

Figure 3.1. Phase 1 Habitat Map

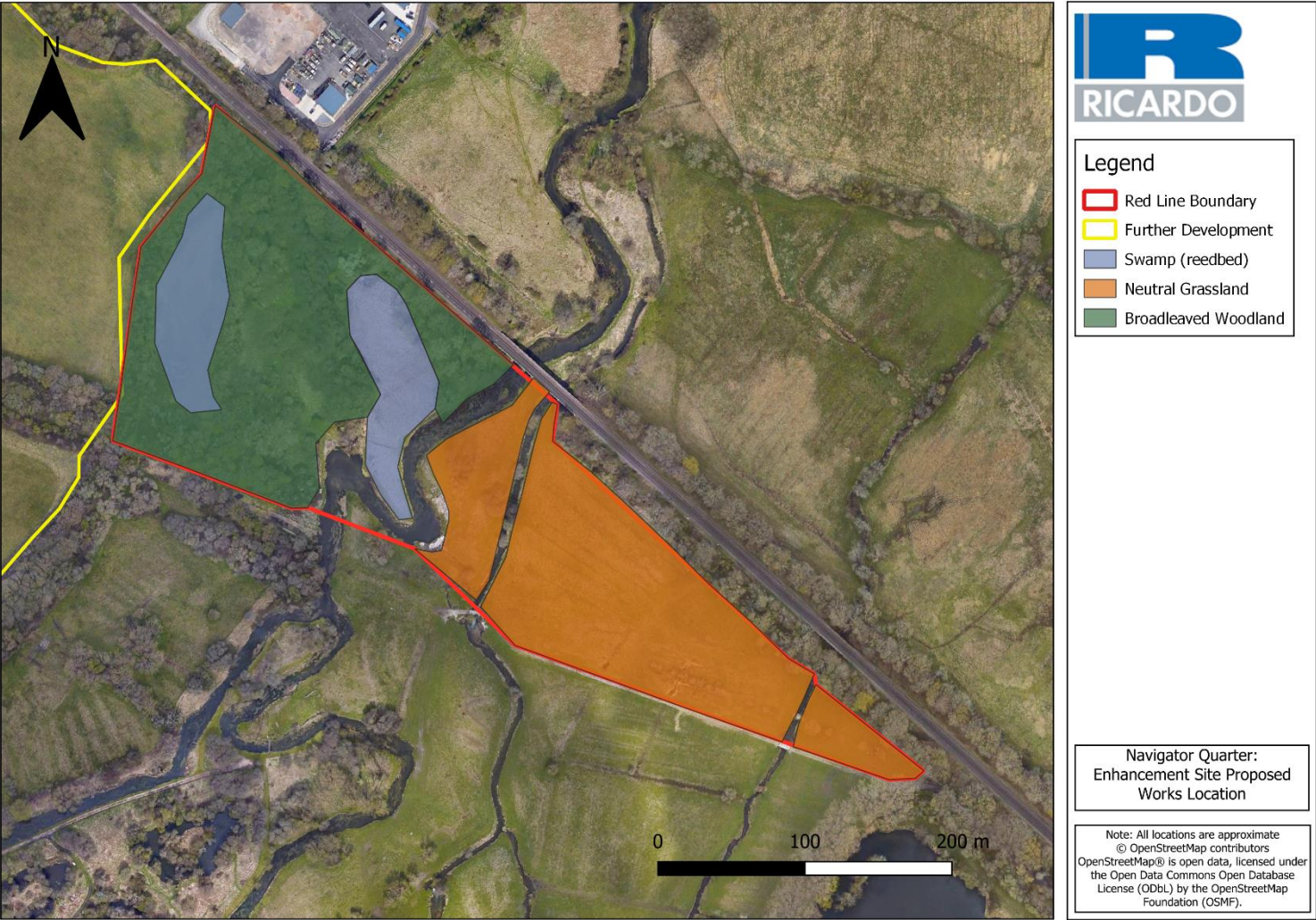


Table 3.1 – Summary of ecological features, potential impacts and recommendations

Sites: Enhancement Site NGR: Approximate central grid reference – SU4508817572		PROJECT NAME: Navigator Quarter, Southampton Airport SURVEY DATE: 23/06/2022 SURVEYORS: Laurence David, Tom Clayton	
Ecological Features and Status <i>(see Appendix 1 for legislation summary)</i>	Description: Presence (actual or potential), level of potential (high, medium, low, negligible), distance and direction from site, locations within site, relevant habitat features and connectivity, etc.	Potential Impacts:	Recommendations: Requirement for further survey and/or assessment.
European Statutory Designated Sites (e.g. Special Protection Areas (SPA) / Special Areas of Conservation (SAC) / Ramsar sites) within 2km Internationally important and protected by law: The Conservation of Habitats and Species Regulations 2017 (as amended)	The Enhancement site lies within the River Itchen SAC (which spans an area of 303.98ha). Annex I Habitats that are a qualifying feature: - Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. Annex II Species that are a qualifying feature: - Southern Damselfly <i>Coenagrion mercurial</i> - Bullhead <i>Cottus gobio</i> - White-clawed (or Atlantic stream) crayfish <i>Austropotamobius pallipes</i> - Brook lamprey <i>Lampetra planeri</i> - Atlantic salmon <i>Salmo salar</i> - Otter <i>Lutra</i> Suitable supporting habitat for southern damselfly (waterbodies) and otter (possible commuting habitat along waterbody) was identified to the east of the FTG site. There are numerous waterbodies to the	Construction may result in permanent loss of scrub and grassland habitats and has the potential to result in disturbance upon the River Itchen SAC through noise, dust, vibration, pollution incidents or siltation.	Due to the potential for impacts to the SAC it is recommended that a Habitats Regulations Assessment (HRA) Stage 1 Screening exercise is completed with respect to the Enhancement site, in consultation with Natural England. All European and Internationally designated sites within 10km of the site should be considered within the Stage 1 HRA. Consultation with Natural England is recommended as part of the Stage 1 HRA Screening and is mandatory in relation to the underlying SSSI and in the event that a Stage 2 HRA Appropriate Assessment is required.

	east of the site that are hydrologically connected (groundwater) to the River Itchen. The site lies entirely outside of the Solent and Dorset Coast SPA (which spans an area of 66899ha) but is located approximately 2.9km at its closest point. Annex I qualifying ornithological interest: • Sandwich tern <i>Sterna sandvicensis</i> – 441 pairs, 4.01% of GB breeding population • Common tern <i>Sterna hirundo</i> – 492 pairs, 4.77% of GB breeding population • Little tern <i>Sternula albifrons</i> – 63 pairs, 3.31% of GB breeding population The site does not provide suitable habitat for these species.		
National Statutory Designated Sites (e.g. Sites of Special Scientific Interest (SSSI)) within 2km protected by law: • Wildlife & Countryside Act 1981 (as amended)	The Enhancement site lies within the River Itchen SSSI. The Lakeside site is within 1km of the River Itchen SSSI at the most eastern section (which spans an area of 748.02ha). River Itchen SSSI is notified for 23 features including: • Assemblages of breeding birds - Lowland open waters and their margins • Atlantic salmon, <i>Salmo salar</i> • Brook lamprey, <i>Lampetra planeri</i> • Bullhead, <i>Cottus gobio</i> • Flowing waters - Type III: base-rich, low-energy lowland rivers and streams, generally with a stable flow regime • Invertebrate assemblage	There will be no direct impact to the SSSI from any enhancement. Therefore, there is potential for short-term, temporary disturbance from the construction works and loss of adjacent functionally linked habitat.	Further breeding bird surveys are not recommended for this site.

	• M22 - <i>Juncus subnodulosus</i> - <i>Cirsium palustre</i> fen meadow • M27 - <i>Filipendula ulmaria</i> - <i>Angelica sylvestris</i> mire • MG8 - <i>Cynosurus cristatus</i> - <i>Caltha palustris</i> grassland • Nationally rare and scarce dragonfly species - Southern Damselfly, <i>Coenagrion mercuriale</i>, • Otter, <i>Lutra lutra</i> • S25 - <i>Phragmites australis</i> - <i>Eupatorium cannabinum</i> tall-herb fen • S26 - <i>Phragmites australis</i> - <i>Urtica dioica</i> tall-herb fen • S28 - <i>Phalaris arundinacea</i> tall-herb fen • S3 - <i>Carex paniculata</i> swamp • S4 - <i>Phragmites australis</i> swamp and reed-beds • S5 - <i>Glyceria maxima</i> swamp • S7 - <i>Carex acutiformis</i> swamp • W1 - <i>Salix cinerea</i> - <i>Galium palustre</i> woodland • W5 - <i>Alnus glutinosa</i> - <i>Carex paniculata</i> woodland • W6 - <i>Alnus glutinosa</i> - <i>Urtica dioica</i> woodland • Water vole, <i>Arvicola terrestris</i> (now known as <i>A. amphibius</i>) • White-clawed (or Atlantic stream) crayfish, <i>Austropotamobius pallipes</i> The SSSI is currently in poor and unfavourable condition due to a lack of scrub/tree cover and undesirable/non-native species cover (brambles, nettles, <i>Urtica dioica</i>, Himalayan balsam, <i>Impatiens glandulifera</i>).		
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	Atlantic salmon, brook lamprey, bullhead, otter, southern damselfly and white clawed crayfish are discussed above in relation to the River Itchen SAC. The works site comprises of a broad-leaved plantation woodland habitat and is situated in close proximity to the River Itchen SSSI. However, the site is not considered likely to support any notified features of the SSSI.		
Local Nature Reserve (LNR) within 2 km Locally important and protected by law: Wildlife & Countryside Act 1981 (as amended)	There are no Local Nature Reserves located within 2km of the site.	N/a	N/a
Sites of Interest for Nature Conservation (SINC) Non-statutory designation – local planning consideration	There are 32 Sites of Interest for Nature Conservation (SINCs) within the search area. Only those that are ecologically connected to the site are considered further in this assessment. Itchen Valley Nature Reserve SINC lies within the enhancement site and is designated for its woodland, grassland and wetland habitats as well as the presence of blunt flowered rush, <i>Juncus subnodulosus</i>. Hog Wood and Gravel Pits lies within 50m from the enhancement site. Allington Manor Farm Water Meadows is 300m away from the site at its closest point. The site has been designated due to its distinctive flora and fauna. Stanford Meadow is situated 200m away from the enhancement site.	N/a	Standard pollution prevention measures should be adhered to in order to protect the adjacent waterbody. See SSSI survey recommendations.

