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6 CONCLUSION

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1 THE PROPOSAL

1.1 PROPOSED DEVELOPMENT

Johns Associates Ltd have been commissioned by Land and Development Advisory Ltd in April 2021 to undertake a range of ecological surveys to support a planning application for the development of the non-operational Ageas Bowl land. This location (hereafter referred to as 'the Site' or 'the proposed Development') has a central grid reference of SU47654 14139 and its approximate boundary and location is shown in Figure1.

The proposed development comprises:

'Mixed-use development comprising; 183 dwellings, 81-bedroom independent living facility (Use Class C2), 136-bedroom hotel (Use Class C1), well-being centre (Use Class E / F2), new pavilion building and improvements to existing stadium, vehicular access, car parking, pedestrian circulation and processional ramp, together with tree planting, landscaping, SuDs and biodiversity enhancements.'

1.2 RELATED DOCUMENTS AND PLANS

This report draws on material contained in the following reports, plans and drawings:

- 21016 (PL) 101 Proposed Masterplan January 2022;
- Nutrient Neutrality Study – Ageas Bowl, West End, Eastleigh, Hilson Moran Jan 2022
- 2022 Andy Clay Consulting "Flood Risk Assessment: HCC Strategic" report

2 HRA PROCESS

Special Protection Areas (SPA) and Special Areas of Conservation (SAC) are internationally important nature conservation sites, designated respectively for birds and for habitats and species. They receive statutory protection under the Conservation and Species Regulations 2019 (EU exit) (as amended), which transpose the requirements of the European Directives on the Conservation of Wild Birds (2009/147/EC, the 'Birds Directive') and the Conservation of Natural Habitats and of Wild Fauna and Flora (42/43/EEC, the 'Habitats Directive') into English legislation. SPAs and SACs are jointly called 'European sites' or 'Natura 2000 sites'. Ramsar wetland sites are international sites afforded similar legal protection to European sites.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects affecting European sites. Article 6(3) establishes the requirement for appropriate assessment:

6(3) 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. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Article 6(4) goes on to discuss alternative solutions, the test of 'imperative reasons of overriding public interest' (IROPI) and compensatory measures:

6(4) If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

In turn, these two articles are typically split into four stages, with the results of each stage influencing whether further stages are required:

1. Screening: determining whether the plan or project is likely to have an adverse effect on the integrity of a European site, with the concept of 'integrity' being related to the European site's conservation objectives. In turn, the conservation objectives relate to the European site's 'qualifying features', i.e. why it has been designated.
2. Appropriate Assessment: determining whether, in view of the European site's conservation objectives, the plan or project alone or 'in combination' with other plans and projects would have an adverse impact on the integrity of a European site.
3. Assessment of alternative solutions.
4. Imperative reasons of overriding public interest (IROPI) and compensatory measures.

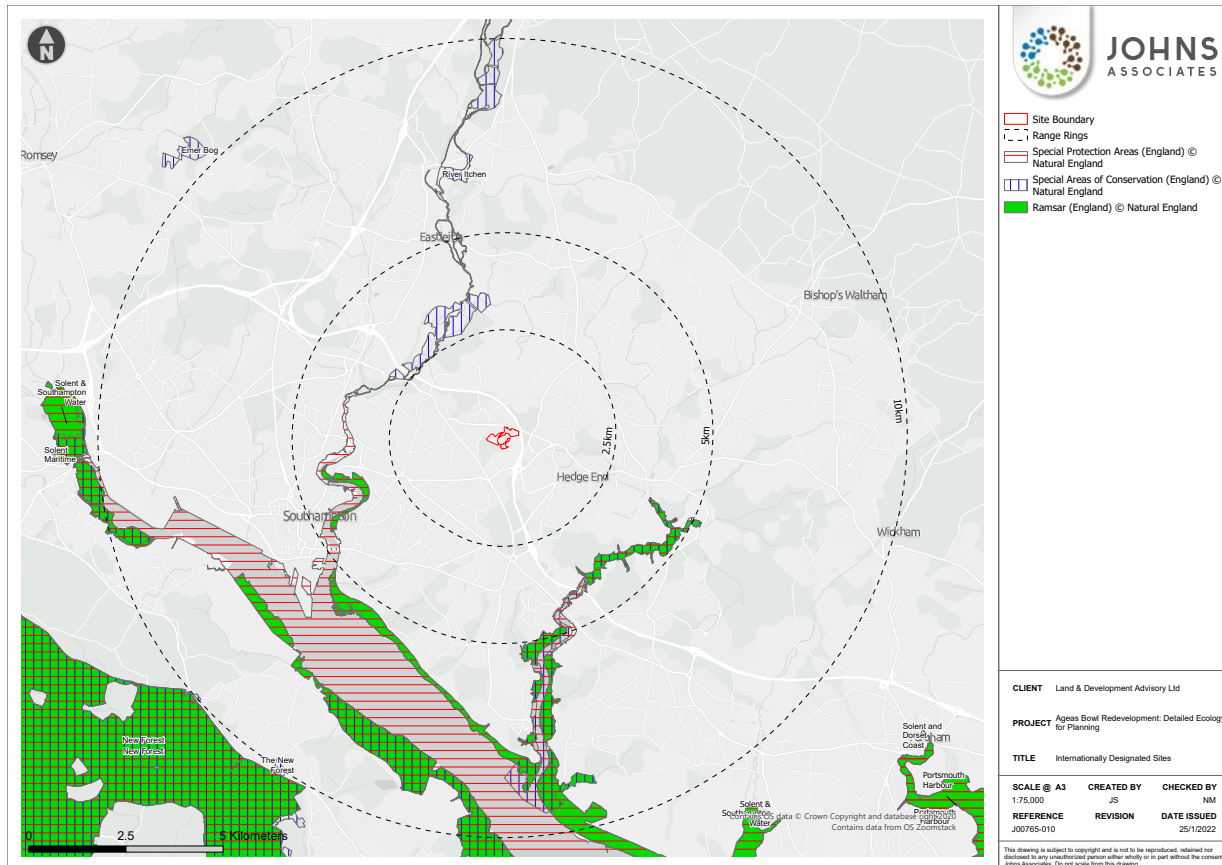
Eastleigh Borough Council is the competent authority responsible for ensuring that development control decisions associated with the location of the proposed Development do not adversely affect the integrity of

European sites.

It is considered that the type and location of development proposed for the Site could, without mitigation, have a significant effect on several European sites. This report discusses the relevant European sites (Section 3); explains what impacts can be screened out from further assessment (Section 4), and then presents the Appropriate Assessment for the remaining impacts at Section 5.

3 EUROPEAN SITES

Figure 1 shows all European designated sites within 10 km of the Site: this is the standard distance used in Habitats Regulations Assessments.



The sites are:

- River Itchen SAC – 2.6km to the north west of the Site, designated as a typical chalk river;
- Solent and Southampton Water Special Protection Area – 3.6km to the south-east of the Site, designated for its estuarine birds;
- Solent Maritime Special Area of Conservation – 3.6km to the south-east of the Site, designated for its estuarine habitat and associated vegetation;
- Solent and Dorset Coast Marine SPA – 3.5km to south west and 4.1km to south east, designated for breeding sandwich, common and little terns; and
- Solent and Southampton Water Ramsar site – 3.6km to the south-east of the Site, designated for its wetland habitats.

Additionally, at the request of Eastleigh Borough Council this report considers the European sites associated with the New Forest:

- New Forest SPA – 10km to the south-west of the site across Southampton Water (23km via the M27 and 16.5km through the centre of Southampton), designated for five bird species;
- New Forest SAC – 10km to the south-west of the site, designated for its water bodies, heathland, beech and oak woodland, depressions on peat substrates, damselflies and stag beetle; and
- New Forest Ramsar site – 10km to the south-west of the site, designated for its wetland habitats.

