fewer cars in London should translate into a net decrease in the use of cars for journeys to work to destinations outside London particularly since it is already the case that far more journeys to work are from surrounding authorities into London, rather than from London into surrounding authorities[82]. Overall, the Mayor's air quality policies in the draft London Plan, The Mayor's Transport Strategy and the London Environment Strategy is expected to result in a considerable net improvement in air quality over the plan period and beyond, even allowing for growth in population and jobs over the same time period and for national initiatives.

11.3 Thames Basin Heaths SPA

11.3.1 Introduction[83]

This approximate 8275ha composite site is located across the counties of Surrey, Hampshire and Berkshire. It includes Ash to Brookwood Heaths SSSI, Bourlet and Long Valley SSSI, Bramshill SSSI, Broadmoor to Bagshot Woods and Heaths SSSI, Castle Bottom to Yately and Hawley Common SSSI,

[82] According to the 2011 census total commuting inflows from other parts of England & Wales to London were 790,000 compared to total commuting outflows from London to other parts of England & Wales of 271,000. There was thus a net commuting inflow from the rest of England and Wales to London of 519,000 and this is expected to increase. Source: GLA Intelligence Census Information Scheme 2014-11 'Commuting in London' dated July 2014 https://londondatastore-upload.s3.amazonaws.com/Zho%3Dttw-flows.pdf

[83] English Nature (2005) EC Directive 79/409 on the Conservation of Wild Birds Special Protection Area (SPA)

Clobham Common SSSI, Colony Bog and Bagshot Heaths (SSSI) Eelmoor Marsh SSSI, Hazeley Heath SSSI, Horsell Common SSSI, Ockham and Wiseley Common SSSI, Sandhurst to Owlsmoor Bogs and Heath SSSI and Whitmoor Common SSSI.

11.3.2 Reasons for Designation[84]

This site qualifies as an SPA under Artile 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following Annex I listed species:

- Dartford warbler *Sylvia undata*
- Nightjar *Caprimulgus europaeus*
- Woodlark *Lullula arborea*

11.3.3 Current pressures[85]

- Public access/disturbance (pressure/threat)
- Undergrazing (pressure)
- Forestry and woodland management (pressure)
- Hydrological changes (threat)
- Inappropriate scrub control (pressure)
- Invasive species (pressure/threat)
- Wildfire/arson (pressure)
- Air pollution: impact of atmospheric nitrogen deposition (pressure/threat)
- Feature location/extent/condition unknown (threat)
- Military (threat)
- Habitat fragmentation (pressure)

11.3.4 Conservation objectives[86]

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

11.3.5 Likely Significant Effects

Visitor survey work undertaken for the authorities surrounding the Thames Basin Heaths SPA has identified that the core recreational catchment (i.e. the zone from which the vast majority of visitors derive) is 5km. The nearest significant settlement in Greater London (Chessington) is nearly 10km from the SPA. Therefore it is possible to conclude that there would be no likely significant recreational effect on the SPA from the new London Plan.

The heathlands on which the SPA birds rely are susceptible to deteriorating air quality and the M3 and M25 both lie within 200m of the SPA and could constitute journeys to work routes for London

[84] JNCC (2001) SPA description: Thames Basin Heaths
[85] Natural England (2000) Site Improvement Plan: Thames Basin
[86] Natural England(2000) European Site Conservation Objectives for Thames Basin Heaths Special Protection Area Site Code: UK9012141

residents. However, transport and air quality modelling for local authorities immediately around this SPA (e.g. for the HRA of Guildford Local Plan) have concluded that even allowing for the expected 'in combination' growth in traffic to c. 2033 from all sources, there is expected to be a net improvement in air quality adjacent to those roads as a result of improved background air quality and vehicle emissions. Moreover, the area within 200m from the roadside of the M3 and M25 is either protected from the motorway by embankment or cut as a firebreak. SPA protected bird species will never nest closer than 70m to the roadside and much further than that for other species.

As with section 11.3, the expectation is that overall, the Mayor's air quality policies and air quality strategy will generally improve air quality (as will initiatives to reduce use of private cars) over the plan period. Of relevance to European sites situated outside London, the conclusion of the Supporting Evidence Outcomes Summary Report for the Mayor's Transport Strategy is that '*With the MTS, by 2041, travel will have risen by around a quarter but car travel will have fallen by around a third. There would be at least 3 million fewer car trips per day (compared to 2015) and 250,000 fewer cars owned in London...*' Fewer cars in London should translate into a net decrease in the use of cars for journeys to work to destinations outside London particularly since it is already the case that far more journeys to work are from surrounding authorities into London, rather than from London into surrounding authorities. Overall, the Mayor's air quality policies in the draft London Plan, The Mayor's Transport Strategy and the London Environment Strategy is expected to result in a considerable net improvement in air quality over the plan period and beyond, even allowing for growth in population and jobs over the same time period and for national initiatives.

11.4 Windsor Forest & Great Park SAC

11.4.1 Introduction[87]

Windsor Forest and Great Park comprises one of the largest continuous tracts of woodland parkland in Berkshire and lies in the local authority areas of Bracknell Forest and the Royal Borough of Windsor & Maidenhead.. This area includes a range of habitats such as coniferous and mixed plantations, mature and over-mature broadleaved woodland, woodland pasture, parkland relicts of the primary forest still survive as ancient oak pollards scattered throughout the Park and Forest, unimproved grassland, semi-improved grassland and grass-heath.

11.4.2 Reasons for designation[88]

This site is designated as an SAC due its Annex I habitats as follows:

- Old acidophilous oak woods with *Quercus robur* on sandy plains
- Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)

This site is designated as an SAC due its Annex II species as follows:

- Violet click beetle *Limoniscus violaceus*

11.4.3 Current pressures[89]

- Forestry and woodland management (pressure/threat)
- Invasive species (threat)
- Disease (threat)
- Air pollution: impact of atmospheric nitrogen deposition (pressure)

[87] Natural England (2000) SSSI citation: Windsor Forest and Great Park
[88] JNCC (2001) Windsor Forest and Great Park
[89] Natural England (2000) Site Improvement Plan: Windsor Forest and Great Park

11.4.4 Conservation Objectives[90]

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 and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

11.4.5 Likely Significant Effects

The site is 5km from London but 7km from the nearest settlement within London (Longford) and nearly 10km from the nearest substantial urban area or settlement. There are also no roads within 200m of the SAC that would form part of daily road-based journeys to work for London residents. The HRA of the Windsor & Maidenhead Local Plan concluded that there would be no likely significant effects of growth on the SAC alone or in combination with other Local Plans, in part due primarily to the general resilience of the SAC and its designated interest features to impacts such as recreational pressure and partly due to the alternative areas of natural greenspace that were being provided in the Borough as mitigation for impacts on the Thames Basin Heaths SPA. Due to the greater distance of London from the SAC and the large areas of recreational greenspace within London itself (e.g. The Royal Parks, the Lee Valley Regional Park, Epping Forest, and the Walthamstow Wetlands), it is considered that there will be no likely significant effect of the London Plan in combination with other plans and projects.

11.5 Burnham Beeches SAC

11.5.1 Introduction[91]

This site is an extensive areas of the Burnham Plateau where the Thames gravels give rise to acid soils, which support mature and developing woodland, old coppice, scrub and heath.

11.5.2 Reasons for designation[92]

This site is designated as an SAC due its Annex I habitats as follows:

- Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (Quercion robori- petraeae or *Ilici-Fagenion*)

11.5.3 Current pressures[93]

- Air pollution: risk of atmospheric nitrogen deposition (threat)
- Public access/disturbance (pressure/threat)
- Habitat fragmentation (pressure)
- Deer (pressure/threat)
- Species decline (pressure/threat)

[90] Natural England (2000) European Site Conservation Objectives for Windsor Forest and Great Park Special Area of Conservation Site Code: UK0012586
[91] Natural England (2000) SSSI citation: Burnham Beeches
[92] JNCC (2001) SAC description: Burnham Beeches
[93] Natural England (2000) Site Improvement Plan: Burnham Beeches

- Invasive species (threat)

11.5.4 Conservation Objectives[94]

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

11.5.5 Likely Significant Effects

Burnham Beeches SAC is 8.7km west of London and there are no roads within 200m of the SAC that would constitute journey to work routes for London residents. Visitor surveys undertaken for the Corporation of London at Burnham Beeches[95] indicate that, while some visitors do come from London, they are generally people who visit infrequently, and the vast majority of visitors (particularly the vast majority of people who visit at least once per month) arise from outside Greater London. As such, it is considered that there are no impact pathways linking the new London Plan with this SAC and no likely significant effects will therefore arise.

11.6 Wormley- Hoddesdonpark Woods SAC

11.6.1 Introduction[96]

This 146.3ha site is a series of discrete woodland blocks. These woodland blocks are mainly on acid gravel deposits over London Clay and have developed from ancient wood-pasture and heaths.