	Meadow North of Railway site is situated less than 300m away from the enhancement site.		
Notable Habitats Listed under: • NERC Act 2006	N/a	N/a	N/a
Notable Plants Some may be protected under: • Wildlife & Countryside Act 1981 (as amended) • The Conservation of Habitats and Species Regulations 2017 (as amended) or listed under: • NERC Act 2006 UK Red Data Book	Data returned from HBIC included records for numerous S.41 ⁴ , Local BAP ⁵ Red List ⁶ and county rare/scarce rare plants.	N/a	N/a
Invasive, non-native flora and fauna	Data returned from HBIC contained no records for invasive species within the site. No invasive species were identified during the survey.	N/A	Pollution, prevention measures should be implemented to avoid pollution incidents.

⁴ Habitats and species of principal importance in England as outlined in Natural Environment and Rural Communities (NERC) Act 2006.

⁵ Hampshire Biodiversity Partnership, Biodiversity Action Plan for Hampshire, Vol 2, 2011.

⁶ Cheffings, C.M. & Farrell, L. (Eds), Dines, T.D., Jones, R.A., Leach, S.J., McKean, D.R., Pearman, D.A., Preston, C.D., Rumsey, F.J., Taylor, I. 2005. The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. Joint Nature Conservation Committee, Peterborough.

• Schedule 9 Wildlife and Countryside Act (as amended) • Environmental Protection Act 1990			
Invasive, non-native mammals	There are no records received from HIBC of INNS mammals in the search area. No Invasive non-native species were identified on the site visit.	N/A	N/A
Notable invertebrates / assemblages Some may be protected or listed under: • The Conservation of Habitats and Species Regulations 2017 (as amended) • Wildlife & Countryside Act 1981 (as amended) • NERC Act 2006 • UK Red Data Book	Data returned from HBIC contained numerous records of invertebrates listed on S.41 and the UK Red Data Book. No records for notable invertebrates were provided within the site. A total of 59 records of stag beetle <i>Lucanus cervus</i>, with the closest within 200m from the red line boundary, (a Habitats Directive Annex II species) were identified within the search area. Deadwood habitat is found within the site which provides some suitable habitat for this species. A total of nine records of southern damselfly (a Habitats Directive Annex II and Wildlife & Countryside Act Schedule 5 species) were identified within 2km of the site. The waterbodies adjacent to the site provide possible suitable habitat for this species.	The scrub within the site boundary may support a range of invertebrate species.	N/a

Bats Protected by law: • The Conservation of Habitats and Species Regulations 2017 (as amended) • Wildlife & Countryside Act 1981 (as amended) Listed under: • NERC Act 2006	Data returned from HBIC contained records for a number of species within the search area, including common pipistrelle, <i>Pipistrellus pipistrellus</i>, Nathusius's pipistrelle, <i>Pipistrellus nathusii</i>, soprano pipistrelle, <i>Pipistrellus pygmaeus</i>, noctule, <i>Nyctalus noctula</i>, Natterer's bat, <i>Myotis nattereri</i>, whiskered bat, <i>Myotis mystacinus</i>, brown long-eared bat, <i>Plecotus auritus</i>, serotine, <i>Eptesicus serotinus</i> and Daubenton's bat, <i>Myotis daubentonii</i>. The nearby woodland on adjacent sites provides great habitat for Bats for foraging. The woodland and wetland habitats adjacent to the site have the potential to support an assemblage of bat species and therefore the site was assessed as being high potential for bats⁷. Foraging and commuting habitat may be impacted by the proposed works along with loss of foraging habitats. The site was assessed as having	As the site is chosen for enhancement there are no impacts to be expected. Lighting during works has potential to deter bats from foraging or using roosts within the immediate vicinity.	N/a
Breeding and wintering birds Protected by law: • Wildlife & Countryside Act 1981 (as amended) Some may be listed under: • NERC Act 2006	Data returned from the British Trust for Ornithology (BTO) and HBIC, included records for a total of 171 bird species within the search area. These species are all protected by law meaning it is an offence to intentionally kill, take or damage nests and destroy eggs. Of the records obtained, 28 species are also listed under Schedule 1 part 1 of the Wildlife and Countryside Act as amended (which additionally protects those birds from disturbance during courtship, breeding and rearing their young to independence). Ten Amber listed species and seven Red listed species were included in the records. The on-site habitats recorded have been assessed as potentially supporting an assemblage of breeding	N/a	N/a

⁷ Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd edition. Bat Conservation Trust, London.

• RSPB Birds of Conservation Concern	and wintering birds. The grassland on the site provides ground nesting opportunities. While on site there were many Starling <i>Sturnus vulgaris</i> individuals nesting in the North East Field with constant activity occurring. The adjacent area offers suitable nesting and foraging opportunities for breeding birds through provision of seeds, fruits, invertebrates, and small mammals. In addition, the adjacent wetlands provide further suitable nesting and foraging opportunities for breeding birds.		
Badger Protected by law: • Protection of Badgers Act 1992	HBIC provided 17 records of badger within the search area. The closest being 800m away from the Lakeside site. No active badger setts were identified within or close to the site.	N/a	N/a
Dormouse (<i>Muscardinus avellanarius</i>) Protected by law: • The Conservation of Habitats and Species Regulations 2017 (as amended) • Wildlife & Countryside Act 1981 (as amended) Listed under:	HBIC provided 11 records of hazel dormouse within the search area. Monks Brook Greenway SINC is situated 1.5km south west at its closest point to the red line boundary and is designated for dormouse. However, there is no suitable habitat on the site.	N/a	N/a

• NERC Act 2006			
Harvest mouse (<i>Micromys minutus</i>) Listed under: • NERC Act 2006 • Southampton Biodiversity Action Plan	No records of harvest mouse were returned by HBIC.	N/a	N/A
Reptiles Protected by law: • Wildlife & Countryside Act 1981 (as amended) Listed under: • NERC Act 2006	Data returned from HBIC included records for four reptile species within the search area. These records included adder, <i>Vipera berus</i>, slow worm, <i>Anguis fragilis</i>, grass snake, <i>Natrix natrix</i>, and common lizard, <i>Zootoca vivipara</i>. The site offers good habitat for reptiles.	As the site is chosen for enhancement there are no impacts to be expected.	N/a
Great crested newt (GCN) (<i>Triturus cristatus</i>) Protected by law: • The Conservation of Habitats and Species Regulations 2017 (as amended) • Wildlife & Countryside Act	There are 14 records for GCN within the search area were supplied by HBIC. These are around Hog Wood which is within close proximity to the enhancement site.	As the site is chosen for enhancement there are no impacts to be expected.	N/a

1981 (as amended) Listed under: • NERC Act 2006			
Water vole (<i>Arvicola amphibius</i>) Protected by law: • Wildlife & Countryside Act 1981 (as amended) Listed under: • NERC Act 2006	Data returned from HBIC included 282 records of water vole within the search area. The nearest records occur in the Itchen Valley Nature Reserve which is within 1km from the Lakeside site. The site does provide suitable habitat for water vole.	As the site is chosen for enhancement there are no impacts to be expected.	Pollution, prevention measures should be implemented to avoid pollution incidents.
Otter (<i>Lutra lutra</i>) Protected by law: • The Conservation of Habitats and Species Regulations 2017 (as amended) • Wildlife & Countryside Act 1981 (as amended) Listed under: NERC Act 2006	Data returned from HBIC included 250 records of otter within the search area. Otter is also a qualifying feature of the River Itchen SAC and SSSI.	As the site is chosen for enhancement there are no impacts to be expected.	N/a

Fish Protected by law: • Salmon and Freshwater Fisheries Act 1975 • The Eels (England and Wales) Regulations 2009	Data returned from HBIC included 0 records for fish species within the search area. The River Itchen is designated for Atlantic salmon and brook lamprey therefore these records are inferred. The River runs within the site boundary.	As the site is chosen for enhancement there are no impacts to be expected.	Pollution, prevention measures should be implemented to avoid pollution incidents.
White-clawed crayfish (<i>Austropotamobius pallipes</i>) Protected by law: • Wildlife & Countryside Act 1981 (as amended) Listed under: • NERC Act 2006	No records for white-clawed crayfish within the search area were supplied by HBIC. However, white-clawed crayfish are a qualifying feature of the River Itchen SAC.	As the site is chosen for enhancement there are no impacts to be expected.	Pollution, prevention measures should be implemented to avoid pollution incidents.

4 SUMMARY OF FINDINGS AND RECOMMENDATIONS

The site and its habitats are of ecological value offer opportunity for enhancement as part of the wider Navigator Quarter scheme. The neutral grassland identified on site is of poor condition in an ecological sense and by removing the agricultural inputs and managing the grassland area the condition is likely to improve.

The wider Navigator Quarter scheme proposals have the potential to impact on Internationally statutory designated sites (SAC), national statutory designated sites (SSSI), local sites (SINCs) and notable and protected species including bats, dormouse, GCN, water vole, otter, breeding and wintering birds, badger, reptiles, fish and white-clawed crayfish. However, as the enhancement site is not to be developed on and instead enhanced there are no potential impacts associated with the site. If reptile translocation is to be considered from the Navigator Quarter sites to the enhancement site, a reptile survey programme will be required to establish the existing reptile population and suitability of the Enhancement site.

The recommendations set out below are based on the findings of this PEA. Further information on additional survey requirements or potential mitigation for protected species is provided in **Table 3.1**.

All recommendations should be implemented with full consideration of wildlife legislation and planning policy described in **Appendix 1**.

4.1 RECOMMENDATIONS

The following recommendations have been identified relating to the Enhancement site.

- Reptile survey programme to establish existing populations.
- Manage neutral grassland by removing agricultural inputs.
- Manage the cutting of neutral grassland by cutting once per year in the late summer.
- Manage reedbed areas by increasing the water availability to allow open water cover or consistent soil saturation.

4.2 MITIGATION REQUIREMENTS AND ENHANCEMENT

- Specific species and habitat mitigation will be summarised within their respective reports alongside the Ecological Impact Assessment submitted alongside this report.

Appendices

Appendix 1	Legislation and Planning Policy
Appendix 2	HRA Summary and Assessment

Appendix 1 – Legislation and Planning Policy

The Wildlife & Countryside Act 1981 (as amended)

Provides for **designation** and protection of Sites of Special Scientific Interest (SSSI), which are areas that represent the most valuable habitats in the UK for nature conservation.

The Act creates the following **offences**:

- To intentionally kill, injure, or take any wild bird or their eggs or nests (with exception to species listed in Schedule 2). Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young.
 - To intentionally or recklessly kill, injure, or take, possess, or trade in any wild animal listed in Schedule 5, and intentionally or recklessly interfere with places used for shelter or protection, or disturb animals occupying such places.
 - Certain methods of killing, injuring, or taking wild animals listed in Schedule 6.
 - To pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants.
 - The release of certain non-native animals and planting of plants listed in Schedule 9.
- It also provides a mechanism making any of the above offences legal through the granting of licences by the appropriate authorities.