3.1 RIVER ITCHEN SAC¹

The River Itchen SAC covers 304ha. It is a chalk river. It is mainly spring-fed, so the water is of high quality, with high dissolved oxygen level and a relatively constant temperature. Overall, its flora is also healthy. At its nearest point (in a straight line), it is about 2.6km from the border of the Site. The River Itchen SAC is designated for watercourses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation.

The SAC is additionally notified for a number of SSSI and Habitats Directive Annex II species features, including invertebrate assemblages and a key breeding population of the nationally rare southern damselfly *Coenagrion mercuriale*, white-clawed crayfish *Austropotamobius pallipes* (one of the last remaining strongholds in central southern England), Atlantic salmon *Salmo salar*, bullhead *Cottus gobio* and brook lamprey *Lampetra planeri*, and an expanding population of otter *Lutra lutra*.

The Itchen faces numerous pressures from water abstraction and flow diversions, discharges, agricultural runoff, channel modifications, fisheries management and human impacts associated with the urbanisation alongside much of the river's valley. The watercourses feature of the River Itchen SAC is in excellent condition in terms of representativity, conservation and global overview. The southern damselfly feature is in excellent condition, and the bullhead is in good global grade. The main threats to the SAC's qualifying features are:

- Human induced changes in hydraulic conditions
- Grazing
- Pollution to groundwater from point and diffuse sources.

Most of the SSSI units that comprise the River Itchen SAC near the Site are in unfavourable recovering condition. The main reasons for this are historic channel modification and a predominantly un-natural physical structure.² There is evidence of pressure from nutrient enrichment and localised sedimentation. None of the survey sites achieved high ecological status, although most were recorded as good status³.

3.2 SOLENT AND SOUTHAMPTON WATER SPA⁴

The Solent and Southampton Water SPA covers 5401ha. At its nearest point (in a straight line), it is about 3.6km from the Site. The SPA is composed of extensive intertidal mudflats and sandbanks, inter- and subtidal rock, areas of saltmarsh, coastal lagoons, coastal reed beds, shingle banks, and grazing marsh. Estuarine sediments within the site support rich populations of invertebrates that provide an important food source for wintering birds. More than 90,000 wading birds use the Solent annually to feed and roost. Besides using the mudflats and grazing marshes to feed, they also rely on farmland with cereals and pasture, and amenity

¹ <https://sac.jncc.gov.uk/site/UK0012599>

² JNCC River Itchen (2020) <https://sac.jncc.gov.uk/site/UK0012599>

³ Grieve, N. (2014) River Itchen SSSI Channel Unit Condition Assessment, <http://www.hwa.uk.com/site/wp-content/uploads/2017/12/1.-Grieve-2014-River-Itchen-SSSI-Condition-Assessment-UCL.pdf>

⁴ <http://www.jncc.gov.uk/pdf/SPA/UK9011061.pdf>

grasslands outside the SPA boundary.

The Solent and Southampton Water SPA is designated for:

- Black-tailed godwit (non-breeding)
- Common tern (breeding)
- Dark-bellied brent goose (non-breeding)
- Little tern (breeding)
- Mediterranean gull (breeding)
- Roseate tern (breeding)
- Sandwich tern (breeding)
- Teal (non-breeding)
- Waterbird assemblage (non-breeding)

There is no global assessment of the bird populations of the SPA. All but the roseate tern are part of a larger regional population; the roseate terns are isolated. The birds' population size ranges from good (Mediterranean gull, black-tailed godwit) to poor (sandwich tern).

The main threats to the SPA's qualifying features are:

- Pollution to groundwater from point and diffuse sources
- Changes in abiotic conditions
- Fishing and harvesting aquatic resources
- Changes in biotic conditions
- Outdoor sports and leisure activities, recreational activities

3.3 SOLENT MARITIME SAC⁵

The Solent Maritime SAC covers 11,243 ha and overlaps with the Solent and Southampton Water SPA and Ramsar. At its nearest point (in a straight line), it is about 3.6km from the Site.

The Solent Maritime SAC is a complex site encompassing a major estuarine system, with extensive areas of intertidal mudflats and sandflats often supporting eelgrass, subtidal sandbanks, saltmarsh and natural shoreline transitions such as drift line vegetation. The Solent and its inlets are unique in Britain and Europe for their unusual tidal regime, including double tides and long periods of tidal stand at high and low tide. As a result, the SAC is a unique suite of functionally linked estuaries and dynamic marine and estuarine habitats. The SAC has the largest number of small estuaries in the tightest cluster anywhere in Great Britain. It is located in one of the only major sheltered channels in Europe, between the Isle of Wight and the mainland.

The Solent Maritime SAC is the only site to support all four species of cordgrass (*Spartina*) found in the UK, including the rare native small cordgrass (*Spartina maritima*). It also includes a number of coastal lagoons, sand dunes at East Head and at the time of designation supported a population of the rare Desmoulin's whorl snail *Vertigo moulinsiana*.

The Solent Maritime SAC is designated for its:

⁵ <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030059.pdf>

- Estuaries
- *Spartina* swards
- Atlantic salt meadows

The estuary feature of the SAC has a global grade of 'good', comprising excellent habitat representativity, and good surface and conservation status. The *Spartina* swards have a global grade of 'excellent', comprising excellent representativity and surface, but average/reduced conservation status. The Atlantic salt meadows have 'good' status throughout.

The principal reasons⁶ contributing to the unfavourable status of habitats and species within the SAC are:

- Elevated nutrient levels;
- Low infaunal quality index (IQI) in intertidal and subtidal sediments;
- Elevated aqueous contaminants, most notably TBT;
- Continued decline in extent of saltmarsh; and
- Decrease in extent when compared with historic extent of both intertidal and subtidal seagrass beds.

There is no reference to air pollution from road traffic being an issue in relation to SAC condition status.

3.4 SOLENT AND DORSET COAST MARITIME SPA

The SPA covers an area of 88,980.55 ha. It regularly supports more than 1% of the Great Britain breeding populations of three species listed in Annex I of the Birds Directive: breeding sandwich, common and little terns. Therefore, the site qualifies for SPA Classification in accordance with the UK SPA selection guidelines (stage 1.1). The Solent and Dorset Coast SPA was formally designated in February 2020. The SPA is located on the south coast within the English Channel, comprising approximately 255 square nautical miles (SNM) and extending from the Isle of Purbeck in the West to Bognor Regis in the East, following the coastline on either side to the Isle of Wight and into Southampton Water. The SPA is intended to protect important foraging areas at sea used by breeding colonies in nearby SPA.

Species of terns that depend on the Solent and Dorset Coast SPA area of sea for foraging that derive from breeding colonies at the following existing SPAs: Poole Harbour SPA, Solent and Southampton Water SPA and Chichester and Langstone Harbours SPA.

3.5 SOLENT AND SOUTHAMPTON WATER RAMSAR⁷

The Solent and Southampton Water Ramsar site covers 5346 hectares. Its boundary overlaps with the Solent Maritime SAC and the Solent and Southampton Water SPA. At its nearest point (in a straight line), it is about 3.6 km from the Site.

The Ramsar site was designated because:

⁶ NE Condition Assessment June 2018

⁷ <https://jncc.gov.uk/jncc-assets/RIS/UK11063.pdf>

- It is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual strong double tidal flow, with long periods of slack water at high and low tides;
- It includes many wetland habitats characteristic of the biogeographical region: saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs;
- It supports an important assemblage of rare plants and invertebrates; and
- It supports many waterfowl, including ringed plover, dark-bellied brent goose, Eurasian teal, and black-tailed godwit

The only factor listed as adversely affecting the site's ecological character is erosion.

3.6 NEW FOREST SPA⁸

The New Forest SPA covers 27,998 hectares. Its boundary overlaps with the New Forest SAC, New Forest Ramsar site, and the River Avon SAC. It is located approximately 10km from the Site at its closest point (in a straight line), but it takes about 23 km to drive there, as Southampton Water is between the Site and the SPA.