11.6.2 Reasons for designation[97]

This site is designated as an SAC due its Annex I habitats as follows:

- Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*

11.6.3 Current pressures[98]

- Disease (threat)
- Invasive species (threat)
- Air pollution: risk of atmospheric nitrogen deposition (threat)
- Deer (threat)
- Vehicles: illicit (pressure)
- Forestry and woodland management (threat)
- Public access/disturbances (threat)

[94] Natural England (2000) European Site Conservation Objectives for Burnham Beeches Special Area of Conservation Site Code: UK0030034
[95] Liley, D., Floyd, L. and Fearnley, H. (2014). Burnham Beeches Visitor Survey. Footprint Ecology. Unpublished report for Corporation of London
[96] Natural England (2000) SSSI citation: Wormley-Hoodesonpark woods north
[97] JNCC (2001) SAC description: Wormley-Hoddesdonpark Woods
[98] Natural England (2000) Site Improvement Plan: Wormley-Hoddesdonpark Woods

11.6.4 Conservation Objectives[99]

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

11.6.5 Likely Significant Effects

This SAC is located 3.7 km outside of Greater London in the boroughs of Broxbourne, Welwyn & Hatfield and East Hertfordshire, although it is 5-6km from the nearest substantial London settlements. The site is designated for its oak- hornbeam forests. The majority of the woods in the complex are in sympathetic ownership, with no direct threat (Hoddesdon Park Wood for example, is managed by the Woodland Trust). There is some pressure from informal recreation, and there has been limited damage in the past (for example from four-wheel drive vehicles). Natural England's Site Improvement Plan (SIP)[100] indicates that the site is heavily used by the public for recreational purposes but it also indicates that recreational activity is generally well-managed and encouraged. Only a very small area of the site (500m^2) is situated within 200m of a major road (the A10), and this area is primarily a track/path/arable field boundary that constitutes approximately 0.01% of the SAC and is located 190m from the road at its closest. The HRAs undertaken for the East Herts Plan, Broxbourne Local Plan and Welwyn Hatfield Local Plan have all concluded that there would be no likely significant effect, or adverse effect on integrity, from their growth in combination with other plans and projects. Since these authorities are all much closer to the SAC than is London, it can also be concluded that no likely significant effect will arise in combination from the London Plan.

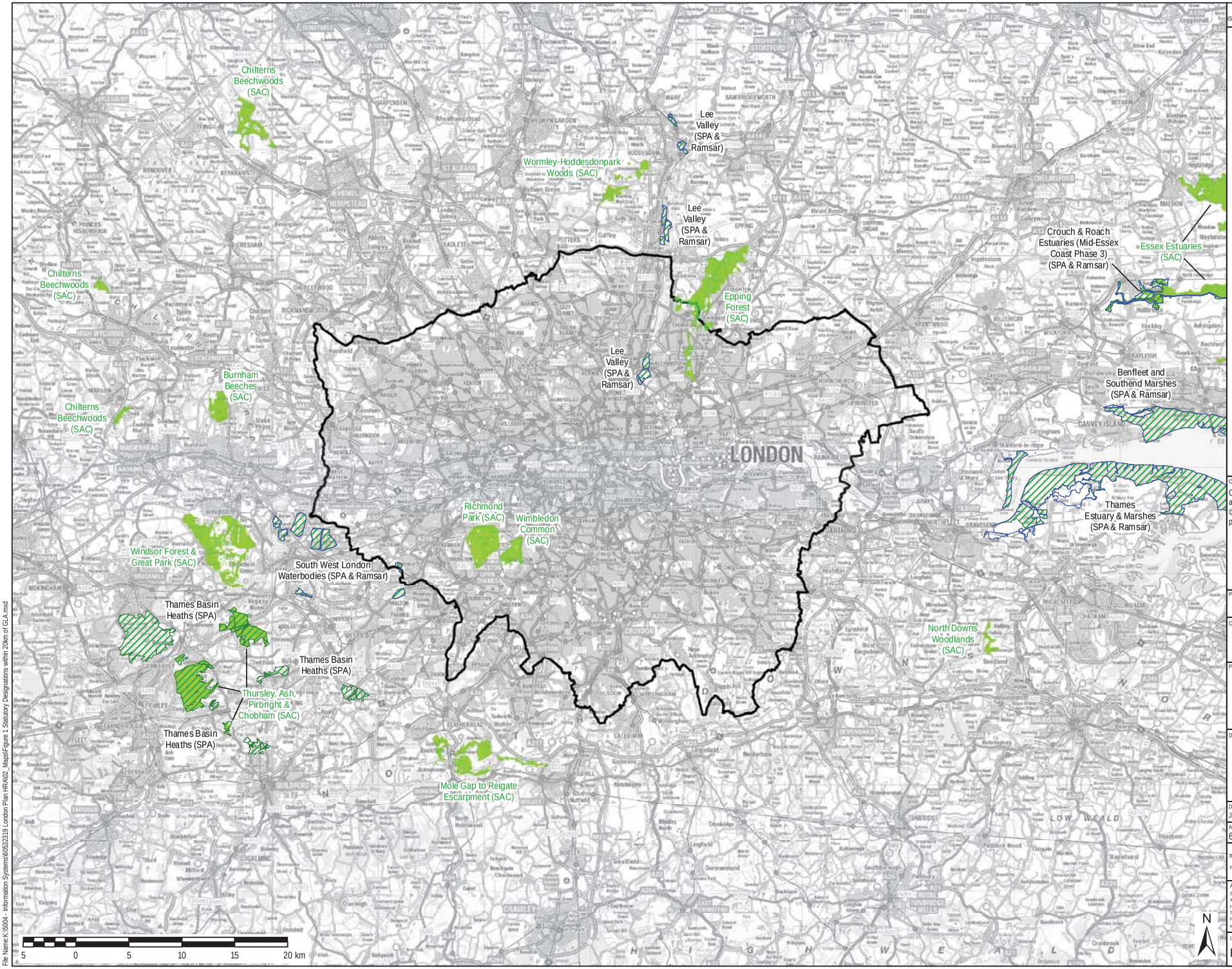
[99] Natural England (2000) European Site Conservation Objectives for Wormley Hoddesdonpark Woods Special Area of Conservation Site Code: UK0013696
[100] Natural England (2015). Site Improvement Plan Wormley-Hoddesdonpark Woods

12. Conclusion

The HRA of the London Plan has identified that several amendments to policy or matters of direction to boroughs (particularly those around Epping Forest SAC) are required. However, once those matters are addressed it is considered that this report could be updated to conclude that there are sufficient protective mechanisms in place to ensure that the growth objectives of the London Plan can be delivered without a likely significant effect on European sites, either alone or in combination with other plans and projects.

Appendix A Figures

Figure A1: Location of European Designated Sites.



LEGEND

- Greater London Authority
- Ramsar
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)

Purpose of Issue: DRAFT

Client: GREATER LONDON AUTHORITY

Project Title: HRA

Drawing Title: DESIGNATIONS WITHIN 20KM OF THE GREATER LONDON AUTHORITY BOUNDARY

Drawn	Checked	Approved	Date
JW	CN	IHH	18/08/2017

AECOM Internal Project No.: 60532319

Scale @ A3: 1:325,000

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Drawing Number: FIGURE 1

Rev:

File Name:K:\5004 - Information Systems\60532319 London Plan HRA\02_Maps\Figure 1 Statutory Designations within 20km of GLA.mxd

Appendix B Screening of Plan Policies

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
Chapter 1: Planning London's Future		
GG1: Building Strong and Inclusive Communities	Sets out a list of criteria and measures whereby strong and inclusive communities will be created, such as by ensuring that London is a fair and equal city and creating welcoming, accessible, healthy, safe, connected and walkable neighbourhoods which foster a sense of belonging and ownership for residents.	**No Likely Significant Effect.** This policy provides for a strong and inclusive community. It includes positive provision of walkable neighbourhoods which have the potential to reduce atmospheric pollution from motorised transport modes. It also provides for the achievement of high standards of environmental sustainability, which has the potential to reduce atmospheric pollution contributions and a reduction in potable water use.
GG2: Making The Best Use of Land	Sets out how boroughs should make best use of land when planning new development.	**No Likely Significant Effect.** A development management policy optimising land, resource and infrastructure use. This is a positive policy as it provides for the protection of London's open spaces and designated nature conservation sites and providing for new publicly accessible green infrastructure and open space (thus reducing increased recreational pressure upon European designated sites). This policy also contains positive provision by giving priority to sustainable transport modes to support a strategic target of an 80% mode share for walking, cycling and public transport. This has the potential to aid in a reduction in atmospheric pollution.
GG3: Creating a healthy city.	Sets out the key steps whereby health inequalities will be reduced.	**No Likely Significant Effect** This policy is positive in promoting the need for Local Plans to ensure that proposals for new development provide accessible local green space. Natural Green Space of appropriate character and function provision is an important aspect in ensuring that recreational pressure on International Sites can be avoided.