Conservation of Habitats and Species Regulations 2017

The principal means by which the European Habitats Directive is transposed in England and Wales.

Provide for the **designation** and protection of a network of 'European Sites' (also termed Natura 2000), including Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

Regulation 43 creates the following offences relating to European Protected Species (EPS):

- deliberately capture, injure or kill any wild animal of a European Protected Species;
- deliberately disturb animals of any such species in such a way as to be likely to:
 - impair their ability to survive, breed, rear or nurture their young, hibernate or migrate, or
 - significantly affect the local distribution or abundance of the species to which they belong;
- deliberately take or destroy the eggs of such an animal; or
- damage or destroy a breeding site or resting place of such an animal.

The Regulations also make it an offence (subject to exceptions) to deliberately pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5.

However, the actions listed above can be made lawful through the granting of licences (European Protected Species Licence) by the appropriate authorities (Natural England in England). Licences may be granted for a number of purposes, but only after the appropriate authority has determined that the following regulations are satisfied:

- the works under the licence are being carried out for the purposes of 'preserving public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment'.
- there is 'no satisfactory alternative'
- the action 'will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in their natural range'.

To apply for a licence, the following information is required:

- The species concerned.
- The relative size of the population at the site (note this may require a survey to be carried out at a

particular time of the year).

- The impact(s) (if any) that the development is likely to have upon the populations.
- What measures will be conducted to mitigate for the impact(s).

Natural Environment & Rural Communities (NERC) Act 2006

Section 40 of NERC carries an extension of the earlier CRoW Act biodiversity **duty to public bodies and statutory undertakers** to ensure due regard to the conservation of biodiversity. Section 41 requires the Secretary of State, as respects England, to publish a list of species and habitats which are of 'principal importance for the purpose of conserving biodiversity'. These lists generally reflect the species and habitats previously listed as priorities under the UK Biodiversity Action Plan.

The Protection of Badgers Act 1992

This makes it an offence to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so and to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it.

Under Section 10 (1)(d) of the Protection of Badgers Act 1992, a licence may be granted by Natural England to interfere with a badger sett for the purpose of development, as defined by Section 55(1) of the Town & Country Planning Act 1990.

The Wild Mammals (Protection) Act 1996

The Wild Mammals (Protection) Act 1996 makes it an offence for any person to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

The Animal Welfare Act 2006

This imposes a duty of care on anyone responsible for an animal to take reasonable steps to ensure that the animal's needs are met. This means that a person has to look after the animal's welfare and ensure that it does not suffer. The Act says that an animal's welfare needs include:

- a suitable environment;
- a suitable diet;
- the ability to exhibit normal behaviour patterns;
- any need it has to be housed with, or apart from, other animals; and
- protection from pain, suffering, injury and disease.

With regards to development, this may have implications when capture and translocations of animals are proposed.

National Planning Policy Framework

This framework replaces Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS 9) (ODPM 2005b) and sets out the view of central Government on how planners should balance nature conservation with development.

The NPPF states that development plan policies and planning decisions should be based upon up-to-date information about the environmental characteristics of their areas, including biodiversity. It also states that the aim of planning decisions should be to prevent harm to biodiversity conservation interests and to 'promote the preservation, restoration and re-creation of priority habitats, ecological networks and the recovery of priority species'.

Where determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principals; 'if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused'; and, 'planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran

trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss'.

This means that full ecological surveys should be carried out and suitable mitigation measures proposed prior to any planning application being submitted.

Biodiversity 2020: A strategy for England's wildlife and ecosystem services

This biodiversity strategy for England builds on the Natural Environment White Paper and the earlier UK Biodiversity Action Plan. It provides a comprehensive picture of how Government is implementing our international and EU commitments and sets out the strategic direction for biodiversity policy up to 2020. Its mission is to:

“halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people.”

In relation to planning and development its priority is to:

“take a strategic approach to planning for nature within and across local areas. This approach will guide development to the best locations, encourage greener design and enable development to enhance natural networks. We will retain the protection and improvement of the natural environment as core objectives of the planning system”

Appendix 2 – Summary of HRA Assessment Process

Summary

Under Regulation 63 of the Conservation of Habitats and Species Regulations 2017, (the 'Habitats Regulations'), any plan or project which is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is not directly connected with or necessary for the management of the site, must be subject to an Appropriate Assessment to determine the implications for the site in view of the site's conservation objectives.

The objective of an Appropriate Assessment is to determine if there will be a significant adverse effect on site integrity, and is dependent on-site specifics, including condition status and conservation objectives. As described by the HRA Handbook⁸ *"A significant effect is any effect that would undermine the conservation objectives for a European site. There must be a causal connection or link between the subject plan or project and the qualifying features of the site which could result in possible significant effects on the site."*

HRA refers to the assessment of the potential effects of a development project on one or more European sites, including SPAs and SACs. The Government also expects potential SPAs (pSPAs), candidate SACs (cSACs) to be considered in the same way.

- **Special Areas of Conservation (SACs)** are designated under the Habitats Directive (92/43/EEC) and target particular habitats (Annex 1) and/or species (Annex II) identified as being of European importance.
- **Special Protection Areas (SPAs)** are classified under the European Council Directive 'on the conservation of wild birds' (2009/147/EC) (the 'Wild Birds Directive') for the protection of wild birds and their habitats (including particularly rare and vulnerable species listed in Annex 1 of the Directive, and migratory species).

The UK Government has also advised that Ramsar sites should be considered and included within the assessment⁹:

- **Ramsar sites** support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention, 1971).

For ease of reference during HRA, these three designations are collectively referred to as 'European sites', despite Ramsar designations being at the wider international level, and are also known as 'Natura 2000' sites.

Stages of HRA

⁸ Tyllesley, D. and Chapman C. (2016) The Habitats Regulations Assessment Handbook. Published and regularly updated by DTA Publications Ltd

⁹ Department for Communities and Local Government (2012) National Planning Policy Framework.

Stage 1 in HRA is a **Screening** stage to determine whether any part of the Proposed Scheme is likely to have a significant effect on any European site (in the absence of mitigation), and thus if a full Appropriate Assessment of the project is required.

Stage 2 is the **Appropriate Assessment** stage (if required) which has to conclude whether or not the project (with mitigation) will adversely affect the integrity of the European site in question. This is judged in terms of the likely impact of the project on a site's conservation objectives. The conservation objectives specify the overall target for a site's 'qualifying features' (i.e. those Annex I habitats, Annex II species, and Annex I bird populations for which it has been designated) in order for it to contribute to maintaining or reaching favourable conservation status. Significantly, HRA is based on a rigorous application of the precautionary principle.

If significant adverse effects are identified at the Appropriate Assessment stage, **alternative options** would be examined to avoid any potential significant effects on the integrity of the European site as

Stage 3 of the HRA.

Stage 4 comprises an assessment of **compensatory measures** where, in the light of an assessment of **Imperative Reasons of Overriding Public Interest (IROPI)**, it is deemed that the plan or project should proceed.

Responsibility for Undertaking HRA

The responsibility for undertaking HRA lies with the competent authority, i.e. the authority (or authorities) responsible for granting a licence or consent for the scheme. Under the Habitats Regulations, the applicant has an obligation to provide the competent authorities with such information as the authority may reasonably require for the purposes of the assessment, or to enable them to determine whether an Appropriate Assessment is required.



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Technical Appendix 10.12: Local Sites Air Quality Assessment

Prepared on behalf of

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Final Report

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Southampton Airport, Navigator Quater

Technical Appendix 10.12: Local Sites Air Quality Assessment

Report Release Sheet

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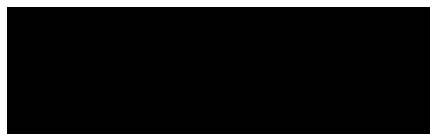
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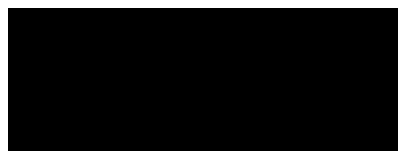
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Technical Appendix 10.12: Local Sites Air Quality Assessment

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Southampton Airport, Navigator Quater

Technical Appendix 10.12: Local Sites Air Quality Assessment

1. INTRODUCTION

Scope

- 1.1 This Technical Appendix supports Chapter 10 (Ecology) of the Environmental Statement (ES). It sets out the detailed methodology for, and results of, the air quality assessment in relation to National and Local nature conservation sites. These sites, referred to collectively as 'Local Sites' for ease and to differentiate them from 'International Sites' governed by assessment under The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations Assessment (HRA) process), include:

- Sites of Special Scientific Interest (SSSI) designated by the Wildlife and Countryside Act 1981 (as amended);
- Non-statutory Sites of Importance for Nature Conservation (SINC); and
- Ancient Woodland (Woodlands listed on Natural England's Provisional Ancient Woodland Inventory (PAWI)).

- 1.2 Potential air quality effects on the River Itchen Special Area of Conservation (SAC) have been considered separately within the 'Information for Habitats Regulations Assessment' report.

Proposed Development

- 1.3 The Proposed Development comprises the construction of a commercial and/or logistics-led employment scheme within the Navigator Quarter of Southampton International Airport. It includes new buildings, associated hardstanding and access infrastructure, and landscaping enhancements. The scheme is designed to improve regional connectivity and support economic growth, with layout and drainage measures incorporated to minimise environmental impacts.

- 1.4 Key components of the development include:

- Commercial/industrial floorspace and associated employment uses;
- Internal access roads and parking;
- Sustainable Drainage Systems (SuDS) for surface water management;
- Buffer zones and green infrastructure enhancements, particularly adjacent to the River Itchen;
- Lighting, servicing and security infrastructure; and
- Landscape planting and habitat enhancement where feasible.

2. ASSESSMENT METHODOLOGY & SITE SCOPING

Introduction

- 2.1 This air quality assessment (AQA) considers the potential effects of increased air pollution generated by the Proposed Development during construction (including dust liberation during construction works) and from development-related traffic (exhaust emissions) associated with operation, on Local Sites in proximity of the affected road network (ARN – described further below).
- 2.2 This assessment has considered the reasons for site designation or selection, the sensitivity of the habitats and/or features concerned to air pollution, and data on the current and potential future pollutant levels that could arise as a result of the Proposed Development both alone and acting cumulatively with other committed development.
- 2.3 As set out above, potential impacts on designated sites of International conservation importance are covered separately in the 'Information for Habitats Regulations Assessment' report.
- 2.4 This assessment is informed by detailed air quality modelling work carried out by Kairus Ltd. and presented in Chapter 7 of the ES.