The New Forest SPA comprises the largest area of 'unsown' vegetation in lowland England and includes the representation on a large scale of habitats formerly common but now fragmented and rare in lowland western Europe. The intimate mosaic of habitats owes much to the local geology and traditional common grazing system. The New Forest habitats include lowland heath, valley and seepage step mire, or fen, ancient pasture woodland, including riparian and bog woodland and a range of acid to neutral grasslands. Nowhere else do these habitats occur in combination and on so large a scale.

The SPA supports an exceptionally rich bird fauna including internationally important breeding and wintering populations. The New Forest SPA is designated for its:

- European nightjar
- Hen harrier
- Eurasian hobby
- Woodlark
- European honey-buzzard
- Wood warbler
- Dartford warbler

Table 3.1 summarises the site assessment for each species.

Table 3.1 Site assessment for New Forest SPA species

Name	Breeding status	Population	Isolation
European nightjar	Breeding	B	C
Hen harrier	Non-breeding	C	C

⁸ <https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9011031.pdf>

Eurasian hobby	Breeding	B	C
Woodlark	Breeding	A	B
European honey buzzard	Breeding	B	B
Wood warbler	Breeding	B	C
Dartford warbler	Breeding	A	B

The main threats to the New Forest SPA are:

- Air pollution, air-borne pollutants
- Fishing and harvesting of aquatic resources
- Biocenotic evolution, succession
- Human induced changes in hydraulic conditions

3.7 NEW FOREST SAC⁹

The New Forest SAC covers 29,214 hectares. Its boundary overlaps with the New Forest SPA and Ramsar site. It is located approximately 10km from the proposed Development site at its closest point (in a straight line), but it takes about 23 km to drive there, as Southampton Water is between the Site and the SAC.

The SAC comprises a matrix of habitats including pasture woodland and scrub dominated by oak, beech and holly; heathland and associated grassland; wet heath, valley mire-fen and plantations dating from various periods since the early 18th century, and a range of acid to neutral grasslands. The SAC contains the most extensive areas of active wood-pasture in north west Europe; the most extensive stands of lowland northern Atlantic wet heaths in southern England; the largest area of lowland dry heathland in the UK; and many streams, small rivers and ponds.

The New Forest SAC is designated for its:

- Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)
- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*
- Northern Atlantic wet heaths with *Erica tetralix*
- European dry heaths
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinia caeruleae*)
- Depressions on peat substrates of the *Rhynchosporion*
- Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)
- *Asperulo-Fagetum* beech forests
- Old acidophilous oak woods with *Quercus robur* on sandy plains
- Bog woodland*

⁹ <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0012557.pdf>

- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion Incanae*, *Salicion albae*)*
- Southern damselfly
- Stag beetle

* are priority features

All of the qualifying habitats in the SAC have a global grade of 'excellent', except Northern Atlantic wet heaths, *Aspero-Fagetum* beech forests and bog woodland whose global grade is 'good'.

The main threats to the SAC are

- Outdoor sports and leisure activities, recreational activities
- Pollution to groundwater from point and diffuse sources
- Human induced changes in hydraulic conditions
- Problematic native species
- Forest and plantation management and use

The New Forest National Park receives over 15 million day visits per year. It is located within easy reach of two major urban areas. The New Forest has permissive public access, and landowners permit a wide range of activities including traditional countryside pursuits, sports events, golf and camping (ten campsites provide 3,300 pitches).

3.8 NEW FOREST RAMSAR¹⁰

The New Forest Ramsar site covers 28,003 hectares. Its boundary overlaps with the New Forest SPA and SAC. It is located approximately 10km from the proposed Development site at its closest point (in a straight line), but it takes about 23 km to drive there, as Southampton Water is between the Site and the Ramsar.

The New Forest Ramsar site was designated because of its:

- Valley mires and wet heaths
- Diverse assemblage of wetland plants. Seven species of nationally rare plants are found on the site
- Mire habitats with associated invertebrate fauna

Factors affecting the Ramsar site's ecological character are:

- Commercial-scale forest exploitation
- Drainage/land-claim
- Introduction/invasion of non-native plant species
- Recreational/tourism disturbance

¹⁰ <https://jncc.gov.uk/jncc-assets/RIS/UK11047.pdf>

4 SCREENING

Table 2 summarises the factors that threaten the European sites discussed at Section 3.

Table 4.1 European sites and factors that threaten them

European site	Itchen River SAC	Solent and Southampton Water SPA	Solent Maritime SAC	Solent and Southampton Water Ramsar	Solent and Dorset Coast SPA	New Forest SPA	New Forest SAC	New Forest Ramsar
Approximate distance from the edge of the Site	2.6km	3.6km	3.6km	3.6km	3.5km	10km	10km	10km
Human induced changes in hydraulic conditions	A					R	V	
Grazing	B							
Pollution to groundwater	C	D	I		O		W	
Changes in abiotic conditions		E	J					
Changes in biotic conditions		F	K					
Fishing and harvesting of aquatic resources		G	L			S		
Outdoor sports and leisure activities		H	M		P		X	AA
Erosion				N				
Air pollution	(T)					T		
Biocenotic evolution, succession						U		
Problematic native species							Y	
Forest and plantation management and use							Z	BB
Drainage / land claim								CC
Introduction / invasion of non-native plant species								DD

Key:

Identified by JNCC as a threat to the European site

XX Reference for discussion below

Table 3 shows threats/impacts to European sites that can be screened out for the proposed Development.

Table 3 Impacts screened out for the Development

Impact screened out	Reason for screening out
B – grazing at Itchen River SAC	The Development has no control over grazing at the SAC
E, F, J, K – changes and biotic and abiotic conditions at Solent and Southampton Water SPA and Solent Maritime SAC	These changes are phenomena (e.g. climate change) that are not affected by, or within the control of, the Development
G, L, S – fishing and harvesting of aquatic resources at Solent and Southampton Water SPA, Solent Maritime SAC and New Forest SPA	These are commercial activities not affected by housing and employment land at the Development Site
N – erosion at Solent and Southampton Water Ramsar	This erosion is primarily due to sea level rise. It is being dealt with through coastal defence strategies. It is not affected by, or within the control of, the Development Site
R, V – human induced changes in hydraulic conditions at New Forest SAC and Ramsar	The New Forest lies across Southampton Water from the Development Site, and its hydraulic conditions are unaffected by the Development
W – pollution to groundwater at New Forest SAC	For the same reasons as R and V, pollution to groundwater at New Forest SAC is unaffected by the Development
U, Y, Z, BB, CC, DD – biocenic evolution, problematic native species, forestry management, land claim and non-native species at New Forest SAC and Ramsar	These are all processes and activities which originate in or very near the New Forest, and are unaffected by the Development

The remaining issues ‘screened in’ are:

- A changes in hydraulic conditions at River Itchen SAC;
- C, D, I and O pollution to groundwater at River Itchen SAC, Solent and Southampton Water SPA, Solent Maritime SAC and Solent and Dorset Coast SPA – this has been extended to water pollution generally, in response to more recent legal cases¹¹;
- H, M and P outdoor sports and leisure activities at Solent and Southampton Water SPA, Solent Maritime SAC and Solent and Dorset Coast SPA;
- X, AA, T outdoor sports and leisure activities, and associated air pollution at New Forest SAC and Ramsar;
- (T) Air pollution for River Itchen SAC screened in on basis of: human induced changes in hydraulic conditions (River Itchen). Air pollution is not specifically referenced in the SAC Site Improvement Plan, but water pollution is a priority issue.

¹¹ Cases C-293-294/17 Coöperatie Mobilisation

These potential impact issues are discussed further at Section 5 Appropriate Assessment.