[1] Note that references to likely significant effects are specifically with regard to **adverse** effects on European sites, as required by legislation. Positive effects are mentioned where they exist but are not considered 'likely significant effects' within the context of the Habitats Directive and the terminology of HRA

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
GG4: Delivering the homes Londoners need	Sets out how all involved in delivering housing should ensure that the types and mixes of residential development delivered are appropriate to need. Also identifies steps the boroughs should take to increase and accelerate housing delivery through their Local Plans.	**No Likely Significant Effect.** This policy outlines criteria that Local Authorities should use when delivering the development targets identified in Policy HS1: Increasing housing supply. It does not provide for any location, quantum of housing development.
GG5: Growing a good economy	Sets out overall strategic principles regarding the role of the Mayor in conserving and enhancing London's global economic attributes and competitiveness, maintaining its position as the world's greatest city for business.	**No Likely Significant Effect.** This is a broad policy relating to London's economy. Whilst it is noted that economic growth has potential to impact upon European designated sites (atmospheric pollution and water resource conflicts), this policy does not explicitly provide for development, it merely provides criteria for the Mayor and partners.
GG6: Increasing efficiency and resilience	Sets out how London will become a more efficient and resilient city by 2050, such as through adaptation to climate change, becoming a zero carbon city and maintaining resilience to terrorism.	**No Likely Significant Effect** This policy provides for efficiency and resilience. The provision of low polluting energy infrastructure is a position that has the potential to reduce atmospheric pollution contributions. It also provides for efficient water use which has the potential to reduce the requirement for increased abstraction to support the increased development.
Chapter 2: Spatial Development Patterns		
SD1 Opportunity Areas	Sets out how the Mayor will ensure that a series of identified opportunity areas (distinct and significant locations that have capacity for at least 5,000 new jobs and/or 2,500 new homes) within a number of growth corridors within and beyond London fully realise their growth and regeneration potential, including provision of support and leadership, bringing together investment and ensuring that the agencies (such as Transport for London) work collaboratively to promote the opportunity areas. Also sets out the steps the Mayor expects boroughs to take to facilitate growth in the opportunity areas. This includes ambitious mode	**No Likely Significant Effect** The supporting text for this policy provides some specificity on broad areas for employment and housing delivery and broad quanta in a series of identified opportunity areas within a number of growth corridors. These growth corridors and opportunity areas are based on a number of priority infrastructure schemes that have been identified in the Mayor's Transport Strategy and have the potential to unlock substantial homes and jobs growth in these areas.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
	share targets in line with the Mayor's Transport Strategy making local improvements against the Healthy Streets indicators by reducing traffic dominance, improving air quality and creating healthy and active places.	The Housing Strategy sets out three principal approaches to delivery of these corridors/opportunity areas: • Facilitating land assembly, where the Mayor will support boroughs and Housing Associations to assemble land for development. This may be through direct investment or through supporting Compulsory Purchase of appropriate land. He will also focus resources on areas where land suitable for development is not coming forward. • Investing in housing and infrastructure, Where the Mayor will put in place funding mechanisms to unlock development. This could include working with TfL to ensure transport improvements lead to increased deliver of homes and jobs, and will build on the current Housing Zones programme. • Diversifying the tenure mix of new home, where the Mayor will provide funding to increase the number of new and affordable homes. This will include funding to support more innovative forms of housing delivery. For the most part the opportunity areas are relatively remote from European sites and the overall focus on the role of the London Plan (and the Mayor's agencies) in these opportunity areas is on improvement/delivery of sustainable public transport, which will be positive for air quality. Indeed, delivery of Crossrail 2 and the Trams Triangle proposals may well be specifically positive for air quality at Wimbledon Common SAC by removing vehicles from the local road network. However, the following are noted with specific regard to the Lee Valley growth corridor (specifically the northern-most part): • The Lee Valley growth corridor and its opportunity areas is related to the potential unlocked by Crossrail 2 and this in itself may be positive for local air quality including around the northern part of the corridor near Epping Forest SAC. Similarly, broadening employment opportunities in Stoke Newington and Blackhorse Lane (two identified opportunity

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		areas within the Lee Valley growth corridor) could also be positive by reducing the need for residents to travel out of the borough to work and thus reduce traffic on the road network. The text associated with this corridor states that ''*The Planning Framework should ensure that industrial, logistics and commercial uses continue to form part of the overall mix of uses in the area, with no net loss of industrial floorspace capacity, and that opportunities for intensification of industrial land and co-location of industrial and residential uses are fully explored.*' The development of the planning framework for this area needs to give due consideration to avoiding an associated significant increase in vehicular freight traffic through Epping Forest SAC, by maximising connectivity to the strategic rail network. • The text also states that the growth corridor planning framework '*… should also protect and improve access to the Lee Valley Regional Park and reservoirs'*. Clearly there are numerous initiatives already in progress to increase access to the Lee Valley area for recreation (e.g. the Walthamstow Wetlands project). **For robustness it is recommended that the word 'sustainable' is inserted before 'access' as, theoretically, too much unmanaged access could start to cause harm in the longer term, although there are no current concerns.** • New Southgate is relatively close to Epping Forest SAC from a traffic/air quality point of view. However, the Opportunity Area is explicitly linked to provision of greater public transport and Crossrail 2 (as well as undergrounding the north circular). All potentially positive for air quality in the SAC. As such, provided the above recommendation is incorporated, it can be concluded that this policy could be delivered without likely significant effects, and may have positive air quality effects, subject to additional scrutiny of specific emerging proposals at the Local Plan and planning application stages.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
SD2 – Collaboration in the Wider South East	The London Plan acknowledges that London has a close interaction with a large area of the Wider South East (including parts of both the East of England and South East of England). This policy sets out how the Mayor will work with partners across the WSE to address appropriate regional and sub-regional challenges and opportunities through recently developed, strategic coordination arrangements.	**No Likely Significant Effect** This policy promotes the joint preparation of evidence and encourages plan preparation by Authorities outside of GLA to take into account long term trends and mitigation. This could for example be a tool to encourage the London Boroughs around Epping Forest (Enfield, Redbridge and Waltham Forest) to work with the Essex authorities north of Epping Forest to manage air quality and recreational pressure issues associated with that SAC. Overall this policy does not provide for any development, but merely identify the way in which the Mayor wishes to interact with neighbouring Authorities in the WSE and strategically address issues relating to WSE Corridors with neighbouring partners.
SD3 – Growth Areas in Wider South East and Beyond	Intended to set out how the Mayor will work with authorities surrounding London and across the Wider South East to unlock the potential for the identified growth corridors that reach out of London. Specifically, this will relate to investment in necessary strategic infrastructure to support housing and business development outside London, recognising the benefit such growth provides to London. Also confirms that the Mayor would support surrounding local authorities explicitly identifying these growth corridors in their Local Plans.	**No Likely Significant Effect** Development in the Growth Corridors beyond the identified opportunity areas in London itself could potentially affect European sites depending on the quantum and location of growth and how it is designed and delivered in detail. However, growth outside London is not within the jurisdiction of the Mayor of London and this policy is primarily concerned with confirming that the Mayor will work to deliver the necessary strategic infrastructure investment to unlock growth corridors outside London where there is benefit conveyed to London. Specific residential and employment allocations that local authorities may make outside London in response to this policy would be picked up in the HRA work undertaken for their specific Local Plans.
SD4 – The Central Activities Zone (CAZ)	Sets out a series of guidelines and directions regarding the overall strategy for sustaining and enhancing the Central Activities Zone.	**No Likely Significant Effect** This is a positive policy for sustaining and enhancing the distinct environment of the CAZ including to take practical action to improve air quality, which will benefit sensitive habitats. This policy also aims to address the issues related to climate change and urban heat island effect.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		There are no linking impact pathways present
SD5 – Offices, other strategic functions and residential development in CAZ	Sets out principles for the types of development that would be considered acceptable in the Central Activity Zone and the most appropriate areas for those types of development. Also identifies guidelines, such as that delivery of new housing should not result in loss of office floorspace.	**No Likely Significant Effect** This policy details that no new residential units are to be developed within certain areas of central London. This will not positively or negatively affect European sites within London. There are no linking impact pathways present
SD6: Town Centres	Sets out a series of guidelines and directions regarding the overall strategy for sustaining and enhancing Town Centres, including supporting innovative approaches to car and cycle parking provision and kerbside management to make efficient use of land and facilitate car-free or 'car-light' development, whilst meeting requirements for disabled person parking.	**No Likely Significant Effect** This policy promotes the enhancement of London's town centres to create healthy, walkable neighbourhoods and promote tourism to local centres. The policy also promotes high density mixed use or residential development within or on the edges of the town centres however at this level it does not specify location or quantity of housing to be delivered and therefore cannot be assessed at this level. The policy also promotes positive aspects which includes innovative designs including 'car-free' or 'car-'light developments which aim to reduce the car ownership within the town centres and create walkable neighbourhoods, therefore positively affect air quality levels. It can be considered that at the London Plan level there are no linking impact pathways.
SD7: Town Centre Network	Sets out principles for how the network of town centres across London should be treated, including their classification (whether international, metropolitan or major) and the focus that should be given to delivery and enhancement of lower tier centres such as district centres and neighbourhood centres, including new centres and whether higher density housing can be accommodated.	**No Likely Significant Effect** This policy sets out broad principles and directions for boroughs as to how the town centre network should be treated and managed. It does not identify any specific location or quantity of development. It can be considered that at the London Plan level there are no linking impact pathways.
SD8: Town Centres – Development	Provides principles to guide appropriate development to town centres and prevent town centre uses (such as retail and leisure)	**No Likely Significant Effect**