Relevant Background Information

National Air Quality Strategy & Trends

- 2.5 Under the requirements of the Environment Act 1995, the UK government published an Air Quality Strategy (AQS). The AQS sets out the UK's national standards and objectives for ambient air quality, and measures to help achieve the objectives. The overall aim of the AQS is to achieve steady improvement in air quality into the long term. The objectives are transcribed into regulations in the Air Quality (England) Regulations 2000, as amended.
- 2.6 In 2019, the Government published their Clean Air Strategy. The Strategy sets out the measures that the Government intends to take to achieve the legally binding international targets to reduce emissions of key pollutants. Whilst there are no local or regional standards for pollutant emissions (as opposed to the thresholds for the concentration of pollutants in air), some of the sectors targeted in the Clean Air Strategy are relevant to the Proposed WNS i.e. Transportation and Homes.
- 2.7 The deposition of both oxidised nitrogen (NO_x, primarily NO₂) and reduced nitrogen (primarily from ammonia – NH₃ and ammonium ions – NH₄⁺) contribute to total nitrogen deposition (N deposition), via dry and wet deposition. National emissions of NO_x have decreased substantially over recent decades and are expected to decline further in the future. Emissions of NH₃, which are dominated by the agricultural sector, have however, only marginally decreased in recent years and even increased in some areas of the UK.
- 2.8 Under the National Emissions Ceilings Regulations, the UK is legally required to implement measures to reduce emissions of key pollutants, including NH₃ and NO_x, by 8% and 55% respectively by 2029 over 2005 base emissions, and by 16% and 73% respectively post 2030. The UK's National Air Pollution Control Programme (NAPCP), including the Clean Air Strategy

in England, is expected to exceed these emission reduction targets such that a 17% decrease in total N deposition onto protected priority sensitive habitats is expected, with a predicted 18.9% decrease from the 2016 base year.

- 2.9 Whilst the decrease will not be uniform over all sites, it is reasonable to conclude that background NH₃ concentrations and N deposition rates will decrease in the future.

Critical Levels and Loads

European CAFE Directive (2008/50/EC) and Air Quality Standards Regulations 2010

- 2.10 The Directive details air quality limit values, target values, and Critical Levels for a number of air pollutants established by the European Parliament and Council for the protection of human health, vegetation and ecosystems. These have been transposed into UK legislation by the 2010 Regulations.

United Nations Economic Commission for Europe Critical Loads

- 2.11 The United Nations Economic Commission for Europe (UNECE) has set Critical Loads for N-Deposition for specific sensitive ecosystems. These were most recently revised in 2022 (Bobbink et al. 2022).

The Air Pollution Information System (APIS)

- 2.12 The Air Pollution Information System (APIS) is the UK's principal source of information on pollutant levels, including at designated nature conservation sites (SAC/SPA/SSSI), and on the sensitivity of their component habitats as well as habitats and species in general providing a continually updated web-based data resource.
- 2.13 APIS sets out the relevant environmental standards for pollutant types (as defined by the 2010 Regulations and UNECE), which vary by habitat type where N deposition is concerned. 'Critical Levels' define the environmental standard for airborne gaseous pollutants (NO_x and NH₃) and 'Critical Loads' define the environmental standard for deposited pollutants (N deposition).
- 2.14 Critical Levels and Loads (referred to collectively as the 'CL') are defined as:

Critical Level (ug/m³): "concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge".

Critical Load (kg N/ha/yr): "a quantitative estimate of exposure to one or more pollutants, below which significant harmful effects on sensitive elements of the environment do not occur, according to present knowledge."

- 2.15 For NO_x, a standard Critical Level of 30µg/m³ applies to all habitat types. For NH₃, a Critical Level of 1µg/m³ applies to lower plants (lichens and bryophytes), and a Critical Level of 3µg/m³ applies to all other types of vegetation. For N deposition, the Critical Load is habitat specific, with lower and upper CLs cited for application in different circumstances (for example differing

hydrological or management regimes); in practice there is rarely sufficient information to justify use of anything but the lower CL, and lower CLs are used throughout this assessment.

- 2.16 When pollutant loads (or concentrations) exceed the CL, it is considered that there is a risk of harmful effects. A value in excess of the CL is termed the 'exceedance'. A larger exceedance is often considered to represent a greater risk of damage, although other factors also influence this.

IAQM Guidance

- 2.17 Guidance from the Institute of Air Quality Management (IAQM) on the assessment of air quality impacts on designated nature conservation sites (June 2019) sets out the following broad stepwise approach for designated sites - not subject to HRA - which occur within around 200m of affected roads:

- Calculate / estimate Process Contribution* (PC) and compare with screening thresholds (>1% of the specified CL, or a change of more than 1,000 Average Annual Daily Trips (AADT) (or 200 heavy duty vehicles (HDVs));
- Identify if insignificant OR if further assessment required (e.g. detailed modelling);
- Where detailed assessment is required, calculate PC and Predicted Environmental Concentration[^] (PEC) and compare against CLs at relevant receptors;
- Identify and assess impacts and effects (project alone and cumulative);
- Where significant effects are identified, apply measures to address air quality impacts and associated ecological effects following a mitigation hierarchy, and the use of monitoring.

* Process Contribution is defined as *"the incremental impact of the proposed development on the concentration or deposition flux"*, i.e. pollution added by the Proposed Development, which can be indicated by the amount of traffic added to a road, set out as 'Average Annual Daily Trips' or AADT, or calculated directly and given as a concentration or deposition rate (depending on the pollutant type).

[^] Predicted Environmental Concentration is defined as *"the concentration or deposition (i.e. process contribution (PC) plus baseline)"*, i.e. the total concentration or deposition rate of pollutants in the environment.

Background Information on Local Sites

- 2.18 A records search was commissioned from Hampshire Biodiversity Information Centre (HBIC) in 2025 in order to obtain information on Local Site designations within the Zone of Influence (ZoI) of the Proposed Development (described further in the relevant sections below).
- 2.19 Information on National Site designations was obtained from Natural England's online Magic map <https://magic.defra.gov.uk> with GIS boundary data obtained from Natural England's Open Data Geoportal.

EclA Methodology

- 2.20 The methodology for Local Site evaluation and impact assessment followed that outlined in the main Ecology ES Chapter. Designated sites requiring detailed air quality assessment, located within the ZOI of the Proposed Development, were evaluated according to a geographical frame of reference, at either a Local, District/Borough, County, Regional or National level of importance. The significance of potential air quality effects was then considered, taking into account guidance from CIEEM and the IAQM, with conclusions ultimately reached based on an element of professional judgement.

Construction Phase Methodology

- 2.21 There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within IAQM 'Guidance on the Assessment of Dust from Demolition and Construction'.
- 2.22 The potential for harm to ecological receptors to arise from dust liberation during demolition, earthworks, construction and trackout was considered. The first stage of the assessment considered the potential for ecological receptors to be present within 50m of the site and/or the construction vehicle route up to 250m from the site entrance. Where ecological receptors were present, the second stage of the assessment considered the risk of dust impacts, with a risk category assigned on the basis of the combination of two factors: the sensitivity of the area to dust impacts (low, medium or high sensitivity); and the scale and nature of the works resulting in the magnitude of fugitive dust emissions (low, medium or high magnitude). These factors are considered in the absence of mitigation. Further details are provided in ES Chapter 7.
- 2.23 Sites scoped into the construction phase dust assessment are shown on **Map 1** and include:
- River Itchen SSSI;
 - Itchen Valley Nature Reserve SINC;
 - Alington Manor Farm Water Meadows SINC;
 - Meadow North of Railway Line SINC; and
 - Stanford Meadow SINC.
- 2.24 Information about the interest features of the SSSI and SINC is provided in **Table 2.1** below.

Table 2.1: Summary of sites taken forward for Construction Phase assessment and evaluation as important ecological features (IEFs)

Site Name	Main Habitat	Importance
River Itchen SSSI	Broadleaved, mixed and yew woodland; fen, marsh and swamp; neutral grassland; rivers and streams	National
Itchen Valley Nature Reserve SINC	Wet woodland; unimproved/semi-improved grassland; open freshwater; floodplain flora and fauna	County

Site Name	Main Habitat	Importance
Alington Manor Farm Water Meadows SINC	Semi-improved grassland; floodplain flora and fauna	County
Meadow North of Railway Line SINC	Floodplain flora and fauna	County
Stanford Meadow SINC	Semi-improved grassland; floodplain flora and fauna	County

- 2.25 The volume of construction traffic is currently unknown, therefore separate assessment of the potential for air quality impacts from construction phase traffic emissions has not been undertaken. However, it is reasonable to assume that traffic volumes will be significantly lower than operational traffic generation, and that any impacts associated with construction traffic generation will be temporary in nature and lower than predicted within the operational assessment.

Operation Phase Methodology

Overview

- 2.26 The methodology used to assess the potential for significant effects from air quality changes impacting upon on ecological sites during the operational phase is based on the IAQM guidance described above (IAQM, 2019).
- 2.27 Local Sites within 200m of an “affected road”, a road where a change (increase or decrease) of more than 1,000 AADT (or 200 HDV) is predicted (by relevant traffic models), can be affected by airborne NO_x and ammonia emissions arising from traffic, and subsequent deposition of nitrogen from air to the ground (N deposition). N deposition can both acidify and enrich a site with nutrients, but it is difficult to separate effects due to eutrophication and acidification. In this study the areas of designated sites identified as experiencing potentially significant impacts from N deposition is used to define the area that could be impacted by N deposition, be that via acidification or eutrophication, or a combination of either.
- 2.28 The aforementioned change in traffic flow is the means of defining the ZOI for detailed air quality assessment, which in geographical terms is defined by the number and distribution of trips on a road network and cannot be defined by a standardised linear distance catchment from a proposed development site. 200m is set as the ZOI for air pollution impacts on designated sites, because traffic-generated pollutant levels drop off significantly within the first 50m from the roadside and concentrations approach background levels by 200m (Laxen & Marner, 2008; Ricardo-AEA, 2016).
- 2.29 The core scenarios for the air quality assessment are:
- 2023 – base scenario for model verification;
 - 2028 – future base scenario (using 2025 base traffic with 2028 emission factors);
 - 2028 – Do-minimum (DM) scenario (including base traffic flows and Committed Development trips); and

- 2028 – Do-something (DS) (including trips associated with the Proposed Development).
- 2.30 The ADMS Roads dispersion model was used to predict annual mean traffic emissions of NO_x and NH₃ at the identified ecology receptors (Process Contribution (PC)). Background concentrations of each pollutant were added to the model outputs to provide total concentrations of each pollutant (Predicted Environmental Concentration (PEC)). The predicted NO_x and NH₃ concentrations were converted to N-Deposition using relevant conversion factors.