5 APPROPRIATE ASSESSMENT

5.1 CHANGES IN HYDRAULIC CONDITION (RIVER ITCHEN SAC)

5.1.1 Background

Changes to water levels - hydraulic condition - can come from:

- Water abstraction from the river or from aquifers that act as a source for the river
- Surface water flow to the river
- Flow of wastewater to the river

Water abstraction in the Hampshire area is problematic. Water to the Site will be provided by Southern Water, which is in an area of severe water stress¹². In the Southern Water area to the east of Southampton, all of the water currently comes from aquifers. If too much water is abstracted from the aquifer, river levels can fall to the point where water quality goes down. This is already the case with the Rivers Itchen and Test¹³. This problem will be exacerbated as more water is required for new homes and businesses. By 2025, Southern Water will need to receive a transfer of 9 million additional litres of water per day from Portsmouth Water. It is also planning for a desalination plant on the Solent or a water recycling scheme on the River Itchen¹⁴.

In March 2019, an inspector authorised an amendment to an Environment Agency abstraction license, allowing Southern Water to abstract more water during drought times, pending the implementation of new reliable water supplies¹⁵. These supplies are expected to be in place by 2030. Although parts of the Development Site may be operational before the new water provision is in place, Southern Water's Water Resource Management Plan takes future housing growth into account, and so covers developments such as the Development Site.

5.1.2 Impact of the Development Site

Surface water from the Site will be collected in, and discharged from an extensive Sustainable Urban Drainage Systems (SUDS) at the site, as well as water being intercepted by and infiltrating through vegetated habitats and also other permeable surfaces. Soil type across the site reflects the predominance of underlying fine-grained strata and high water table, largely comprising 'Naturally wet very acid sandy and loamy soils' draining to shallow groundwater with the golf course areas comprising 'Slowly permeable

¹² Environment Agency and Natural Resources Wales (2013) Water stressed areas - final classification, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/244333/water-stressed-classification-2013.pdf.

¹³ Environment Agency (2013) Test & Itchen River Restoration Strategy, https://s3-eu-west-2.amazonaws.com/wp-cainbio/wp-content/uploads/2018/02/18074217/T_I_RR_Strategy_Management_report_Issue_5_FINAL.pdf

¹⁴ Southern Water (2019) Securing a resilient future for water in the South: Our Water Resources Management Plan for 2020 – 70, https://www.southernwater.co.uk/media/3656/5025_wrmp_v11.pdf

¹⁵ Southern Water (2019) Water Resources Management Plan 2019: Technical Overview, <https://www.southernwater.co.uk/media/3657/wrmp19-technical-overview.pdf>

seasonally wet slightly acid but base-rich loamy and clayey soils' with impeded drainage draining to the local stream network¹⁶.

With reference to the associated 2022 Andy Clay Consulting "Flood Risk Assessment (FRA) HCC Strategic" report:

"The site is in the overall catchment of the River Hamble, located ~4.3km to the east of the site. This watercourse then drains south-west into Southampton Water near Hamble-le-Rice ~8.4km to the south of the site. The River Hamble is tidal for approximately half of its length, and navigable in its lower reaches. The drainage of water from the site into the River Hamble is achieved through a tributary of Pudbrook Lake. This flows within a culverted section to the east of the M27 motorway, adjacent to the eastern boundary of the overall site."

With regard to the local Telegraph Brook, which dissects the site, the above FRA highlights that:

"The site is within the local catchment of Telegraph Brook, which is a small watercourse that drains from the central part of Telegraph Wood....Water would ordinarily be conveyed into an inlet within Telegraph Wood that is just outside of the site and then through a culverted section of the watercourse that is situated beneath the western part of the site. There is a culvert outlet at the downstream-end of the culvert which drains into an open section of channel located along the northern site boundary and adjacent to the David Lloyd Gym and Tennis Centre....This section of watercourse is semi-natural in that it is a simple trapezoidal channel aligned with trees and hedges. It then flows into a culverted section that passes beneath Marshall Road roundabout. The lower section of Telegraph Brook flows within a less natural channel. It has a very shallow gradient with the channel banks formed by wooden sleepers. This drains through the eastern part of the site. The watercourse then drains into an upper and lower lake separated by a weir at the edge of the site. The upper lake is connected to the lower lake via a weir, on the eastern side of the upper lake and which is on the western side of the lower lake....The lower lake then drains via another lake to the south-east, with this located outside of the site extent. It then drains to another culverted section under the M27 motorway. This culverted section is understood to continue under the retail estate to the east of the site, eventually draining into the River Hamble."

Therefore, the only potential impact on the River Itchen SAC comes from discharges from the Portswood WWTW. Wastewater from the Site will go to the Portswood Wastewater Treatment Works (WWTW). The WWTW is located around 3.8 km to the west of the Site, and discharges to the River Itchen. Nutrient neutrality issues are addressed in section 5.2 and 5.3 below.

5.1.3 In combination impacts

In relation to water abstraction, Southern Water's Water Resource Management Plan uses local authorities' housing projections as a basis for its water demand forecasts. As such, it caters for 'in combination' impacts of the current and likely future population over its entire area, i.e. 'in combination' impacts.

¹⁶ Hilson Moran 2022

In relation to wastewater and nutrient neutrality, Eastleigh Borough Council (EBC) are currently putting in place a land assembly project that will provide a permanent Borough wide nitrogen (N) and phosphate (P) mitigation approach. Consequently, it is anticipated that the impacts associated with the development will be fully mitigated by EBCs Strategic Land Parcels offsetting scheme (or similar scheme, such as that run by Hampshire & Isle of Wight Wildlife Trust).

5.1.4 Mitigation measures

The Site does not need to provide mitigation measures beyond the nutrient neutrality discussed at Section 5.2 and 5.3 below, as Southern Water is providing mitigation measures for water abstraction over its entire area.

5.1.5 Conclusion of appropriate assessment re. changes in hydraulic conditions at River Itchen SAC

In conclusion, water abstraction from the River Itchen is controlled by the Environment Agency through abstraction consents. These have been agreed until 2030, and incorporate the growth expected in Eastleigh Borough Council. After 2030, Southern Water is expected to have new water facilities in place. There will be no significant changes to surface water entering the River Itchen. Wastewater nutrient neutrality issues will be fully mitigated by EBCs Strategic Land Parcels offsetting scheme (or similar scheme).

5.2 WATER POLLUTION AND SILTATION (RIVER ITCHEN SAC)

5.2.1 Background: water pollution

The Itchen faces many pressures from water abstraction, flow diversions, discharges, agricultural runoff channel modifications, fisheries management and human impacts associated with the urbanisation alongside much of the river's valley"¹⁷.

Elevated nutrients - notably nitrogen and phosphorus - in water interfere with the balance between plant species, favouring algae and leading to a loss of characteristic plant species. In classic chalk streams like the River Itchen, the keystone species is *Ranunculus penicillatus*. Over time, low river flows, combined with nutrient inputs from point sources (e.g. WWTW outflows) have increased the proportion of filamentous algae and nutrient-tolerant plants in the River Itchen, at the expense of *Ranunculus*¹⁸. In turn, the changes to plant community composition and structure, and the periodic reductions in dissolved oxygen due to large swards of algae, can affect the wider food web.

A 2013 study found that the water quality of the lower reaches of the River Itchen, which includes those parts of the river closest to the Site, was 'unfavourable' due to inappropriate water levels; inappropriate weirs, dams and other structures; invasive freshwater species; water pollution / agricultural run-off; and water pollution discharge¹⁹.

The Site will discharge to Portswood Wastewater Treatment Works. With reference to Southern Water records, foul sewage from the Site is currently conveyed to Portswood WwTW, which lies approximately 3.8 km to the west of the site and discharges treated effluent directly into the tidal reach of the River Itchen. The WwTW, which is projected to serve an inhabitant population for 2025/2026 of 81,033 PE and has a consented DWF of 27,700 m³/day, does not have a permit concentration limit for either TN or TP.