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
principles and Local Plans	being delivered in inappropriate locations. Also sets out principles for local authorities to use to define town centres in their Local Plans, identify sites for housing intensification and support flexible use of vacant properties.	This policy provides the development principles for development within town centres. This policy promotes the use of out of centre and leisure parks to delivery housing intensification; however it does not specify location or quantity of development to be delivered. This policy also positively promotes redevelopments should encourage and ensure more sustainable transport by public transport, cycling and walking which will positively affect air quality levels. It can be considered that at the London Plan level there are no linking impact pathways.
SD9: Town Centres – Local partnerships and implementation	A series of principles and directions regarding positive working between boroughs and other stakeholders to form effective local partnerships and town centre enhancement, including with regard to intensification of development and maximising the potential to bring land forward for development.	**No Likely Significant Effect** This policy provides for partnerships in the implementation of development. There are no linking impact pathways present.
SD10 – Strategic and Local Regeneration	Identifies a requirement for Boroughs to identify Strategic Areas for Regeneration and Local Areas for Regeneration in their Local Plans, and that they should tackle spatial inequalities and the environmental, economic and social barriers.	**No Likely Significant Effect** The regeneration of existing communities and boroughs and the promotion of integration and community cohesion do not affect European sites. Whilst some of the identified strategic areas are in proximity to European designated sites (such as the River Lee/ Lee corridor in Haringey, Waltham Forest and Enfield) and the nature of regeneration provides potential to result in increased development, no specific type, location or quantum is identified and as such there are no linking impact pathways present.
Chapter 3: Design		
D1 London's form and characteristics	Sets out the Mayor's broad design aspirations and principles for delivery of growth in London and preservation and enhancement of its form and characteristics.	**No Likely Significant Effect.** This policy contains positive provision to help mitigate impacts of poor air quality. Whilst it is noted that this is from a human health point of view any design feature that has potential to help reduce atmospheric pollution contributions can be considered to be a positive policy. This policy also provides for public space,

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		landscape and visual interest has potential to divert recreational pressure away from European designated sites.
D2 Delivering good design	Sets out the processes and actions that should be undertaken by planning authorities or developers, where applicable, to ensure development delivers good design.	**No Likely Significant Effect.** This is a positive policy as it outlines the requirement for new development to consider public transport accessibility and movement and transport networks and air quality which has potential to reduce atmospheric pollution. Open space, green infrastructure and water bodies also require consideration. Consideration of these types of provision has potential to divert recreational pressure away from sensitive wildlife sites.
D3 Inclusive design	Sets out the Mayor's principles and guidelines to boroughs in order to deliver a truly inclusive environment and meet the needs of all Londoners, including disabled and older people.	**No Likely Significant Effect.** This is a development management policy relating to inclusive design.
D4 Housing quality and standards	Sets out the Mayor's expectations and requirements regarding the quality of new housing provision.	**No Likely Significant Effect.** This is a development management policy relating to housing quality. This policy provides positive provision for an amount of outdoor space per new dwelling (E11). This has the potential to divert recreational pressure away from European designated sites sensitive to increased recreational pressure.
D5 -Accessible housing	Sets out principles and guidelines for provision of suitable housing and genuine choice for London's diverse population; including disabled people, older people and families with young children.	**No Likely Significant Effect** This policy provides for housing accessible to a wide range of ages and abilities. It does not provide for any quantum or location of residential development, merely to type. There are no likening impact pathways present.
D6 Optimising housing density	Sets out the Mayor's requirements for optimising housing density by making the most efficient use of land, while taking account of key factors such as infrastructure capacity.	**No Likely Significant Effect.**

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		This is a development management policy relating to optimal housing density. This policy provides positive provision that has the potential to reduce atmospheric pollution via the need for connectivity and accessibility to public transport, thus reducing the need for travel by car.
D7 Public Realm	Sets out the Mayor's requirements for Local Plans and development proposals to support the important role public space plays in London through application of the Healthy Streets Approach: to allow for travel and movement; to improve the health and wellbeing of all Londoners; to enable people from a variety of backgrounds to mix; for communities and neighbours to come together, and as living space for Londoners.	**No Likely Significant Effect.** This is a development management policy relating to the design of the Public Realm. It is a positive policy that aims to reduce atmospheric pollution emissions.
D8 Tall Buildings	Sets out the Mayor's policy on provision of tall buildings, including definitions of applications referable to the Mayor and the need to assess impacts on views, environment, heritage and the River Thames.	**No Likely Significant Effect.** This policy does not provide for tall buildings, but outlines development management considerations relating to tall buildings. The policy identifies three specific environmental impacts that require consideration. This list is not intended to include all environmental impacts that may require consideration during a planning application. Of note is the impact of new tall buildings in proximity to waterbodies supporting notable bird species upon the birds' flight lines. Dependant on location and design of a tall building the presence of a new tall building could disrupt flight lines associated with European designated sites that support wader bird species such as Lee Valley SPA and Ramsar site and the South West London Waterbodies SPA/ Ramsar. **For clarity it is recommended that this policy identifies that this is not an exhaustive list of environmental impacts that require consideration and other impacts such disruption to designated feature sight lines may be required.**

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
D9 Basement developments	The Mayor will support boroughs in establishing policies to address the negative impacts of large-scale basement development beneath existing residential units	**No Likely Significant Effect.** This policy identifies the Mayor's support of establishing policies relating to basements. It does not identify and location, or extent of development. There are no linking impact pathways present
D10: Safety, security and resilience to emergency	Identifies how the Mayor will work with relevant stakeholders and others to ensure and maintain a safe and secure environment in London that is resilient against emergencies including fire, flood, weather, terrorism and related hazards as set out in the London Risk Register.	**No Likely Significant Effect.** This policy provides for safety, security and resilience to emergency.
D11 Fire safety	Sets criteria to ensure the safety of all building users, including the requirements of a Fire Statement for all major development proposals.	**No likely significant Effect.** This policy provides for fire safety.
D12 Agent of Change	Sets out the ways in which boroughs take account of existing potentially noise cultural venues such as public houses, night clubs, theatres and music venues in determining appropriate locations for new development, particularly residential. Also identifies steps to be taken to manage noise associated with new cultural venues.	**No Likely Significant Effect.** This is a development management policy that protects existing noise generating business from the encroachment of noise sensitive development.
D13 Noise	Sets out how the Mayor expects residential and other non-aviation development to manage noise in order to reduce, manage and mitigate noise to improve health and quality of life and support the objectives of the London Environment Strategy.	**No Likely Significant Effect.** This policy relates to reducing, managing and mitigating noise to improve health and quality of life. There are no linking impact pathways present.
Chapter 4: Housing		
H1: Increasing housing supply	Policy that sets out the ten year targets for net housing completions for which each local planning authority should plan.	**HRA implications** This policy sets ten year net housing completion targets for individual Boroughs, although it does not identify any specific

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
	Boroughs must include these targets in their local planning documents.	housing allocations. The quantum of growth provided does have the potential to result in LSE upon European designated sites, although this is dependent on the ultimate location of the development. Potential linking impact pathways present include: • Recreational pressure, • Atmospheric pollution • Hydrological changes. This policy is therefore a main aspect for discussion in the HRA report itself.
H2: Small sites	Emphasises the Mayor's direction that small sites should play a much greater role in housing delivery and boroughs should support well-designed new homes on small sites through both planning decisions and plan-making. Sets out parameters for delivering small sites and also provides 10 year targets for net housing completions on small sites. Note that these fall within the 10 year housing targets for each borough, rather than being additional.	**No Likely Significant Effect** This is essentially a development a management policy relating to small sites. Whilst it does provide a 10 year small sites target for each Borough, this figure is incorporated into the overall housing quantum provided, so this does not provide any new development beyond that identified in Policy SH1: Increasing housing supply.
H3: Monitoring housing targets	Sets out the requirements for monitoring achievement of the housing targets.	**No Likely Significant Effect** This is a management policy providing for the need to monitor housing supply. There are no linking impact pathways present.
H4: Meanwhile use	Encourages boroughs to identify opportunities to make efficient use of land while it is awaiting longer-term development.	**No Likely Significant Effects** A development management policy relating to land that is awaiting development.
H5: Delivering Affordable Housing	Sets out principles and guidelines (including thresholds) for achievement of affordable housing across London.	**No Likely Significant Effect** This policy does not identify any location or quantum of residential development, merely policy relating to its affordability. There are no linking impact pathways present.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
H6:Threshold approach to applications	The threshold approach for affordable housing applies to development proposals which are capable of delivering more than ten units or which have a combined floor space of greater than 1,000 square metres. It essentially sets out the affordable housing parameters with which a development will need to comply in order to be fast-tracked (i.e. avoiding viability assessment).	**No Likely Significant Effect** This is a development management policy intended to increase provision of affordable housing. There are no linking impact pathways present.
H7: Affordable Housing Tenure	Provides details of the split of funding products that should be applied to achieve the required affordable housing.	**No Likely Significant Effect.** This is a development management policy relating to the mix of rental prices for rented housing stock and its affordability. There are no linking impact pathways present.
H8: Monitoring of affordable housing	Sets out the monitoring processes that boroughs must have in place regarding affordable housing.	**No Likely Significant Effect** This policy identifies the need for the monitoring of the delivery of affordable housing or any cash in lieu payments. There are no linking impact pathways present.
H9: Vacant building credit	Sets out the circumstances in which it would be appropriate to apply the Vacant Building Credit with regard to delivery of affordable housing in London. The credit is intended to provide an incentive for brownfield development on sites containing vacant buildings that would not otherwise come forward for development.	**No Likely Significant Effect.** Theoretically, Policy H9 (Vacant building credit) could indirectly lead to adverse effects on SACs/SPAs/Ramsar sites in conjunction with those policies setting the housing targets for each borough, as the policy advocates a mechanism to facilitate the potential for re-development on vacant brownfield sites that would not otherwise come forward for development. However, the policy makes clear that in London, this kind of development opportunity is highly unlikely to come forward, and it is also clear that the scale of development would be likely to be extremely limited. The policy also identifies that development proposals will have to accord with '*locally-specific factors influencing the site*.' It is important to note that Sections 38(6) and 70(2) of the Town and Country Planning Act 1990 are clear that the determination of