Site Scoping - Defining the Potential Zone of Influence

- 2.31 For the purposes of defining the ZoI for Local Site AQA, the 'affected roads' predicted to experience an increase or decrease of more than 1,000 AADT (or 200 HGV) as a result of the Proposed Development were identified. Local Sites within 200m of the affected road network (or 'ARN') were then identified in GIS and are shown on **Map 2**.
- 2.32 The sensitivity of each site within this 200m buffer zone to traffic-generated air pollution was then considered, and a conclusion reached as to whether sites could be scoped out or whether detailed air quality assessment was required. Where a requirement for detailed air quality assessment was identified, site-specific information regarding the broad habitats present and the relevant CLs for assessment of air pollution effects was collated. The results of this scoping exercise are set out in **Table 2.2** below. **Table 2.3** then sets out a summary of the sites taken forward for detailed (operational phase) air quality assessment, and provides an evaluation of each site's geographical level of importance (*sensu* CIEEM).

Detailed Air Quality Modelling

- 2.33 The air quality consultant (Kairus Ltd) modelled traffic-generated air pollutant concentrations (NO_x and NH₃) and deposition rates (N deposition) at specific receptors located on affected roads. Pollutant concentrations and deposition rates were modelled at 10m intervals along 200m long transects starting at the roadside within each designated site.
- 2.34 Total pollutant concentrations and deposition rates (the PEC) at increasing distances from the ARN were calculated, based on the modelling scenarios outlined above. The change in comparison to the future base scenario, or 'impact', generated by the Proposed Development and the Proposed Development acting cumulatively with other committed development (the PC) was then calculated and expressed as a percentage of the relevant CL.

Table 2.2: Local site scoping for Operational Phase AQA

ID	Site Name	Main Habitats	APIS N CL Class	CL - NO _x	CL – NH ₃	LCL – N deposition
E1/2	Northend Copse AW*/SINC	Ancient woodland Wet woodland	Broadleaved deciduous woodland	30	3	10
E3	Park Wood AW	Ancient woodland	Broadleaved deciduous woodland	30	3	10
E4	Matthews Moor AW	Ancient woodland	Broadleaved deciduous woodland	30	3	10
E5	Hazel Copse AW	Ancient woodland	Broadleaved deciduous woodland	30	3	10
E6/7	Hardmoor Copse AW/SINC	Ancient woodland Wet woodland Pasture woodland	Broadleaved deciduous woodland	30	3	10
E8-11	River Itchen SSSI	Broadleaved, mixed and yew woodland Fen, marsh and swamp Neutral grassland Rivers and streams	Broadleaved deciduous woodland Low and medium altitude hay meadows Rich fens	30	3	10
E12/13	Dummers Copse AW/SINC	Ancient woodland Wet woodland	Broadleaved deciduous woodland	30	3	10
E14	Moorgreen Meadows SSSI	Broadleaved, mixed and yew woodland Acid grassland	Broadleaved deciduous woodland Moist or wet mesotrophic to eutrophic hay meadow Rich fens	30	3	10
E15-19	Monks Book Greenway SINC	Wet woodland	Broadleaved deciduous woodland	30	3	10
E20	Hardmoor Plantation AW	Ancient woodland	Broadleaved deciduous woodland	30	3	10

* AW – Woodland listed on Natural England's Provisional Ancient Woodland Inventory.

Table 2.3: Summary of sites taken forward for Operational Phase AQA and evaluation as important ecological features (IEFs)

ID	Site Name	Importance
E1/2	Northend Copse AW*/SINC	County
E3	Park Wood AW	County
E4	Matthews Moor AW	County
E5	Hazel Copse AW	County
E6/7	Hardmoor Copse AW/SINC	County
E8-11	River Itchen SSSI	National
E12/13	Dummers Copse AW/SINC	County
E14	Moorgreen Meadows SSSI	National
E15-19	Monks Book Greenway SINC	County
E20	Hardmoor Plantation AW	County

3. IMPACT ASSESSMENT AND MITIGATION

Construction Phase

Results

- 3.1 The results of the dust impact risk assessment, in the absence of mitigation, are described in detail in ES Chapter 7 and summarised in **Table 4.1** below.
- 3.2 The dust risk assessment determined that dust liberation arising during all construction works stages of the Proposed Development could impact upon nearby ecology receptors located within the ZoI (as shown on **Map 1** and listed above). Effects would be temporary and reversible. Nevertheless, in the absence of mitigation measures this could result in significant negative effects. Construction phase mitigation is therefore proposed.

Table 4.1: Results of Construction Phase dust impact risk assessment, summarised from ES Chapter 7

Stage	Works	Dust Emission Magnitude	Receptor Sensitivity	Risk of Impacts from Dust Soiling
Demolition	No demolition activities required	n/a	n/a	n/a
Earthworks	Excavating material, haulage, tipping and stockpiling, site levelling and landscaping	Large	High	High
Construction	Total building volume will be greater than 75,000m ³	Large	High	High
Track-Out	20-50 HGV movements per day, there is also the potential for an unpaved road length of greater than 100m during certain stages of construction	Medium	Low	Low

Impact Avoidance and Mitigation

- 3.3 In the absence of impact avoidance and mitigation, the construction phase assessment has concluded that the potential for significant negative effects from dust liberation cannot be ruled out. Table 7.25 of ES Chapter 7 sets out the mitigation measures that will be included within a Construction Environmental Management Plan (CEMP) to control fugitive dust emissions during construction. These are based on the advice provided within the IAQM guidance and are considered suitable for the site. The scope of measures cover: site management, preparing and maintaining the site, operating vehicle/machinery and sustainable travel, operations, waste management, earthworks, construction and trackout.

Conclusion of Construction Phase Impact Assessment

- 3.4 With the deployment of the impact avoidance and mitigation measures set out above, no significant residual effects on IEFs within the ZoI from dust liberation during the construction phase are anticipated to remain.

Operational Phase

Results of NOx Modelling

- 3.5 The air quality modelling results for NOx are summarised at **Table 4.2** below. NOx concentrations are provided as maximum values, with the highest concentrations predicted at the roadside. Due to the large number of sites scoped in for detailed assessment, the assessment of potentially significant effects for each site is set out in **Table 4.3** below for clarity.
- 3.6 The potential for significant effects from NOx emissions on Local Sites can be ruled out for the following reasons:
- The PC from the Proposed Development alone falls below or only just exceeds the screening threshold at all modelled locations, meaning the contribution to future NOx levels is imperceptibly small and can be rightly considered insignificant;
 - Contributions from cumulative development (the Proposed Development and Committed Development) exceed the screening threshold at a number of sites, however, in all such locations the CL is already exceeded in all future modelling scenarios with or without development. Future development would therefore make no discernible difference to the extent of future CL exceedance;
 - The background trend is towards air quality improvement, described above under 'National Air Quality Strategy and Trends', therefore, the effect of cumulative development would be to slow the rate of NOx improvement arising from the autonomous measures described by a very small margin and at increasingly imperceptible levels with increasing distance from the roadside, with only peripheral site areas affected; and
 - The World Health Organisation's 'Air Quality Guidelines' (2000; Second Edition. Chapter 11, Figure 2) indicates that exposure to annual average concentrations below 100µg/m³ is unlikely to cause direct biochemical or physiological effects based on available studies. Since future NOx concentrations are predicted to be far lower than 100µg/m³ at all modelled locations, significant negative phytotoxic effects from airborne NOx are not anticipated. However, NOx can still have an indirect effect on sensitive habitats and designated sites via its contribution to N deposition (in the form of NO₂), and this is considered separately below.

Table 4.2: Summary of maximum modelled annual mean NO_x concentrations with and without the Proposed Development and predicted impacts alone and cumulative *Exceedances of the CL (30ug/m³) are highlighted in orange / PC exceedance of the screening threshold (1% of the CL) are highlighted in yellow.*

ID	Site Name	PEC – Total NO _x at roadside, ug/m ³			Impact Alone			Cumulative Impact		
		2028 Base	2028 Base + Committed Development	2028 Base + Committed + Proposed Development	Max PCa	Max PC as % of CL	Distance to 1%CL or PEC<CL	Max PCc	Max PC as % of CL	Distance to 1%CL or PEC<CL
E1	Northend Copse AW/SINC	45.9	46.4	46.5	0.10	0.3	-	0.60	2.0	32m
E2	Northend Copse AW/SINC	50.1	50.7	50.8	0.12	0.4	-	0.68	2.3	32m
E3	Park wood AW	33.1	33.5	33.5	0.07	0.2	-	0.39	1.3	50m
E4	Matthews Moor AW	27.8	28.0	28.1	0.05	0.2	-	0.31	1.0	-
E5	Hazel Copse AW	43.8	44.4	44.5	0.11	0.4	-	0.65	2.2	40m
E6	Hardmoor Copse AW/SINC	45.4	45.9	46.1	0.22	0.7	-	0.71	2.4	40m
E7	Hardmoor Copse AW/SINC	34.2	34.5	34.6	0.14	0.5	-	0.45	1.5	20m
E8	River Itchen SSSI	29.0	29.3	29.4	0.13	0.4	-	0.37	1.2	-
E9	River Itchen SSSI	57.5	58.2	58.6	0.36	1.2	10m	1.07	3.6	50m
E10	River Itchen SSSI	24.3	24.5	24.6	0.08	0.3	-	0.24	0.8	-

		PEC – Total NOx at roadside, ug/m ³			Impact Alone			Cumulative Impact		
ID	Site Name	2028 Base	2028 Base + Committed Development	2028 Base + Committed + Proposed Development	Max PCa	Max PC as % of CL	Distance to 1%CL or PEC<CL	Max PCc	Max PC as % of CL	Distance to 1%CL or PEC<CL
E11	River Itchen SSSI	19.5	19.6	19.6	0.05	0.2	-	0.13	0.4	-
E12	Dummers Copse AW/SINC	38.3	38.7	38.9	0.20	0.7	-	0.59	2.0	40m
E13	Dummers Copse AW/SINC	26.5	26.7	26.8	0.10	0.3	-	0.30	1.0	-
E14	Moorgreen Meadows SSSI	45.9	46.4	46.6	0.26	0.9	-	0.77	2.6	40m
E15	Monks Book Greenway SINC	31.3	31.6	31.7	0.13	0.4	-	0.37	1.2	10m
E16	Monks Book Greenway SINC	22.8	22.9	22.9	0.05	0.2	-	0.11	0.4	-
E17	Monks Book Greenway SINC	22.8	22.8	22.9	0.07	0.2	-	0.13	0.4	-
E18	Monks Book Greenway SINC	27.8	28.0	28.2	0.22	0.7	-	0.45	1.5	-
E19	Monks Book Greenway SINC	24.8	25.0	25.1	0.14	0.5	-	0.28	0.9	-
E20	Hardmoor Plantation AW	18.6	18.6	18.7	0.01	0.0	-	0.07	0.2	-

Table 4.3: Assessment of potentially significant operational phase effects from NOx