5.2.2 Impact of the Development Site

There are no significant watercourses on Site. The likelihood of sediment/silt running into other SPA/SAC watercourses from the Development Site is negligible. With reference to the associated 2022 Andy Clay Consulting "Flood Risk Assessment: HCC Strategic" report:

"The site is in the overall catchment of the River Hamble, located ~4.3km to the east of the site. This watercourse then drains south-west into Southampton Water near Hamble-le-Rice ~8.4km to the south of the site. The River Hamble is tidal for approximately half of its length, and navigable in its lower reaches. The drainage of water from the site into the River Hamble is achieved through a

¹⁷ Natural England (2014) Site improvement plan – River Itchen

¹⁸ Eastleigh Borough Council (2015) Issues and Options Eastleigh Borough Local Plan, Habitat Regulations Assessment Screening Report, <https://www.eastleigh.gov.uk/media/1715/habitats-regulation-assessment.pdf>; Poynter, A.J.W. (2013) Impacts of environmental stressors on the River Itchen *Ranunculus* community, PhD thesis, University of Birmingham, <https://etheses.bham.ac.uk/id/eprint/5112/1/Poynter14PhD.pdf>.

¹⁹ Environment Agency (2013) Test & Itchen River Restoration Strategy, https://s3-eu-west-2.amazonaws.com/wp-cainbio/wp-content/uploads/2018/02/18074217/T_I_RR_Strategy_Management_report_Issue_5_FINAL.pdf

tributary of Pudbrook Lake. This flows within a culverted section to the east of the M27 motorway, adjacent to the eastern boundary of the overall site."

With regard to the local Telegraph Brook, which dissects the site, the above FRA highlights that:

"The site is within the local catchment of Telegraph Brook, which is a small watercourse that drains from the central part of Telegraph Wood....Water would ordinarily be conveyed into an inlet within Telegraph Wood that is just outside of the site and then through a culverted section of the watercourse that is situated beneath the western part of the site. There is a culvert outlet at the downstream-end of the culvert which drains into an open section of channel located along the northern site boundary and adjacent to the David Lloyd Gym and Tennis Centre....This section of watercourse is semi-natural in that it is a simple trapezoidal channel aligned with trees and hedges. It then flows into a culverted section that passes beneath Marshall Road roundabout. The lower section of Telegraph Brook flows within a less natural channel. It has a very shallow gradient with the channel banks formed by wooden sleepers. This drains through the eastern part of the site. The watercourse then drains into an upper and lower lake separated by a weir at the edge of the site. The upper lake is connected to the lower lake via a weir, on the eastern side of the upper lake and which is on the western side of the lower lake....The lower lake then drains via another lake to the south-east, with this located outside of the site extent. It then drains to another culverted section under the M27 motorway. This culverted section is understood to continue under the retail estate to the east of the site, eventually draining into the River Hamble."

Current land use on the site includes buildings, sealed surfaces, unvegetated unsealed surface, modified/amenity grassland and woodland. Future land uses will be partly built-up and partly green infrastructure, including wetlands/SUDS.

Table 5.1 sets out Construction Environment Management Plan and on-site SuDS measures to address water pollution issues on affected European sites.

Table 5.1 Assumed impact avoidance measures

Construction	Production of a detailed Construction Environmental Management Plan, to include (but not limited to): • Clear construction site demarcation to ensure minimal footprint of temporary/permanent development. • General best practice pollution prevention and response measures • Access and construction routing • Phasing and timings schedule • Suppression of construction dust and litter • Limit to the duration and timing of construction activities to avoid crepuscular activity periods and other sensitive periods (e.g. to local residents) • Restrictions to lighting during sensitive periods • Chemical handling and storage control measures • Regular inspection of measures and habitats to ensure effectiveness and to identify remedial actions. • Tree and hedgerow protection and provision of other barrier fencing where needed; • Measure to protect wildlife (e.g. those needed under any protected species method statements/licences), detailed method statements, Ecological Clerk of Works, monitoring and management intervention; • Avoidance of open excavations and entrapment risk for wildlife • Measures to control and prevent the spread of invasive species • CEMP management responsibilities, duties, monitoring, reporting, improvement plan • Communications and complaints reporting system
Construction and operation	All watercourses will be protected by a 10m ecological buffer (excluding SUDS connections and ecological improvements). Watercourse severance has been minimised through the development.
Operation	Provision of extensive SuDS system to capture and treat pollutants on Site. The use of 'soft SuDS', such as swales, detention basins and the de-culverting of the existing Telegraph Brook to provide a two-stage channel, with restored floodplain and the potential for new wetland habitats, have been identified as surface water flooding mitigation measures. Although not quantified at this stage, these new stormwater attenuation/conveyance features and floodplain habitats will help to remove sediment, N and P from site runoff, and in terms of the de-culverted Telegraph Brook, could be used to reduce nutrient existing nutrient loadings in the brook itself.

Table 5.2 lists remaining potential Impacts of the Development on water quality in the River Itchen SAC post avoidance measures.

Table 5.2 Potential impacts of the Development Site, post avoidance measures, on water quality in the River Itchen SAC

Potential impact	Construction stage	Operation stage
Change in nutrient (nitrate and phosphate) emissions from the operation/occupation of the site largely associated with domestic and business generation and application of fertilisers in open spaces minimised or avoided, but with generation of nutrients from urban operations including discharge of treated sewage arising from the development, with potential effects on eutrophication levels in the receiving watercourses and associated features of interest.		v
Change in riverine flow in the River Itchen associated with increased abstraction by Southern Water to provide potable supply to the new population at the Site and effects on and associated features of interest from a change in flow regime		v

5.2.3 Mitigation measures

Additional mitigation measures are proposed to deal with any residual, post-avoidance impacts on the integrity of the River Itchen SAC. They include:

- Site-wide nutrient neutrality and balancing: A nitrate neutrality assessment and phosphate assessment has been completed (see 5.3 below) and focuses on the use of Portswood Common WwTW to receive, treat and discharge all sewage associated with the site. This WwTW currently does not possess a discharge limit neither for Total Phosphorous (TP) nor Total Nitrogen (TN). Mitigation measures are set out in 5.3.4 below.

Such measures will ensure that pollutants from the Site will not affect the Integrity of the River Itchen SAC.

5.2.4 In combination impacts

'In combination' impacts on the River Itchen SAC arising from the Development Site are not predicted because of the robust design of the drainage systems. In addition, should it be required as a result of future discussions or monitoring, further wetland treatment systems could be introduced and/or nutrient credits could be purchased. We understand that Eastleigh Borough Council (EBC) are currently putting in place a land assembly project that will provide a permanent Borough wide nitrogen (N) and phosphate (P) mitigation approach. Consequently, it is anticipated that the impacts associated with the development will be fully mitigated by EBCs Strategic Land Parcels offsetting scheme (or similar scheme, such as that run by Hampshire & Isle of Wight Wildlife Trust).

5.2.5 Conclusion of appropriate assessment re. water pollution to River Itchen SAC

No significant effects are predicted, together with the mitigation and enhancement including:

- robust measures to manage any construction effects, managed through a CEMP supported by monitoring and management intervention, that could result in water pollution during the construction phase. The Site drains into the River Hamble;
- treatment of foul effluent at Portswood WwtW to an approved standard;
- the management of potable water supply and flows in the River Itchen through separate and strategic measures by Southern Water; and
- a suite of on site and off-site mitigation set out in 5.3.4 below..

Therefore, it is concluded that no likely significant effects associated with water quality on the River Itchen will occur.

5.3 WATER POLLUTION (SOLENT AND SOUTHAMPTON WATER SPA, SOLENT MARITIME SAC), SOLENT AND DORSET SPA)

5.3.1 Background

The Solent Maritime SAC / Solent and Southampton Water SPA also suffer from nitrogen and phosphorus pollution. This has caused excessive growth of green weed, which can form dense mats in the intertidal areas, inhibiting the natural functioning of these habitats. The Environment Agency has observed evidence of toxic contamination and thermal pollution in some areas of the SPA/SAC: both of these affect the fauna which are the qualifying features of the SAC/SPAs²⁰.