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		an application must be made in accordance with the development plan unless material considerations indicate otherwise. Therefore, it is possible to conclude no likely significant effects of policy H9 on European protected wildlife sites.
H10: Redevelopment of existing housing and Estate Regeneration	Policy identifies that demolition of housing is unacceptable unless replaced at existing or higher densities with at least equivalent affordable floor space and additional affordable housing is delivered where viable.	**No Likely Significant Effect.** This is development management policy relating to regeneration. It does not identify the provision of new development, merely that types of development cannot be lost without equivalent replacements. There are no linking impact pathways present.
H11: Ensuring the best use of stock	Sets out guideline and the Mayor's stance on promotion of efficient use of existing stock to reduce the number of vacant, unfit and unsatisfactory dwellings.	**No Likely Significant Effect.** This is a development management policy that promotes efficient use of current housing stock. There are no linking impact pathways present.
H12: Housing type mix	Sets out parameters through consideration of which the appropriate mix of unit sizes for a scheme can be determined.	**No Likely Significant Effect.** A development management policy that provides for the mix of unit sizes, types and tenures of housing. There are no linking impact pathways present.
H13: Build to Rent	Details the Mayor's policy on Build to Rent, directing borough's to provide practical support to Build to Rent schemes to accelerate housing delivery.	**No Likely Significant Effect.** This is a development management policy relating to build to rent development. Whilst the policy does relate to new housing provision, it does not identify any quantum or location. There are no linking impact pathways present.
H14: Supported and specialised housing	Identifies that local authorities should support the delivery and retention of supported and specialised housing that meets identified needs. This may include housing for older people, young people, disabled people, rough sleepers, and victims of domestic violence or violence against women and girls.	**No Likely Significant Effect.** A development management policy relating to the retention of current supported and specialised housing. There are no linking impact pathways present.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
H15: Specialist older persons housing	Identifies that housing development should be designed to be suitable for people at all stages of their lives, by ensuring accessible housing is created	**No Likely Significant Effect.** This is a development management policy providing design criteria for addressing the need for housing for London's aging population. Whilst it does provide benchmarks for housing requirements, these figures are incorporated into the overall housing quantum provided, so this does not provide any new development beyond that identified in Policy H1: Increasing housing supply.
H16: Gypsy and traveller accommodation	Policy intended to ensure the needs of Londoners who are gypsies and travellers are met. The policy sets out a definition for gypsies and travellers and identifies both a requirement for a needs assessment and how any need should be met.	**No Likely Significant Effects** This is a development management policy for authorities to adhere to when providing for Gypsy and traveller needs. It does not identify any quantum of development. There are no linking impact pathways present.
H17: Purpose Built Student Accommodation	Sets out criteria to be considered by Boroughs when meeting their need for purpose built student accommodation, including how much should be affordable and ensuring good connections to public transport.	**No Likely Significant Effect.** This is a development management policy providing guidance for delivering student accommodation. It does not provide any quantum or location of development. There are no impact pathways present.
H18: Large scale purpose built shared living	Sets out criteria whereby it can be concluded that large scale purpose built shared living sui generis use developments would have a role in meeting housing need in London.	**No Likely Significant Effect.** This is a development management policy providing parameters for large scale purpose built shared living. It does not provide any quantum or location of development. There are no impact pathways present.
Chapter 5: Social Infrastructure		
S1 Developing London's social Infrastructure	Sets out the Mayors requirements and directions to boroughs in order to ensure that adequate social infrastructure is provided to support the changing needs of new and existing populations and support social integration.	**No Likely Significant Effect.**

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		A positive policy that promotes walking and cycling, which can potentially lead to air quality improvements through reduced reliance on motor vehicles.
S2 Health and Social Care Facilities	Sets out the Mayor's expectations for how the boroughs will work with Clinical Commissioning Groups (CCGs) and other NHS and community organisations to ensure that London's needs regarding health and social care facilities are met, including making appropriate provision in Local Plans.	**No Likely Significant Effect.** This policy outlines the need for LPAs to work with medical and community groups to deliver health and social care facilities. No development location or quantum is provided.
S3 Education and childcare facilities	Sets out the Mayor's directions to boroughs in order to ensure there is a sufficient supply of good quality education and childcare facilities to meet demand.	**No Likely Significant Effect.** This policy outlines guidance for LPA's relating to education facilities. No development type or location is provided.
S4 Play and Informal Recreation	Directs boroughs to ensure that development proposals that are likely to be used by children and young people are adequately provided with appropriate play and informal recreation facilities.	**No Likely Significant Effect.** This policy outlines guidance relating to play and informal recreation. No development type or location is provided.
S5 Sports and Recreation Facilities	Sets out the Mayor's directions to boroughs in order to ensure there is sufficient supply of good quality sports and recreation facilities.	**No Likely Significant Effect** This is a positive policy that promotes walking and cycling, which can potentially lead to air quality improvements through reduced reliance on motor vehicles. Sports and recreational facilities also have the potential to divert recreational pressure away from a sensitive European designated site.
S6 Public toilets	Identifies expectations and requirements regarding provision of public toilet facilities in new development.	**No Likely Significant Effect.** A development management policy relating to the provision of public toilets. It sets out guidance on when they are required and the relevant standards that are required.
S7: Burial space	Sets out the Mayor's directions to boroughs to ensure provision of sufficient burial spaces in London.	**No Likely Significant Effect.** A policy relating to burial space. No locations are identified.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		There are no linking impact pathways present.
Chapter 6: Economy		
E1 Offices	Identifies the broad strategy to delivery of office development, including meeting need and promoting the unique agglomerations and dynamic clusters of world city business and other specialist functions of the central London office market. The policy does identify a number of broad areas for office development: the Central Activity Zone, Northern Isle of Dogs, Tech City, Kensington & Chelsea and the Royal Docks Enterprise Zone, Stratford and Old Oak Common and existing urban business parks (such as Chiswick Park, Stockley Park and Bedfont Lakes). However, these are presented as examples rather than a comprehensive list of areas.	**No Likely Significant Effect.** This policy supports the provision of office space and seeks to increase current office stock. It provides broad locations for office development within Greater London and identifies the likely total scale of floorspace provision that may be needed across London. However, most of these are remote from European sites and there is no pathway of impact between the existing business park at Bedfont Lakes and the nearby South-West London Waterbodies SPA/Ramsar site. Moreover, this policy does not provide for any exact location of office development. This is a positive policy as it encourages locations of office development that can capitalise on public transport connectivity, this having the potential to reduce atmospheric pollution.
E2: Low cost business space	Sets out how the Mayor and other stakeholders will support the provision and, where appropriate, protection of a range of low cost B1 business space to meet the needs of micro, small and medium-sized enterprises and to support firms wishing to start-up or expand.	**No Likely Significant Effect.** This policy sets out the principles regarding low cost business space but does not identify sites of a specific quantum of growth.
E3: Affordable Workspace	Sets out how the Mayor and other stakeholders will ensure that affordable workspace is available.	**No Likely Significant Effect.** This policy sets out the principles regarding affordable business space but does not identify sites of a specific quantum of growth.
E4: Land for industry, logistics and services to support London's economic function	Sets out the broad principles whereby land for industry, logistics and services to support London's economic function will be preserved and delivered. It does not identify specific sites or set a specific quantum of growth although it does identify a single location (Isle of Dogs in Tower Hamlets). Included among the	**No Likely Significant Effect** Delivery of employment development in itself could pose implications for European sites depending on where and how it is delivered. However, this is policy does not identify specific sites or a quantum of growth, with the exception of the Isle of Dogs (Tower Hamlets). This policy contains positive provision for