ID	Site Name	Importance	Results Interpretation	Conclusion
E1/2	Northend Copse AW*/SINC	County	The cumulative impact exceeds the screening threshold, though falls below 1% of the CL within 32m of the roadside. The impact of the Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent of future CL exceedance. Although the CL is exceeded in all modelled scenarios, the total concentration is not high enough to cause significant phytotoxic effects and the overall trend is towards future NOx reduction, therefore significant impacts from airborne NOx will not arise. NOx will contribute to N deposition, which is modelled separately.	No significant effect
E3	Park Wood AW	County	The cumulative impact exceeds the screening threshold, though falls below 1% of the CL within 50m of the roadside. The impact of the Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent of future CL exceedance. Although the CL is exceeded in all modelled scenarios, the total concentration is not high enough to cause significant phytotoxic effects and the overall trend is towards future NOx reduction, therefore significant impacts from airborne NOx will not arise. NOx will contribute to N deposition, which is modelled separately.	No significant effect
E4	Matthews Moor AW	County	No future exceedance of the CL and all impacts are at or below 1% of the CL.	No significant effect
E5	Hazel Copse AW	County	The cumulative impact exceeds the screening threshold, though falls below 1% of the CL within 40m of the roadside. The impact of the Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent of future CL exceedance. Although the CL is exceeded in all modelled scenarios, the total concentration is not high enough to cause significant phytotoxic effects and the overall trend is towards future NOx reduction, therefore significant impacts from airborne NOx will not arise. NOx will contribute to N deposition, which is modelled separately.	No significant effect
E6/7	Hardmoor Copse AW/SINC	County	The cumulative impact exceeds the screening threshold, though falls below 1% of the CL within 40m of the roadside (within 20m at transect E7). The impact of the Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent of future CL exceedance. Although the CL is exceeded in all modelled scenarios, the total concentration is not high enough to cause significant phytotoxic effects and the overall trend is towards future NOx reduction, therefore significant impacts from airborne NOx will not arise. NOx will contribute to N deposition, which is modelled separately.	No significant effect

ID	Site Name	Importance	Results Interpretation	Conclusion
E8-11	River Itchen SSSI	National	The cumulative impact exceeds the screening threshold only at transect E9, though falls below 1% of the CL within 50m of the roadside. The impact of the Proposed Development alone only just exceeds 1% at E9 but makes no discernible difference to the extent of future CL exceedance. Although the CL is exceeded in all modelled scenarios, the total concentration is not high enough to cause significant phytotoxic effects and the overall trend is towards future NOx reduction, therefore significant impacts from airborne NOx will not arise. NOx will contribute to N deposition, which is modelled separately.	No significant effect
E12/13	Dummers Copse AW/SINC	County	The cumulative impact exceeds the screening threshold only at transect E12, though falls below 1% of the CL within 40m of the roadside. The impact of the Proposed Development alone does not exceed 1% at either receptor and so makes no discernible difference to the extent of future CL exceedance. The CL is only exceeded in the future year's scenarios at E12, however, the total concentration is not high enough to cause significant phytotoxic effects and the overall trend is towards future NOx reduction, therefore significant impacts from airborne NOx will not arise. NOx will contribute to N deposition, which is modelled separately.	No significant effect
E14	Moorgreen Meadows SSSI	National	The cumulative impact exceeds the screening threshold, though falls below 1% of the CL within 40m of the roadside. The impact of the Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent of future CL exceedance. Although the CL is exceeded in all modelled scenarios, the total concentration is not high enough to cause significant phytotoxic effects and the overall trend is towards future NOx reduction, therefore significant impacts from airborne NOx will not arise. NOx will contribute to N deposition, which is modelled separately.	No significant effect
E15-19	Monks Book Greenway SINC	County	The cumulative impact exceeds the screening threshold only at transect E15, though falls below 1% of the CL within 10m of the roadside. The impact of the Proposed Development alone does not exceed 1% at any receptor and so makes no discernible difference to the extent of future CL exceedance. The CL is only exceeded in the future year's scenarios at E15, however, the total concentration is not high enough to cause significant phytotoxic effects and the overall trend is towards future NOx reduction, therefore significant impacts from airborne NOx will not arise. NOx will contribute to N deposition, which is modelled separately.	No significant effect
E20	Hardmoor Plantation AW	County	No future exceedance of the CL and all impacts are at or below 1% of the CL.	No significant effect

Southampton Airport, Navigator Quater

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Results of NH₃ Modelling

- 3.7 The air quality modelling results for NH₃ are summarised at **Table 4.4** below. NH₃ concentrations are provided as maximum values, with the highest concentrations predicted at the roadside. Due to the large number of sites scoped in for detailed assessment, the assessment of potentially significant effects for each site is set out in **Table 4.5** below for clarity.
- 3.8 The potential for significant effects from NH₃ emissions on Local Sites can be ruled out for the following reasons:
- The PC from the Proposed Development alone falls below the screening threshold at all modelled locations, meaning that potential effects can be ruled out as insignificant with no further detailed consideration;
 - Contributions from cumulative development (the Proposed Development and Committed Development) exceed the screening threshold at a number of sites, however, in all such locations the CL is already exceeded in all future modelling scenarios with or without development. Future development would therefore make no discernible difference to the extent of future CL exceedance; and
 - The background trend is towards air quality improvement, described above under 'National Air Quality Strategy and Trends', therefore, the effect of cumulative development would be to slow the rate of NH₃ improvement arising from the autonomous measures described by a very small margin and at increasingly imperceptible levels with increasing distance from the roadside, with only peripheral site areas affected.

Table 4.4: Summary of maximum modelled NH₃ concentrations and predicted impacts alone and cumulative Exceedances of the CL (3 ug/m³) are highlighted in orange / PC exceedance of the screening threshold (1% of the CL) are highlighted in yellow.

ID	Site Name	PEC – Total NH ₃ at roadside, ug/m ³			Impact Alone			Cumulative Impact		
		2028 Base	2028 Base + Committed Development	2028 Base + Committed + Proposed Development	Max PCa	Max PC as % of CL	Distance to 1%CL or PEC<CL	Max PCc	Max PC as % of CL	Distance to 1%CL or PEC<CL
E1	Northend Copse AW/SINC	3.3	3.3	3.4	0.0075	0.3	-	0.0442	1.5	12m
E2	Northend Copse AW/SINC	3.6	3.6	3.6	0.0085	0.3	-	0.0500	1.7	12m
E3	Park wood AW	2.5	2.5	2.5	0.0049	0.2	-	0.0287	1.0	-
E4	Matthews Moor AW	2.2	2.2	2.2	0.0036	0.1	-	0.0215	0.7	-
E5	Hazel Copse AW	3.5	3.5	3.5	0.0079	0.3	-	0.0475	1.6	20m
E6	Hardmoor Copse AW/SINC	3.2	3.2	3.2	0.0156	0.5	-	0.0498	1.7	20m
E7	Hardmoor Copse AW/SINC	2.4	2.4	2.4	0.0096	0.3	-	0.0305	1.0	-
E8	River Itchen SSSI	2.1	2.1	2.1	0.0091	0.3	-	0.0257	0.9	-
E9	River Itchen SSSI	4.1	4.1	4.1	0.0255	0.9	-	0.0751	2.5	20m
E10	River Itchen SSSI	1.7	1.7	1.7	0.0059	0.2	-	0.0168	0.6	-

		PEC – Total NH ₃ at roadside, ug/m ³			Impact Alone			Cumulative Impact		
ID	Site Name	2028 Base	2028 Base + Committed Development	2028 Base + Committed + Proposed Development	Max PCa	Max PC as % of CL	Distance to 1%CL or PEC<CL	Max PCc	Max PC as % of CL	Distance to 1%CL or PEC<CL
E11	River Itchen SSSI	1.4	1.4	1.4	0.0032	0.1	-	0.0088	0.3	-
E12	Dummers Copse AW/SINC	2.7	2.8	2.8	0.0138	0.5	-	0.0412	1.4	-
E13	Dummers Copse AW/SINC	1.9	1.9	1.9	0.0070	0.2	-	0.0206	0.7	-
E14	Moorgreen Meadows SSSI	3.2	3.3	3.3	0.0180	0.6	-	0.0536	1.8	10m
E15	Monks Book Greenway SINC	2.0	2.0	2.0	0.0094	0.3	-	0.0269	0.9	-
E16	Monks Book Greenway SINC	1.3	1.3	1.3	0.0034	0.1	-	0.0081	0.3	-
E17	Monks Book Greenway SINC	1.3	1.3	1.3	0.0045	0.2	-	0.0090	0.3	-
E18	Monks Book Greenway SINC	1.8	1.8	1.8	0.0194	0.6	-	0.0388	1.3	-
E19	Monks Book Greenway SINC	1.5	1.6	1.6	0.0116	0.4	-	0.0233	0.8	-
E20	Hardmoor Plantation AW	1.3	1.3	1.3	0.0006	0.0	-	0.0047	0.2	-

Table 4.5: Assessment of potentially significant operational phase effects from NH₃

ID	Site Name	Importance	Results Interpretation	Conclusion
E1/2	Northend Copse AW*/SINC	County	The cumulative impact exceeds the screening threshold, though falls below 1% of the CL within 12m of the roadside. The CL is exceeded in all modelled scenarios, though total future NH ₃ concentrations also fall below the CL within 12m of the roadside. The impact of the Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent of future CL exceedance.	No significant effect
E3	Park Wood AW	County	No future exceedance of the CL and all impacts are at or below 1% of the CL.	No significant effect
E4	Matthews Moor AW	County	No future exceedance of the CL and all impacts are at or below 1% of the CL.	No significant effect
E5	Hazel Copse AW	County	The cumulative impact exceeds the screening threshold, though falls below 1% of the CL within 20m of the roadside. The CL is exceeded in all modelled scenarios, though total future NH ₃ concentrations also fall below the CL within 20m of the roadside. The impact of the Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent of future CL exceedance.	No significant effect
E6/7	Hardmoor Copse AW/SINC	County	The cumulative impact exceeds the screening threshold at transect E6, though falls below 1% of the CL within 20m of the roadside. The CL is exceeded in all modelled scenarios for transect E6, though total future NH ₃ concentrations also fall below the CL within 20m of the roadside. The impact of the Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent of future CL exceedance.	No significant effect
E8-11	River Itchen SSSI	National	The cumulative impact exceeds the screening threshold at transect E9 only, though falls below 1% of the CL within 20m of the roadside. The CL is exceeded in all modelled scenarios for transect E9 only, though total future NH ₃ concentrations also fall below the CL within 20m of the roadside. The impact of the Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent of future CL exceedance.	No significant effect
E12/13	Dummers Copse AW/SINC	County	The cumulative impact exceeds the screening threshold at transect E12, but there is no exceedance of the CL under any modelled scenarios, and the impact of the Proposed Development alone does not exceed 1% of the CL.	No significant effect