Research by Natural England found the condition of the Solent Maritime SAC features - estuary, mudflat & sandflats, sandbanks – to be unfavourable. The unfavourable assessment is based in part on poor water quality. Other attributes were also found to be failing, such as, for seagrasses, their extent, distribution, rhizome structure and reproduction as well as biomass, and for the intertidal mud and sand features their faunal quality. These failures are considered to be in part due to impacts from elevated nutrients²¹.

The HRA for the Eastleigh Local Plan²² notes that major sources of nitrogen to the Solent European marine sites are from:

- Coastal background seawater from the English Channel;
- Direct rivers and streams discharging into the sites;
- Indirect rivers and streams discharging elsewhere in the Solent; and
- Effluent discharges permitted by the Environment Agency.

5.3.2 Impact of the Development Site

Table 5.2 lists the potential impacts of the Development Site, after the avoidance measures listed at Table 5.1, on water quality in the Solent and Southampton Water SPA, Solent Maritime SAC and Solent and Dorset SPA.

5.3.3 In combination impacts

As is explained in 5.2.4, it is not necessary to consider 'in combination' impacts for this issue because the Development Site is following a wider approach to the issue which means that it will essentially be nutrient neutral, and is managing other contaminant releases from the site from both construction and operational stages, and so does not require consideration of in combination impacts:

"Article 6(3) of the Habitats Directive must be interpreted as not precluding national programmatic legislation which allows the competent authorities to authorise projects on the basis of an 'appropriate assessment'

²⁰ Eastleigh Borough Council *ibid*.

²¹ Natural England (June 2020) Advice on achieving nutrient neutrality for new development in the Solent region, <https://www.push.gov.uk/wp-content/uploads/2020/06/Natural-England%E2%80%99s-latest-guidance-on-achieving-nutrient-neutrality-for-new-housing-development-June-2020.pdf>

²² Urban Edge (2019) Habitats Regulations Assessment: Eastleigh Borough Local Plan, <https://www.eastleigh.gov.uk/media/5477/ed12a-41-hra-main-report.pdf>

within the meaning of that provision, carried out in advance and in which a specific overall amount of nitrogen deposition has been deemed compatible with that legislation's objectives of protection."²³

Table 5.3 Potential impacts of the Development Site, post avoidance measures, on the Solent and Southampton Water SPA, Solent Maritime SAC and Solent and Dorset SPA

Potential Impact	Construction stage	Operation stage
Accidental pollution of contaminants (e.g. hydrocarbons, paints, solvents and other materials used) and discharge into on site/receiving watercourses and transported into the Solent resulting in a reduction in water quality including exposure to substances with chronic or acute consequential effects.	n/a	n/a
Change in nutrient (nitrate and phosphate) emissions from the operation/occupation of the site largely associated with domestic and business generation and application of fertilisers in open spaces minimised or avoided, but with generation of nutrients from urban operations including discharge of treated sewage arising from the development, with potential effects on eutrophication levels in the receiving watercourses and associated features of interest.		√
Recreational disturbance from human and dog walking in areas associated with sensitive bird species, notably with effects on breeding viability. Species associated with this site are: • Black-tailed godwit (<i>Limosa limosa islandica</i>), Non-breeding • Common tern (<i>Sterna hirundo</i>), Breeding • Dark-bellied brent goose (<i>Branta bernicla bernicla</i>), Non-breeding • Little tern (<i>Sternula albifrons</i>), Breeding • Mediterranean gull (<i>Ichthyaetus melanocephalus</i>), Breeding • Ringed plover (<i>Charadrius hiaticula</i>), Non-breeding • Roseate tern (<i>Sterna dougallii</i>), Breeding • Sandwich tern (<i>Thalasseus sandvicensis</i>), Breeding • Teal (<i>Anas crecca</i>), Non-breeding • Waterbird assemblage, Non-breeding		√

5.3.4 Mitigation measures

The impact avoidance measures listed at Table 5.1 will already reduce the impacts of the Development Site with respect to runoff to drains. However, there is remaining uncertainty as to whether new 'in combination' developments, including the Development Site, will further deteriorate water quality at the SPAs/SAC. In addition, Eastleigh Borough Council (EBC) are currently putting in place a land assembly project that will

²³ Case C-293/17 Coöperatie Mobilisation,
<http://curia.europa.eu/juris/document/document.jsf?jsessionid=F082FC3EE493E8545C32C9F456EEB3AA?text=&docid=207424&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=9614661>

provide a permanent Borough wide nitrogen (N) and phosphate (P) mitigation approach. Consequently, it is anticipated that the impacts associated with the development will be fully mitigated by EBCs Strategic Land Parcels offsetting scheme (or similar scheme, such as that run by Hampshire & Isle of Wight Wildlife Trust).

Since March 2018, Natural England has been advising that one means of addressing this uncertainty for larger developments such as the Site, that have the potential to result in increases of nitrogen and phosphates entering a European site, is to calculate a nutrient budget and achieve nutrient neutrality^{24,25}. The tables below present a nitrate calculation for the Site. Information on phosphate budgets has been sourced from the January 2022 Hilson Moran report. In brief:

1. Will the proposed development connect to the mains drainage / sewerage system? Yes
2. Will the proposed development generate wastewater from overnight use? Yes
3. Is wastewater before or after treatment to be discharged into the Solent catchment? Yes. The Site's treated effluent is expected to be discharged to the Portswood wastewater treatment works (WwTW).

5.3.5 Nitrate calculation

Stage 1 Calculate Total Nitrogen (TN) in Kg/pa Derived from the Development that would Exit the Wastewater Treatment Works (WwTW) after Treatment. See Table 5.4 below.

Table 5.4 Stage 1 Calculate Total Nitrogen (TN) in Kg/pa Derived from the Development that would Exit the Wastewater Treatment Works (WwTW) after Treatment

Step	Measurement	Value	Unit	Explanation
Development Proposal	Developments that would increase the population served by a wastewater system	183	Residential	Number of residential units including studio, 1 bed, 2 bed and 3 bed units.
		81	Independent Living	Independent living facility (Use Class C2), assume single person
		136	Hotel	Number of Keys
Step 1	Additional Population	439.2	Persons	Guidance uses an average household size of 2.4 (as calculated by the Office for National Statistics), i.e. 183*2.4 The hotel will be modelled on the 3-star Hampton by Hilton type of hotel. With reference to the The Institute of Plumbing (2002) "Plumbing Engineering Services Design Guide" 19

²⁴ <https://www.push.gov.uk/wp-content/uploads/2020/06/Natural-England%E2%80%99s-latest-guidance-on-achieving-nutrient-neutrality-for-new-housing-development-June-2020.pdf>

²⁵ Parcel 51, in the south-eastern corner of the masterplan, is covered by a separate planning application (Ref. X/19/86475) and so has not been included in the nitrate neutrality calculations.

				and UK daily water demand design data presented in The College of Estate Management document "Grey Water for UK Housing" (2013)²⁰, a 3-star hotel would be anticipated to exhibit a daily potable water use of 150 l/bedroom/day. Similarly, referencing the same document, an elderly care home would be anticipated to exhibit a daily potable water use of 135 l/bed space/day.
Step 2	Wastewater volume generated by development	79,647	Litres/day	The NE guidance states 110 litres per person per day for residential, for hotel and independent living units see above: $(439.2 \times 110) + (136 \times 150) + (81 \times 135)$
Step 3	Receiving WwTW environmental permit limit for TN	27	mg/l TN	No consent limit for Portswood WwTW, so assumed to be a discharge concentration of 27.0 mg/l as per NE Methodology.
Step 4	Deduct acceptable TN loading (@ 2 mg/l TN) as per NE Methodology.	25.0	mg/l TN	27.0 (step 3) – 2.0 mg/l TN (accounting for baseline TN concentration in potable water).
Step 5	TN discharged after WwTW treatment	1,991,175	mg/TN/day	$79,647 \text{ (step 2)} \times 25.0 \text{ (step 4)} = 1,991,175$
Step 6	Convert mg/TN to kg/TN per day	1.99	kg/TN/day	Divide mg/TN/day by 1,000,000
Step 7	Convert kg/TN per day to kg/TN per year	726.8	kg/TN/yr	$1.99 \times 365 \text{ days}$
Step 8	Calculate pre-existing foul sewage N loss	0	kg/TN/yr	No residential or overnight stay present within red line boundary
Step 9	Calculate wastewater total nitrogen load by subtracting pre-existing load from post-	726.8	kg/TN/yr	$726.8 \text{ (step 7)} - 0.0 \text{ (step 8)}$

	development load			
Wastewater total nitrogen load	726.8 Kg/TN/yr			

Stage 2 is to adjust nitrogen load to account for existing nitrogen from current land use, i.e. to calculate the existing nitrogen losses from the current land use within the redline boundary of the scheme. The nitrogen loss from the current land use will be removed and replaced by that from the proposed development land use. The net change in land use will need to be subtracted from or added to the wastewater Total Nitrogen load. See Table 5.5. below.