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
	principles is that for new sites there should be sufficient access to public transport and local walk and cycle networks.	sufficient access to public transport and local walk and cycle networks, thus helping to reduce atmospheric pollution from vehicle emissions.
E5: Strategic Industrial Locations (SIL)	Identifies the broad locations for Strategic Industrial Locations (boroughs to include SIL are: Southwark, Lewisham, Tower Hamlets, Newham, Hackney, Wandsworth, Waltham Forest, Enfield, Haringey, Brent, Hounslow, Ealing, Hillingdon, Harrow, Hammersmith and Fulham, Bexley, Lewisham, Greenwich, Barking and Dagenham, Havering, Bromley, Redbridge, Kingston upon Thames, Sutton, Croydon, and Merton) and how they will be supported and sustained as London's main reservoirs of industrial, logistics and related capacity for uses that support the function of London's economy, including uses that will be considered.	**No Likely Significant Effect.** Delivery of employment development in itself could pose implications for European sites depending on where and how it is delivered. However, this specific policy simply supports proactive management of SILs in the locations identified. It details the type of industrial development that will be supported in a SIL and other requirements for development proposals. It also provides guidance for Local Plans. Although there are several SIL's along the Lee Valley corridor in London Borough of Waltham Forest, which are in relatively close proximity to part of the Lee Valley SPA/Ramsar site, the policy does not provide any specifics regarding the quantum of growth on SILs or identify any specific SILs.
E6: Locally significant industrial sites	Sets out the need for evidence led Locally significant industrial sites (LSIS) boundaries and policies to be included in a Borough's Development Plans, and the types of development that will be considered.	**No Likely Significant Effect.** Sets out guidance to Borough's when preparing their Development Plans in relation to LSIS.
E7: Intensification, co-location and substitution of land for industry, logistics and services to support London's economic function	Encourages the intensification, co-location and substitution of land used for industry, logistics, support services, mixed use and residential development and sets out criteria under which development will be considered.	**No Likely Significant Effects** Sets out guidance for the intensification, substitution and co-location of land. No quantum, location or specific type of development is identified.
E8: Sector growth opportunities and spatial clusters	Sets out broad principles for promoting employment opportunities across all sectors.	**No Likely Significant Effect.** A policy relating to growth opportunities and spatial clusters. It promotes opportunities for growth but does not identify any specify location, or quantum.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
E9: retail, markets and hot food takeaways	Sets out broad principles for the promotion of sustainable access to retail, markets and hot food takeaways.	**No Likely Significant Effects** Sets out guidance for the promotion and sustainable access to retail, markets and hot food takeaways.
E10: Visitor Infrastructure	Sets out the broad principles for strengthening London's visitor economy including a specific target for provision of 58,000 new serviced accommodation bedrooms during the Plan period.	**No Likely Significant Effect** This policy provides to strengthen London's visitor economy and is generally about principles, but it specifically includes a target for provision of 58,000 new serviced accommodation bedrooms during the Plan period. Dependant on the location and extent of new tourism facilities there is thus potential for the following impact pathways to link to European designated sites: • Atmospheric pollution • Recreational pressure • Hydrological pollution • Changes to hydrological resources However, such growth could be delivered in the majority of London without affecting European sites since most London boroughs are relatively remote from any European sites. There is therefore no reason, since the policy is not location specific, to conclude that this level of growth could not be achieved within London as a whole, particularly since the main visitor centres of London are distant from European sites. It is for individual boroughs to determine where new capacity is most suitably located, through their Local Plans and development control process and these processes will include HRA as appropriate. Therefore, there are safeguards in place to ensure that this policy would not result in likely significant effects on European sites.
E11: Skills and opportunities for all	Sets out the Mayor's strategy for working with strategic partners, to co-ordinate national, regional and local initiatives to ensure that the necessary skills and opportunities are available for the London workforce, including addressing inequalities.	**No Likely Significant Effect.** This is a policy relating to the provision skills and opportunities.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
Chapter 7: Heritage and Culture		
HC1: Heritage Conservation and Growth	Sets out the Mayor's requirements and directions to boroughs regarding the conservation of heritage assets.	**No Likely Significant Effect.** A development management policy relating to conserving heritage assets. There are no impact pathways present.
HC2: World Heritage Sites	Sets out the Mayor's requirements and directions to boroughs regarding the protection and enhancement of London's World Heritage Sites.	**No Likely Significant Effect.** A development management policy relating to WHS. There are no impact pathways present.
HC3: Strategic Views	Sets out the Mayor's requirements and directions to boroughs regarding the protection and enhancement of London's Strategic Views.	**No Likely Significant Effect.** A development management policy relating to strategic views. There are no impact pathways present.
HC4: London View Management Framework	Sets out the Mayor's intentions and directions to boroughs with regard to implementing the London View Management Framework and how this affects new development.	**No Likely Significant Effect.** A development implementation policy relating to the London View Management Framework. There are no impact pathways present.
HC5: Supporting London's Culture and Creative Industries	Sets out the Mayor's strategy for supporting the continued, growth and evolution of London's diverse cultural facilities and creative industries, including the criteria for designation of Creative Enterprise Zones and Cultural Quarters, although the locations of possible zones are not identified.	**No Likely Significant Effect** This is policy relates to supporting culture and creative industries in London. It does not provide for any specific quantum, location or type of development. This policy provides positive provision for good and integrated public transport which has potential to reduce atmospheric pollution.
HC6: Supporting the Night-time Economy	Sets out how the Mayor will, and boroughs should, support the growth and diversification of the evening and night time economy, in particular within the strategic areas of night time activity. Also sets out criteria for boroughs to use in their Local Plans to promote the night-time economy, while diversifying the range of experiences available.	**No Likely Significant Effect.** Whilst this is a development management policy relating to the night time economy it does not provide for any specific type, location or quantum of development. This policy contains positive provision as it promotes the development of the night time economy in locations where public transport such as the Night Tube and night buses are available,

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		thus reducing atmospheric pollution contributions from private vehicle emissions.
HC7: Protecting Public Houses	Sets out the Mayor's strategy for protecting public houses around London, including directions to boroughs.	**No Likely Significant Effect.** This policy provide for the protection of Public Houses.
Chapter 8: Green Infrastructure and Natural Environment		
G1: Green Infrastructure	Specifically sets out the Mayor's aim to ensure that over 50% of London's surface area consists of green coverage by 2050.	**No Likely Significant Effect.** There are no adverse linking impact pathways present.
G2: London's Green Belt	Sets out the Mayor's stance on protection of the Green Belt.	**No Likely Significant Effect.** A development management policy relating to the Green Belt. There are no linking impact pathways present.
G3: Metropolitan Open Land	Sets out the Mayor's stance on protection of Metropolitan Open Land (MOL).	**No Likely Significant Effect.** A development management policy relating to MOL. There are no linking impact pathways present, although increasing the range of uses of MOL would need to be mindful of the sensitivities of some of these areas which overlap with internationally important wildlife sites.
G4: Local Green and Open Space	Sets out the Mayor's stance on protection and creation of Local Green and Open Space.	**No Likely Significant Effects** A positive policy providing for the protection and creation of Local Green and Open Space which has the potential to divert recreational pressure away from sensitive European designated sites.
G5: Urban Greening	Sets out the Mayor's stance relating to Urban Greening.	**No Likely Significant Effect.** A development management policy relating to Urban greening. There are no linking impact pathways present.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
G6: Biodiversity and Access to Nature	Seeks to enhance biodiversity and access to nature. Of particular relevant to European sites, it states that *'In developing relevant Local Development Documents boroughs should: … ensure sites of European or National Nature Conservation Importance are clearly identified'.*	**No Likely Significant Effect.** This is a positive policy that seeks to protect nature conservation sites including European designated sites. **Changes to the supporting text of this policy are recommended as follows:** • **It is recommended that reference is made within the supporting text of this policy for the requirement of an Appropriate Assessment where a project or plan is likely to result in significant [adverse] effects upon a European (International) designated site. At the moment the policy only states that such sites should be clearly identified in Local Plans. This will be required to ensure the integrity of the designated site is not affected.** **It should also be noted (perhaps in the supporting text since it is for information) that, while the mitigation hierarchy does apply to European sites, before compensatory provision is identified as the only solution to a European site conflict, it is necessary to demonstrate no alternatives to them and Imperative Reasons of Overriding Public Interest (IROPI) as to why the project should go ahead.**
G7: Trees and Woodland	Sets out the Mayor's requirements and directions to boroughs regarding protection and additional planting of trees and woodlands.	**No Likely Significant Effect.** This is a positive policy that seeks to protect trees and woodlands and encourages new trees and woodlands in appropriate locations. There are no adverse linking impact pathways present.
G8: Food Growing	Sets out the Mayor's requirements and directions to boroughs regarding food growing	**No Likely Significant Effect.** A development management policy relating to food growth. There are no linking impact pathways present.
G9: Geodiversity	Sets out the Mayor's requirements and directions to boroughs regarding protection of geodiversity.	**No Likely Significant Effect.**