ID	Site Name	Importance	Results Interpretation	Conclusion
E14	Moorgreen Meadows SSSI	National	The cumulative impact exceeds the screening threshold, though falls below 1% of the CL within 10m of the roadside. The CL is exceeded in all modelled scenarios, though total future NH ₃ concentrations also fall below the CL within 10m of the roadside. The impact of the Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent of future CL exceedance.	No significant effect
E15-19	Monks Book Greenway SINC	County	The cumulative impact exceeds the screening threshold at transect E18 only, but there is no exceedance of the CL under any modelled scenarios for any of the transects, and the impact of the Proposed Development alone does not exceed 1% of the CL.	No significant effect
E20	Hardmoor Plantation AW	County	No future exceedance of the CL and all impacts are at or below 1% of the CL.	No significant effect

Results of N Deposition Modelling

- 3.9 The air quality modelling results for N deposition are summarised at **Table 4.6** below. Deposition rates are provided as maximum values, with the highest rates predicted at the roadside. Due to the large number of sites scoped in for detailed assessment, the assessment of potentially significant effects for each site is set out in **Table 4.7** below for clarity.
- 3.10 The potential for significant effects from N deposition on Local Sites can be ruled out for the following reasons:
- For some modelled locations, the PC from the Proposed Development alone falls below the screening threshold, meaning that potential effects can be ruled out as insignificant with no further detailed consideration;
 - Elsewhere, contributions from the Proposed Development alone and/or cumulative development (the Proposed Development and Committed Development) exceed the screening threshold, however, in all such locations the CL is already exceeded in all future modelling scenarios with or without development across the entire site. Future development would therefore make no discernible difference to the extent or magnitude of future CL exceedance; and
 - The background trend is towards air quality improvement, described above under 'National Air Quality Strategy and Trends', therefore, the effect of cumulative development would be to slow the rate of N deposition improvement arising from the autonomous measures described by a very small margin and at increasingly imperceptible levels with increasing distance from the roadside, with only peripheral site areas affected. This means that development contributions would not result in habitat loss or net deterioration beyond the future baseline considered in the absence of development;
 - With respect to the latter, and with regards to National site designations, small contributions towards delayed N deposition recovery would be made across only 1% of Moorgreen Meadows SSSI and 0.03% of the River Itchen SSSI.

Conclusion of Operational Phase Impact Assessment

- 3.11 On the basis of the air quality modelling work carried out, no significant negative effects on the Local Sites assessed from NO_x, NH₃ and N deposition contributions generated during the operational phase of the Proposed Development are predicted.

Table 4.6: Summary of maximum modelled N deposition rates and predicted impacts alone and cumulative Exceedances of the CL (10 kg/N/ha/yr) are highlighted in orange / PC exceedance of the screening threshold (1% of the CL) are highlighted in yellow.

		PEC – Total N deposition at roadside, kg/N/ha/yr			Impact Alone			Cumulative Impact		
ID	Site Name	2028 Base	2028 Base + Committed Development	2028 Base + Committed + Proposed Development	Max PCa	Max PC as % of CL	Distance to 1%CL or PEC<CL	Max PCc	Max PC as % of CL	Distance to 1%CL or PEC<CL
E1	Northend Copse AW/SINC	51.03	51.46	51.54	0.09	0.9	-	0.52	5.2	112m
E2	Northend Copse AW/SINC	54.50	54.99	55.09	0.10	1.0	-	0.59	5.9	92m
E3	Park Wood AW	24.54	24.71	24.74	0.03	0.3	-	0.21	2.0	1.1% at 80m, transect end
E4	Matthews Moor AW	37.56	37.77	37.81	0.04	0.4	-	0.26	2.6	60m
E5	Hazel Copse AW	53.02	53.48	53.58	0.09	0.9	-	0.56	5.6	160m
E6	Hardmoor Copse AW/SINC	49.80	50.20	50.39	0.19	1.9	30m	0.59	5.9	170m
E7	Hardmoor Copse AW/SINC	40.16	40.42	40.53	0.12	1.2	10m	0.37	3.7	70m
E8	River Itchen SSSI	20.55	20.67	20.74	0.07	0.7	-	0.19	1.9	30m

		PEC – Total N deposition at roadside, kg/N/ha/yr			Impact Alone			Cumulative Impact		
ID	Site Name	2028 Base	2028 Base + Committed Development	2028 Base + Committed + Proposed Development	Max PCa	Max PC as % of CL	Distance to 1%CL or PEC<CL	Max PCc	Max PC as % of CL	Distance to 1%CL or PEC<CL
E9	River Itchen SSSI	35.04	35.40	35.59	0.18	1.8	20m	0.54	5.4	110m
E10	River Itchen SSSI	18.20	18.28	18.32	0.04	0.4	-	0.12	1.2	100m
E11	River Itchen SSSI	15.76	15.80	15.82	0.02	0.2	-	0.06	0.6	-
E12	Dummers Copse AW/SINC	43.61	43.93	44.10	0.16	1.6	40m	0.49	4.9	170m
E13	Dummers Copse AW/SINC	33.69	33.85	33.94	0.08	0.8	-	0.25	2.5	60m
E14	Moorgreen Meadows SSSI	28.87	29.13	29.26	0.13	1.3	20m	0.39	3.9	90m
E15	Monks Book Greenway SINC	34.74	34.94	35.05	0.11	1.1	10m	0.32	3.2	1.5% at 30m, transect end
E16	Monks Book Greenway SINC	27.44	27.49	27.53	0.04	0.4	-	0.10	1.0	-
E17	Monks Book Greenway SINC	27.39	27.45	27.50	0.05	0.5	-	0.11	1.1	110m (90m transect start)

		PEC – Total N deposition at roadside, kg/N/ha/yr			Impact Alone			Cumulative Impact		
ID	Site Name	2028 Base	2028 Base + Committed Development	2028 Base + Committed + Proposed Development	Max PCa	Max PC as % of CL	Distance to 1%CL or PEC<CL	Max PCc	Max PC as % of CL	Distance to 1%CL or PEC<CL
E18	Monks Book Greenway SINC	32.53	32.75	32.96	0.22	2.2	50m	0.43	4.3	1.5% at 100m, transect end
E19	Monks Book Greenway SINC	29.60	29.73	29.86	0.13	1.3	10m	0.26	2.6	40m
E20	Hardmoor Plantation AW	27.46	27.51	27.51	0.02	0.2	-	0.06	0.6	-

Table 4.7: Assessment of potentially significant operational phase effects from N deposition

ID	Site Name	Importance	Results Interpretation	Conclusion
E1/2	Northend Copse AW*/SINC	County	The cumulative impact exceeds the screening threshold up to 112m from the roadside, though the CL is exceeded throughout the site under all modelled scenarios. The Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent or magnitude of future CL exceedance.	No significant effect
E3	Park Wood AW	County	The cumulative impact exceeds the screening threshold up to 80m from the roadside, which is the end of the transect at the site boundary, though the CL is exceeded throughout the site under all modelled scenarios. The Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent or magnitude of future CL exceedance.	No significant effect
E4	Matthews Moor AW	County	The cumulative impact exceeds the screening threshold up to 60m from the roadside, though the CL is exceeded throughout the site under all modelled scenarios. The Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent or magnitude of future CL exceedance.	No significant effect
E5	Hazel Copse AW	County	The cumulative impact exceeds the screening threshold up to 160m from the roadside, though the CL is exceeded throughout the site under all modelled scenarios. The Proposed Development alone does not exceed 1% and so makes no discernible difference to the extent or magnitude of future CL exceedance.	No significant effect
E6/7	Hardmoor Copse AW/SINC	County	The cumulative impact exceeds the screening threshold up to 170m from the roadside (70m at transect E7), and the impact alone exceeds 1% of the CL up to 30m (10m at transect E7). However, the CL is exceeded throughout the site under all modelled scenarios, therefore future development makes no discernible difference to the extent or magnitude of future CL exceedance.	No significant effect
E8-11	River Itchen SSSI	National	The cumulative impact exceeds the screening threshold up to 110m from the roadside (100m at transect E10, 30m at E8), and the impact alone exceeds 1% of the CL up to 20m at transect E9. However, the CL is exceeded throughout the site under all modelled scenarios, therefore future development makes no discernible difference to the extent or magnitude of future CL exceedance.	No significant effect
E12/13	Dummers Copse AW/SINC	County	The cumulative impact exceeds the screening threshold up to 170m from the roadside (60m at transect E13), and the impact alone exceeds 1% of the CL up to 40m at transect E12. However, the CL is exceeded throughout the site under all modelled scenarios, therefore future	No significant effect

ID	Site Name	Importance	Results Interpretation	Conclusion
			development makes no discernible difference to the extent or magnitude of future CL exceedance.	
E14	Moorgreen Meadows SSSI	National	The cumulative impact exceeds the screening threshold up to 90m from the roadside, and the impact alone exceeds 1% of the CL up to 20m. However, the CL is exceeded throughout the site under all modelled scenarios, therefore future development makes no discernible difference to the extent or magnitude of future CL exceedance.	No significant effect
E15-19	Monks Book Greenway SINC	County	This is a narrow site with short modelled transects. The cumulative impact exceeds the screening threshold throughout much of the site, and the impact alone exceeds 1% of the CL up to 50m at transect E18 and up to 10m at transect E19. However, the CL is exceeded throughout the site under all modelled scenarios, therefore future development makes no discernible difference to the extent or magnitude of future CL exceedance.	No significant effect
E20	Hardmoor Plantation AW	County	The CL is exceeded under all modelled scenarios, however, all impacts remain below 1% of the CL.	No significant effect

4. SUMMARY

- 4.1 This Technical Appendix sets out the detailed methodology for, and results of, air quality assessment carried out in relation to 'Local Sites', including SSSIs, SINCs and woodlands listed on Natural England's Provisional Ancient Woodland Inventory.
- 4.2 The assessment has reviewed potential construction phase effects arising from dust liberation and emissions from construction vehicles, and operational phase effects arising from development-generated traffic growth and associated exhaust emissions.
- 4.3 The dust risk assessment carried out as part of the construction phase assessment indicates that dust liberation could impact upon nearby ecology receptors located within the ZOI, which in the absence of mitigation measures could result in significant negative effects at the National or County level. However, with impact avoidance and mitigation measures deployed, no significant residual effects are anticipated to remain.
- 4.4 In relation to construction traffic emissions, separate assessment of the potential for air quality impacts has not been undertaken. However, it is reasonable to assume that traffic volumes will be significantly lower during construction than operation, and that any impacts associated with construction traffic generation will be temporary in nature. Impacts modelled as part of the operational phase assessment are therefore likely to provide a worst-case scenario for realistic cumulative construction and occupation traffic generation and related potential effects.
- 4.5 The operational phase assessment involved detailed modelling of traffic-generated air pollutant concentrations (NO_x and NH₃) and Nitrogen deposition rates (N deposition) at specific receptors located on affected roads where a change in more than 1,000 AADT (or 200 HDV) was predicted. On the basis of the air quality modelling work carried out, no significant effects on the Local Sites are predicted either from the Proposed Development alone or when considered cumulatively with other Committed Development. This is either because:
- the contributions to future air pollutant concentrations and related deposition rates are imperceptibly small; or
 - because the specified environmental benchmarks indicating the potential for harm are already exceeded in the future with or without development, such that development makes no discernible difference to modelled exceedances, which must be considered in the context of an overarching National trend towards air quality improvement, meaning that development contributions would not result in habitat loss or net deterioration beyond the future baseline considered in the absence of development.
- 4.6 Overall, the Proposed Development is not predicted to generate significant air quality changes within the Local Sites assessed.