NE's guidance states:

4.53 Where development sites include wildlife areas, woodlands, hedgerows, ponds and lakes that are to be retained, these areas can either be excluded from the calculation as there will be no change in nitrogen input onto this land, or included with the same nitrogen leaching rate in stage 2 and 3. This approach assumes that if they are adopted as green infrastructure or a wildlife area in the new development, appropriate management can be secured with any planning permission (see next section) to restrict nitrogen loading.

4.54 A similar approach can also be taken for the redevelopment of urban land as the nitrogen leaching rate would be 14.3 kg/ha in stage 2 and 14.3 kg/ha in stage 3. If there is no change in site area, these areas can be excluded from the calculation.

Table 5.5. Adjust nitrogen load to account for existing nitrogen from current land use

Step	Measurement	Value	Unit	Explanation
1	Total area of urban land	14.34	Hectares	This is the net area of existing urban development land that will remain unchanged with regard to land use classification as a result of the development comprising the entire site area.
2	Identify land type and confirm nitrate loss	14.3	Kg/ha/yr	Urban land

3	Multiply area by nitrate loss	205.1	Kg/ha/yr	14.34 x 14.3 kg/N/yr
N load from current land use		205.1 kg/N/yr		

The next stage ('Stage 3 Adjust nitrogen load to account for land uses with the proposed development), is to add in the nitrogen load that will result from the new development that is not received by a WwTW. This includes the nitrogen load from the new urban development and from the new open space including any Suitable Alternative Natural Greenspace (SANG), Nature Reserves, or Bird Refuge Areas as identified within the redline boundary of the scheme. The calculation only includes the areas of the site where there will be a change in land use, for example from agricultural land to new urban development or agricultural land to Suitable Alternative Natural Greenspace (SANG) / open space. Where there is no proposed change to land use, this land should be excluded from the nitrogen budget as there will be no change to the nitrogen load from this area. Recommended loads are:

- Urban land 14.3kg/N/yr
- Open space/SANGs 5kg/N/yr

Small areas of open space within the urban fabric, such as road verges, gardens, children's play areas and other small amenity areas, should not be included within this category. The urban development figure is appropriate for these land uses. See Table 5.6 below.

Table 5.6 Adjust nitrogen load to account for land uses with the proposed development

Step	Measurement	Value	Unit	Explanation
1	New urban area	14.34	Hectares	Site footprint, which will continue to be used for "urban development"
2	N load from future urban area	205.1	Kg/N/yr	14.34 x 14.3
3	New SANG/OS	N/a	Ha	New OS/SANG
4.	N load from new OS/SAN	N/a		Ha x 5.0
5.	Combine nitrogen load from future land uses	205.1	Kg/N/yr	
N load from from future land use		205.1 kg/N/yr		

The last stage (Stage 4 Calculate the net change in the Total Nitrogen load that would result from the development) is to calculate the net change in the Total Nitrogen load to the Solent catchment with the

proposed development. This is derived by calculating the difference between the Total Nitrogen load calculated for the proposed development (wastewater, urban area, open space etc) i.e. 726.8 kg/TN/yr and adding the net change in nitrogen from land use change - subtract existing land uses nitrogen load (205.1) from future land uses nitrogen load (205.1) i.e. $726.8 + 0 = 726.8$ kg/TN/yr. A 20% buffer is added as per NE guidance to arrive at the final TN figure, see Table 5.7 below.

Table 5.7 Stage 4 Calculate the Net Change in the TN Load that would Result from Development

Step	Measurement	Value	Unit	Explanation
Natural England recommends that a 20% precautionary buffer is built into the calculation	Nitrogen budget without buffer	726.8	kg/TN/yr	
	Divide Nitrogen budget without buffer by 5	145.36	kg/TN/yr	$726.8 / 5$
	Identify Nitrogen Buffer with 20% buffer	872.2	kg/TN/yr	Add 145.36 to 726.8
Nitrogen Budget with 20% Buffer (Rounded to 1 d.p.)	872.2 kg/TN/yr			

5.3.6 Phosphate calculations

In terms of phosphate calculations, the inputs and outputs of the Herefordshire Council Phosphate Budget Calculator Tool are presented in Appendix 7 of the January 2022 Hilson Moran report. Including a 20 % precautionary buffer as recommended by NE, it is estimated using the Herefordshire Council Phosphate Budget Calculator Tool that the total amount of P associated with the proposals to aim to mitigate = 162.78 kg TP/year.

5.3.7 Mitigation

Mitigation for nutrient impacts is discussed and set out in Section 4 of the January 2022 Hilson Moran report. In summary:

- The use of 'soft SuDS', such as swales, detention basins and the de-culverting of the existing Telegraph Brook to provide a two-stage channel, with restored floodplain and the potential for new wetland habitats, as surface water flooding mitigation measures. Although not quantified at this stage, these new stormwater attenuation/conveyance features and floodplain habitats will help to remove N and P from site runoff (as well as sediment), and in terms of the de-culverted Telegraph Brook, could be used to reduce nutrient existing nutrient loadings in the brook itself;
- EBC are currently putting in place a land assembly project that will provide a permanent Borough wide N (and P) mitigation approach. Consequently, it is anticipated that the **872.2 Kg/TN/yr** loss associated with the development will be fully mitigated by EBCs Strategic Land Parcels offsetting scheme (or similar scheme, such as that run by Hampshire & Isle of Wight Wildlife Trust);

- EBC currently state that they possess 3,633 N credits (1 credit = 1 kilogram of nitrates per year) across 78.5 hectares of council-owned land. The cost per credit is £3,000 + VAT and they will also require an undertaking for their legal and administrative costs. As such, to fully mitigate the N-loss associated with this scheme, will require a financial contribution in the order of £3,000 x 872.2 Kg/TN/yr = **£2,616,600**;
- This financial contribution may be reduced if on-site reduction in N and P loss can be demonstrated through the sympathetic design of on-site SuDS and other wetland features highlighted in the Hilson Moran report;
- Furthermore, there will be opportunities to minimise N and P inputs associated with the land management of both the golf course, soft landscaping and potentially the cricket grounds, through the application of best practice measures;
- A range of land management best practice recommendations are presented in the Hilson Moran report to minimise N and P loadings during the construction and operational phases of the scheme;
- Consequently, the N impacts of the proposals will be fully mitigated and P losses minimised in order to ensure that they do not detrimentally affect local biodiversity or the conservation status of the downstream European Designated Sites.

Therefore, it is concluded that no likely significant effects associated with water quality on the Solent and Southampton Water SPA, Solent Maritime SAC and Solent and Dorset SPA will occur.

5.4 RECREATIONAL IMPACTS (SOLENT AND SOUTHAMPTON WATER SPA, SOLENT MARITIME SAC, SOLENT AND DORSET SPA)

5.4.1 Background

The Solent coast, particularly its mudflats, shingle and saltmarshes, provide essential winter feeding and roosting grounds for birds that spend the winter here. The Solent and Southampton Water SPA is designated for its feeding and roosting estuarine birds. The Solent and Dorset SPA is designated for breeding terns using shingle and other habitats.