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		This is a positive policy that seeks to protect and enhance geodiversity. There are no adverse linking impact pathways present.
Chapter 9: Sustainable Infrastructure		
SI1: Improving Air Quality	Sets out a detailed and lengthy list of the ways in which the Mayor will work with all relevant partners in order to significantly improve London's air quality and to reduce exposure to poor air quality, especially for vulnerable people. This includes (among many other proposals) requiring air quality assessments for all major developments unless they can demonstrate that transport and building emissions will be less than the previous or existing use. There is an explicit objective in the policy that development proposals should not lead to further deterioration of existing poor air quality.	**No Likely Significant Effect** This is a positive policy that is intended (alongside the Mayor's Transport Strategy and London Environment Strategy) to drive significantly improved air quality within London. Whilst this improvement in air quality is driven primarily by human health considerations, an improvement in air quality through reductions in NOx concentrations will have a positive impact on levels of atmospheric pollution at European designated sites.
SI2: Minimising greenhouse gas emissions	Sets out the Mayor's commitment to making London a zero carbon city and describes the ways in which he will work with the boroughs to achieve this, particularly by minimising carbon dioxide emissions.	**No Likely Significant Effect.** This policy provides a positive environmental commitment. There are no adverse impact pathways present.
SI3: Energy Infrastructure	Sets out the ways in which the Mayor will work with boroughs, energy companies and major developers to promote the timely and effective development of London's energy system (energy production, distribution, storage, supply and consumption). This includes a hierarchy for selecting heat sources for communal heating systems in major development proposals in Heat Network Priority Areas to minimise NOx emissions.	**No Likely Significant Effect.** This policy promotes the development of London's energy system, but does not specifically identify any location, or type of energy related development. Dependant on the location or type of development, potential impact pathways could exist (such as changes in hydrology, disturbance from construction/ operational activities, interrupting flightlines), however this policy does not provide specifically for any location or type of development. Moreover, it also has positive air quality dimensions regarding reduction of NOx emissions. As such there are no impact pathways present.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
SI4: Managing Heat Risk	Sets out how the Mayor intends to reduce the impact of the urban heat island effect in London by promoting urban design and the implementation of green infrastructure that minimises heat gain/generation.	**No Likely Significant Effect.** This provides policy for managing heat risk. There are no linking impact pathways present.
SI5: Water infrastructure	Sets out how the Mayor will work in partnership with appropriate authorities to protect and conserve water supplies and resources in a sustainable manner minimising the use of mains water and reducing leakage levels. Also sets out how the Mayor and boroughs will promote the protection and improvements of water quality and the water environment in line with the Thames River Basin Management Plan and catchment Plans. This includes support in principle for strategic waste water treatment infrastructure investment that will be required to accommodate London's growth as well as climate change impacts.	**No Likely Significant Effect.** This is a positive policy that aims to conserve and protect water resources in a sustainable manner. It provides for new residential development to minimise use of mains water, thus reducing pressure upon water resources in the natural environment that may interact with European designated sites. This policy also promotes the improvement of water quality and the water environment, which could also have a positive impact upon hydrologically connected European designated sites. This policy provides for 'sustainable' waste water treatment infrastructure, which by definition would not have an adverse impact upon European designated sites. This includes future proofing development so that future misconnections between foul and surface water networks are not easily created.
SI6: Digital connectivity infrastructure	Sets out the Mayor's policy regarding adequate digital infrastructure and encourages boroughs to seek connectivity speeds greater than those formally required by current Building Regulations.	**No Likely Significant Effect.** This could be a positive policy for European sites. Providing increased digital infrastructure, could increase remote networking opportunities (e.g. video conferencing and file sharing) and thus reduce the need for the number of journeys for work.
SI7: Reducing waste and supporting the circular economy	Sets out the ways in which the Mayor will work with all relevant partners, within and beyond London, to reduce waste, increase material reuse and recycling and reduce waste going for disposal.	**No Likely Significant Effect.** This is a positive policy that provides for a reduction in waste and improves resource efficiency. This has potential to reduce resource use such as water and energy and thus reduce atmospheric pollution contributions. There are no adverse impact pathways present.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
SI8: Waste Capacity and Net Waste Self Sufficiency	Sets out the ways in which the Mayor will work with all relevant partners to ensure that London manages its waste sustainably, particularly by achieving a target for London to manage the equivalent of 100% of London's waste within London (i.e. net self-sufficiency) by 2026. The policy also sets out criteria against which proposals for new waste sites (or increased capacity of existing sites) are evaluated, including consideration of the transport and environmental impacts of all vehicle movements associated with the proposal and support for the use of rail and waterway networks to transfer waste where feasible, rather than road.	**No Likely Significant Effect**. This is a positive policy. It aims for net self-sufficiency by 2026 and includes for new waste management sites where required, which should reduce the need for waste to be exported out of London for processing. The supporting text for the policy acknowledges that some waste may still be exported out of London, particularly to landfill. However, it also makes it clear that in such situations it will be important to show that the 'receiving' authority has the capacity to deal with the waste over the lifetime of the development. It is possible that increases in capacity of some waste sites outside London may be required, but this is speculative and no such sites have been identified. Although the potential need for new waste management sites in London is identified in the policy, it is for the Boroughs (and waste authorities) to determine how many sites there should be and where they should be located. That is not set by the London Plan and therefore no analysis can be undertaken. In any case, any proposal would need to be subject to its own HRA as part of the normal development control process, which would protect European sites. Moreover, this policy makes it clear that although the boroughs have been each given an apportionment, they are encouraged to collaborate by pooling their apportionment requirements. Provided the aggregated total apportionment figure is met, it is not necessary for boroughs to meet their waste apportionment figures individually. This will maximise flexibility to deliver the necessary capacity around environmental and other constraints.
SI9: Safeguarded Waste Sites	Identifies that existing waste sites should be safeguarded and retained in waste management use, and identifies the only circumstances under which the Mayor would support the loss of an existing waste site.	**No Likely Significant Effect.** This policy is for the safeguarding of future waste sites in order to prevent their loss to other forms of development which would impede achievement of Policy SI5. There are no impact pathways present.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
SI10: Aggregates	Identifies the ways in which the Mayor will work with all relevant partners to ensure an adequate supply of aggregates to support construction in London. These include an emphasis on recycling (including targets for such), extraction of aggregates from within London (and an associated landbank target apportioned by borough) and movement of aggregates into and around London by sustainable transport modes. To facilitate the latter the policy also directs boroughs to safeguard wharves or railheads that would be suitable for aggregates. The boroughs with landbank targets are Havering, Redbridge, Hillingdon and Hounslow.	**No Likely Significant Effect.** This policy identifies a quantum of aggregates to be provided from within London and identifies the boroughs in question. However, it does not identify the sites that should contribute to this landbank, explicitly deferring that decision to individual boroughs. Since only a quantum of aggregates is provided per borough no more detailed technical assessment of impacts can be undertaken. However the selection of any aggregates sites would need to be subject to HRA by each borough as appropriate and this would safeguard European sites. The policy is positive in that it explicitly directs movement of aggregates to be by sustainable transport modes where possible, which would reduce the number of HGV movements involved. This is particularly relevant for London Borough of Redbridge given the presence of Epping Forest SAC within the borough and the air quality sensitivity of that site.
SI11: Hydraulic fracturing (Fracking)	Makes it clear that proposals for exploration, appraisal or production of shale gas via hydraulic fracturing in London will be opposed.	**No Likely Significant Effect.** There are no linking impact pathways present.
SI12: Flood Risk Management	Sets out how the Mayor will work with the Environment Agency and the London borough Lead Local Flood Authorities to address current and expected future flood risk from all sources in a sustainable and cost effective way.	**No Likely Significant Effect.** This is a positive policy that aims to reduce flood risk by working across authority boundaries and utilising strategic documents. There are no linking impact pathways present.
SI13: Sustainable Drainage	Identifies that London is at particular risk from surface water flooding, mainly due to the large extent of impermeable surfaces and sets out how development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible	**No Likely Significant Effect.** This is a positive policy that aims to reduce surface water flooding. There are no linking impact pathways present.
SI14: Waterways – Strategic Role	Sets out how the Mayor will promote the protection of London's waterways and water-related use. The supporting text makes it	**No Likely Significant Effect** This is a positive policy for London's European sites, in that encouraging use of London's waterways may reduce recreational

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
	clear that 'waterways' applies to waterbodies such as lakes and reservoirs, as well as flowing watercourses.	visits to areas such as Epping Forest (such as through the Walthamstow Wetlands project due to open in 2017) and also may reduce vehicle movements on London's road network. Use of waterbodies such as reservoirs for (for example) recreation would still need to comply with the requirements of the Habitats Directive where those waterbodies are internationally important. This is a matter of law and does not need to be stated in this policy since the policy does not specifically identify particular waterbodies. The fact that recreational use and designated waterbodies are not incompatible is demonstrated by the Walthamstow Wetlands project which incorporates several internationally important waterbodies.
SI15: Water Transport	Sets out how the Mayor will work with relevant partners to preserve and enhance water transport facilities. Also identifies that the Mayor will work with relevant partners to increase the amount of freight transported by river.	**No Likely Significant Effect** This policy provides for passenger and freight transport on the River Thames and includes for new infrastructure to facilitate increased river transportation on the river. This is a positive policy in that the more use of waterways for passenger and freight movements the fewer vehicle movements on London's road network.
SI16: Waterways – Use & Enjoyment	Identifies that development and Local Plans should protect and enhance waterway infrastructure, which will enable water dependent uses. The provision of water sport centres and new infrastructure, as part of development proposals, will be supported if a deficit in provision has been identified locally and if the infrastructure does not negatively impact navigation.	**No Likely Significant Effect** This is a positive policy for London's European sites, in that encouraging use of London's waterways may reduce recreational visits to areas such as Epping Forest (such as through the newly opened Walthamstow Wetlands project) and also may reduce vehicle movements on London's road network. Use of waterbodies such as reservoirs for (for example) recreation would still need to comply with the requirements of the Habitats Directive where those waterbodies are internationally important and any proposals for water sports centres (for example) on internationally important waterbodies would need to be subject to application-level HRA. This is a matter of law and does not need to be stated in this policy since the policy does not specifically identify