5. REFERENCES

Bobbink, R., Loran, C. & Tomassen, H. (Eds.) (2022). *Review and revision of empirical critical loads of nitrogen for Europe*. 110/2022. German Environment Agency.

CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and eland: Terrestrial, Freshwater, Coastal and Marine version 1.3 updated September 2024*. Chartered Institute of Ecology and Environmental Management, Winchester.

Holman, C., Barrowcliffe, R., Harker, G., Hawkings, C., Horrocks, S. & Prismall, F. (2019). *A guide to the assessment of air quality impacts on designated nature conservation sites*. Version 1.0, Institute of Air Quality Management, London.

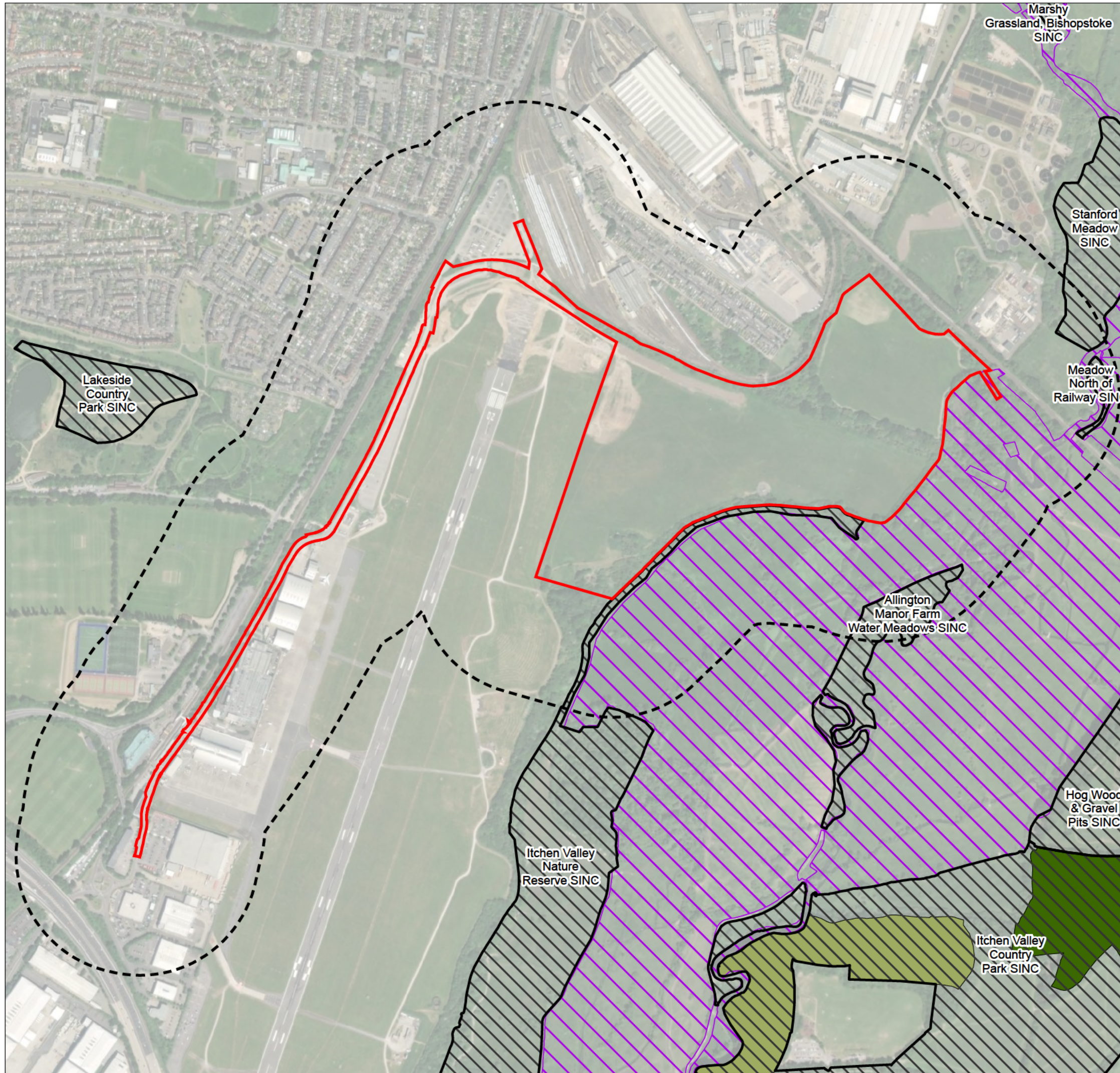
Laxen, D. & Marner, B. (2008). *Analysis of Factors Influencing Diffusion Tube Performance*. Air Quality Consultants.

RICARDO-AEA, 2016. *The ecological effects of air pollution from road transport: an updated review*. Natural England Commissioned Report no.199.

Maps

Map 1 Construction Phase Zone of Influence

Map 2 AQ Receptors and Modelled Transects



MAP 1 Site Location and ZoI for Construction Phase Assessment

KEY

- Site boundary
- 250m linear distance from site boundary
- River Itchen Site of Special Scientific Interest (SSSI)
- Sites of Importance for Nature Conservation (SINCs)
- Natural England's Provisional Ancient Woodland Inventory
 - Ancient & Semi-Natural Woodland
 - Ancient Replanted Woodland

SCALE: 1:8,000 at A3

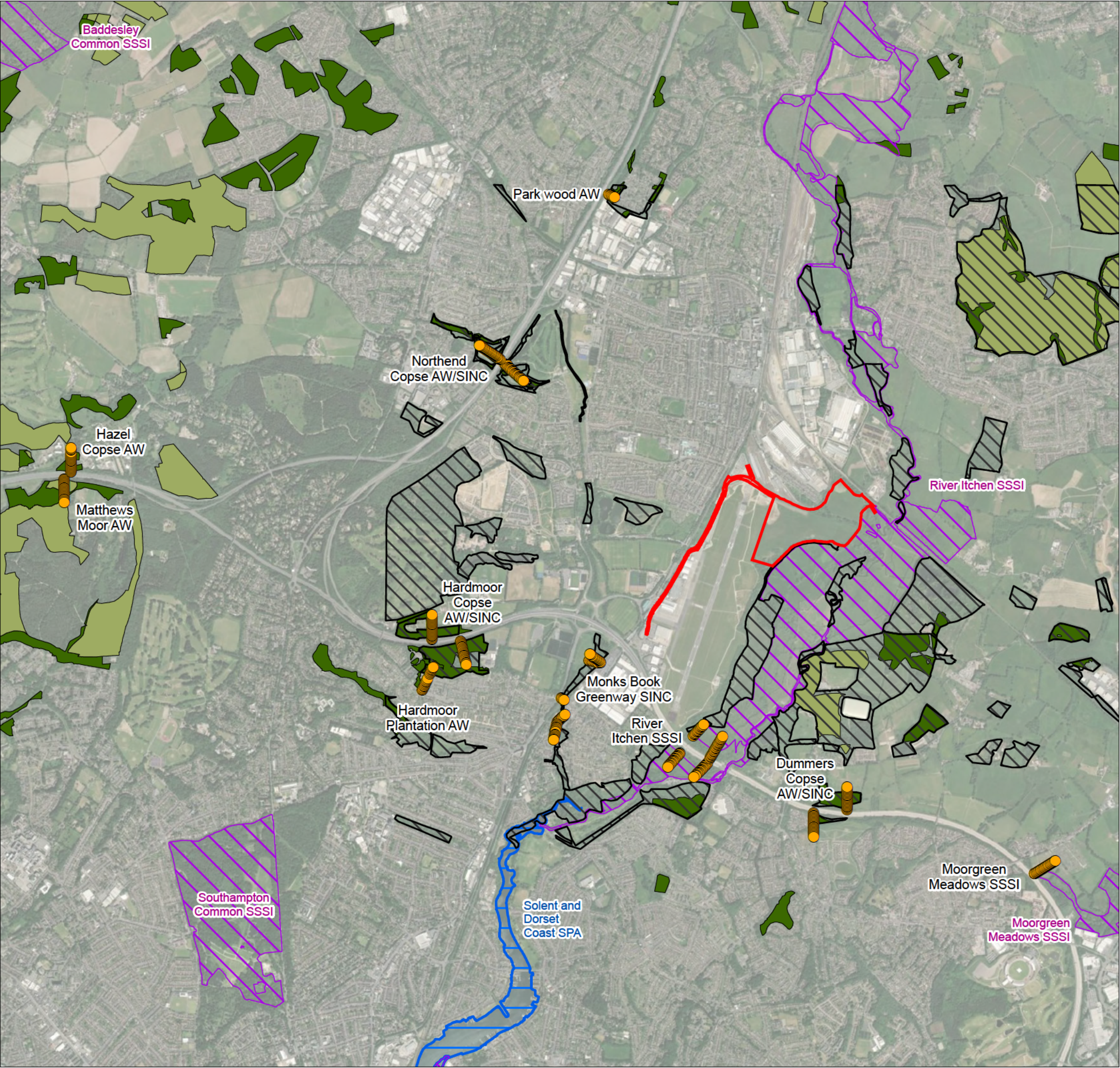
0 100 200 300 400 500 Metres



CLIENT: Bloc Works

PROJECT: Southampton Airport - Navigator Quarter

DATE: 22 May 2025



MAP 2 AQ Receptors and Modelled
Transects

KEY

- Site boundary
- AQ transect receptors
- Sites of Special Scientific Interest (SSSI)
- Special Protection Areas (SPA)
- Sites of Importance for Nature Conservation (SINCs)
- Natural England's Provisional Ancient Woodland Inventory
 - Ancient & Semi-Natural Woodland
 - Ancient Replanted Woodland

SCALE: 1:30,000 at A3

0 500 1,000 1,500 2,000 Metres



CLIENT: Bloc Works

PROJECT: Southampton Airport - Navigator Quarter

DATE: 22 May 2025