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		particular waterbodies and only mentions water sports centres as an example of new infrastructure.
SI19: Protecting London's Waterways	Identifies that development proposals that facilitate river restoration, including opportunities to open culverts, naturalise river channels, protect the foreshore and increase the value of habitats will generally be supported and that proposals to impound and constrain the waterways will be resisted.	**No Likely Significant Effect.** This is a positive policy that facilitates naturalisation of river channels. There are no impact pathways present.
Chapter 10: Transport		
T1: Strategic approach to transport	Policy that sets out the requirement for new development to support the Mayor's strategic target for an 80% mode shift towards walking, cycling and public transport by 2041.	**No Likely Significant Effect.** This policy supports the Mayor's strategic approach to transport. This includes the positive provision of an 80% mode shift towards walking, cycling and public transport. There are no adverse impact pathways present.
T2: Healthy Streets	Sets out the Mayor's expectations and directions to boroughs regarding the application of the Mayor's Healthy Streets Approach, to reduce health inequalities, car use, vehicle emissions and noise; increase walking, cycling and public transport use; and improve street safety and amenity.	**No Likely Significant Effect.** A positive policy that promotes the reduction in car use, and vehicle emission, and increase walking, cycling and public transport which could result in a positive impact upon European designated sites that are sensitive to poor air quality.
T3: Transport connectivity and safeguarding	Sets out how the Mayor will work with strategic partners to maximise transport integration and public transport capacity across London to facilitate sustainable delivery of the Mayor's growth targets. States that the Mayor considers that particular priority should be given to the completion of the Elizabeth Line (Crossrail 1), delivering capacity increases on existing Underground lines, exploring the potential of service improvements to the Overground, securing Crossrail 2, the Bakerloo Line extension, and river crossings.	**No Likely Significant Effect** This policy refers to '*develop effective transport policies and projects to support the sustainable development of London and the Wider South East as well as to support better national and international public transport connections'*. The key word here is 'sustainable' development and the context of the policy is clearly about improving public transportation. Improving public transport capacity and connectivity will be positive for protecting European sites sensitive to air quality, notably Epping Forest SAC. Any schemes identified in Table 10.1 of this policy would be required to ensure the Habitats Regulations are adhered to in the form of a

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		scheme specific HRA when appropriate levels of detail are available.
T4: Assessing and mitigating transport impacts	Sets out the Mayor's directions to boroughs regarding transport impact assessment and the need for transport mitigation. This includes a requirement that where public transport capacity is limited, planning permission may be contingent on the provision of necessary public transport.	**No Likely Significant Effect.** This policy identifies the need to assess and mitigate transport impacts. It does not provide for any transport schemes. It contains the following positive provision '*The cumulative impacts of development on public transport and the road network capacity including walking and cycling, as well as associated effects on public health, should be taken into account and mitigated.'* This has the potential to reduce atmospheric pollution generally, and thus potentially have a positive impact on European designated sites that are sensitive to poor air quality. There are no adverse impact pathways present. **This policy states: '*Transport assessments should be submitted with development proposals to ensure that any impacts on the capacity of the transport network (including impacts on pedestrians and the cycle network), at the local, network-wide and strategic level, are fully assessed'*. It is recommended that this part of the policy is expanded upon slightly to make specific reference to the potential need for such assessments and mitigation to protect internationally important wildlife sites around London, particularly Epping Forest SAC.** **This would then constitute a direction to the London boroughs to participate as necessary in the strategic multi-authority assessments of air quality impact on Epping Forest SAC, which is already underway.**
T5: Cycling	Sets out the mayors stance to cycling. This includes the removal of barriers to cycling and to create a healthy environment for people to cycle and cycle parking standards.	**No Likely Significant Effect.** A positive policy; increased cycling has the potential to reduce atmospheric pollution contributions. There are no impact pathways present.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
T6: Car Parking	Identifies that car parking should be restricted in line with levels of existing and future public transport accessibility and connectivity.	**No Likely Significant Effect.** This policy relates to parking. There are no impact pathways present.
T6.1 Residential Parking	Set's criteria relating to residential parking. This includes the provision of electric or Ultra-Low Emission Vehicles. The policy includes criteria relating to disabled parking, and car club spaces.	**No Likely Significant Effect.** The positive provision of charging points for electric and Ultra-Low Emission vehicles has the potential to reduce atmospheric pollution contributions from more polluting fossil fuelled vehicles. There are no impact pathways present.
T6.2 office Parking	Sets out parking standards for new office development. It encourages car free development in well connected parts of London. In outer London boroughs that wish to provide more generous parking provision, this will need to be based upon an evidence based policy. The more generous parking standards should not be applied borough wide.	**No Likely Significant Effects.** A positive policy that provides for car free development in well-connected parts of London, and aims to limit parking provision within outer London boroughs, thus dissuading people to utilising private fossil fuelled transport modes reducing atmospheric pollution contributions. There are no impact pathways present.
T6.3 Retail Parking	Provides parking standards in relation to retail parking	**No Likely Significant Effects.** A development management policy relating to retail parking. There are no impact pathways present.
T6.4 Hotel and leisure uses parking	Limits parking at new development to that required for operational needs, disable provision and taxis, coaches and deliveries and services. All operational parking must provide infrastructure for electric or other Ultra-Low Emission vehicles, including active charging points for all taxi spaces.	**No Likely Significant Effect.** The positive provision of charging points for electric and Ultra-Low Emission vehicles has the potential to reduce atmospheric pollution contributions from more polluting fossil fuelled vehicles. There are no impact pathways present.
T6.5 Non-residential disabled persons parking	Provides parking standards for non-residential parking.	**No Likely Significant Effect.** A development management policy relating to non-residential parking.

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
T7: Freight	Provides the development of policies by boroughs to reduce freight trips, reduce emissions from freight, use of sustainable last –mile schemes and the provision of rapid electric vehicle charging points for freight vehicles. Supports the provision of carbon-free travel from 2050, the provision of hydrogen refuelling stations and rapid electric vehicle charging points at logistics and industrial locations. Sets out that existing sites for consolidation and efficient distribution will be safeguarded, and new sites identified (including wharves and railheads), to reduce the impact of the movement of freight on the road network.	**No Likely Significant Effect.** Overall positive policy intended to maximise sustainable movement of. Dependent on locations and scale, new freight logistics and transport sites could have adverse effects on features of internationally designated sites. However, this policy does not identify any specific location or extent of development.
T8:Aviation	Identifies that the Mayor supports the case for additional aviation capacity in the south east of England providing it would meet London's needs. Also stipulates that the environmental impacts of aviation must be fully acknowledged and the aviation industry should fully meet its external and environmental costs and avoid, minimise and mitigate harm, particularly in respect of noise, air quality and climate change. States proposals which would lead to changes in airport operations, air traffic movements general and business aviation activity must take full account of their environmental impacts. States that transport provides should increase the proportion of journeys passengers and staff make by sustainable means such as rail, bus and cycling, and minimise the environmental impacts of airport servicing and onward freight transport. Specifically states that the Mayor will oppose the expansion of Heathrow Airport unless it can be shown that no additional noise or air quality harm would result.	**Potential HRA implications** It is acknowledge that air traffic is a large contributor to atmospheric pollution and airport growth could therefore have an adverse effect. However, the policy specifically acknowledges this. This policy does not in itself provide for any location, type or quantum of aviation development. It also encourages use of sustainable modes of transport, thus potentially reducing atmospheric pollution contributions. **It is recommended that some of the policy text is strengthened with regard to protecting internationally important wildlife sites. The term 'environmental costs' implies that whatever environmental damage that might result would/could be addressed, whereas for European sites the airport operator/promoter would actually need to prove 'no alternatives' and 'imperative reasons of overriding public interest' first. 'Acknowledging' impacts and meeting 'environmental costs' would not necessarily be compliant with the Habitats Directive.** **Further, section F and of Policy T8 states that: '*Proposals that would lead to changes in airport operations or air traffic movements must take full account of their environmental*****

Policy	Brief summary *(refer to the London Plan for actual policy text)*	Screening outcome[1]
		***impacts*'. 'Take full account' could be expanded into a need to avoid adverse effects on internationally important ecological sites.**
T9: Funding transport infrastructure through planning	Sets out the Mayor's intention to seek MCIL (Mayoral Community Infrastructure Levy) contributions towards the funding of transport infrastructure of strategic importance i.e. Crossrail 2 and for the use of S106 agreements to expand London-wide cycle networks , and supporting infrastructure to create pleasant environments for walking.	**No Likely Significant Effect.** This policy seeks to provide funding for transport infrastructure through planning including cycle and walking infrastructure. It dies not identify any development itself. There are no linking impact pathways present.

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