However, a wide range of recreational activities which take place on the Solent coast can disturb birds, both breeding and wintering. Birds may need to be more alert, reducing the amount of food that they eat. They may move away from the disturbance, reducing their feeding time and using energy to fly. Substantial disturbance may cause food-rich areas to be little used by the birds or avoided altogether, leading to other areas hosting a higher density of birds and intensifying the competition for the available food. Cumulatively this can lead to increased bird mortality, or to a bird having less energy available at the end of the winter period to fly back to its breeding grounds. If birds cannot complete their migratory journey or are not in sufficiently good condition to breed when they arrive, then the bird population can drop²⁶.

Research carried out in 2009-2013 found that by far the most popular activity taking place at the Solent coast is walking. Along with jogging and cycling, this accounted for 91% of all recreational activity. Other types of recreational use included surfing, horse riding and rowing. Dogs off lead accounted for 47% of all incidents where birds flew more than 50m to escape disturbance. The research predicted a 13% increase in visitor numbers to the Solent coast as a result of planned new housing²⁷.

The Solent Recreation Mitigation Strategy undertakes measures to reduce impact of recreation and people on SPA birds and is funded by 'developer contributions' calculated according to the bedroom numbers of the development, equivalent to an average of £564 per dwelling (increased annually to take into account inflation). This applies to new homes built within 5.6 kilometres of the SPAs. This 5.6 kilometre zone is where the majority of coastal visitors live. Some developments may require additional mitigation due to their size or proximity to a SPA.

Suitable alternative natural greenspace (SANGs) located away from the European site can draw users away from the European sites by providing comparable alternative facilities, especially for dog walkers. However, SANGs need to be tailored to provide a viable and attractive alternative destination, matching the draw of the relevant designated European site or providing a near-equivalent recreational experience in a more convenient location. This may be difficult to do for estuarine sites like the Solent and Southampton SPA,

²⁶ Bird Aware Solent (2017) Solent Recreation Mitigation Strategy, https://solent.birdaware.org/media/29372/Bird-Aware-Solent-Strategy/pdf/Solent_Recreation_Mitigation_Strategy.pdf

²⁷ Ibid.

Solent Maritime SAC and Solent and Dorset SPA. This is because many people who visit the Solent coast do so for the sea views and the feeling of 'being beside the sea'. In a survey of visitors to the Solent, one-third of respondents stated that nothing could be done to make an alternative site more attractive to them²⁸.

5.4.2 Impact of the Development Site

The Development will include an extensive network of footpaths and play/sports facilities as part of the scheme, both within the developed areas and as green infrastructure across the site to provide easy local access to outdoor recreational facilities and to deliver on site recreational capacity for the new residents. This includes a 2.5km SANG to cater for informal access, recreation and dog walking in the adjacent Telegraph Woods. Figure 5.1 shows this network and Figure 5.2 shows the proposed SANG. This should cater for many day-to-day walking and cycling journeys of new residents, although some will still want to visit the SPAs and SAC, and other nearby European sites for coastal walks and water based recreational pursuits. The new recreational provision at Ageas Bowl may also draw some nearby residents who currently visit the SPAs/SAC, thus further lessening the recreational impact of the new development on European sites.

Figure 5.1 Masterplan showing open space network at the Development Site.

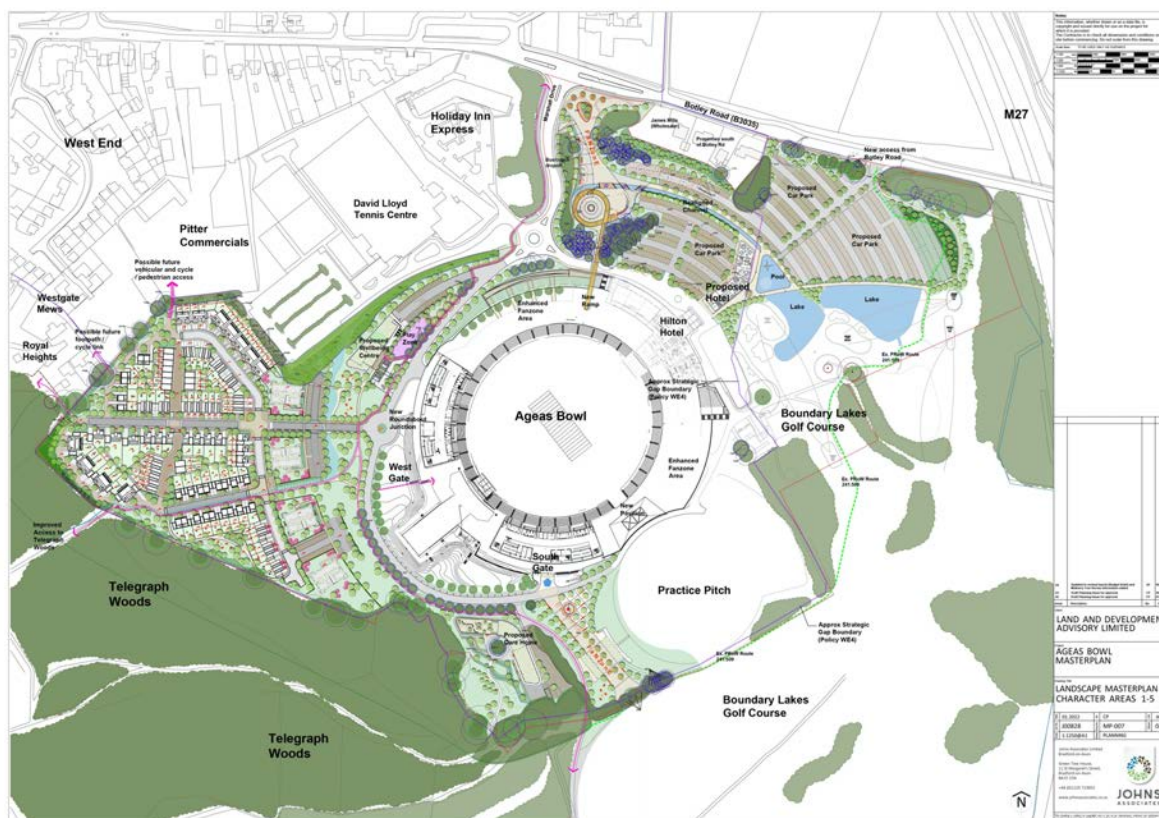


Table summarises how the recreational facilities planned for the Site fill the SANGs locational criteria set out

²⁸ Ibid.

in Appendix B of the Solent Recreational Mitigation Strategy (Bird Aware Solent, 2017)²⁹.

The design of the on-site recreational provision aims, as far as possible, to fully deal with the whole site's recreational impacts on the Solent SPAs/SAC/Ramsar and New Forest SPA/Ramsar/SAC recreational impacts. Subject to on-going negotiations with Natural England, should the on-site provision not be suitable to fully off-set recreational impacts to the Solent, then the payment to the Bird Aware scheme would be provided.

²⁹ [https://solent.birdaware.org/media/29372/Bird-Aware-Solent-Strategy/pdf/Solent Recreation Mitigation Strategy.pdf](https://solent.birdaware.org/media/29372/Bird-Aware-Solent-Strategy/pdf/Solent%20Recreation%20Mitigation%20Strategy.pdf)

Table 5.8 SANGs Location Criteria

Criterion	Site information
A wholly new site or an enhancement of existing public open space if the site is currently underused and has substantial capacity to accommodate additional recreational activity or could be expanded, considering the availability of land and its potential for improvement;	The proposed SANGs route will be located on publicly accessible and EBC owned site, Telegraph Woods, except for the existing PRow located within the site.
Be in a location where it will divert visitors especially dog walkers away from sections of SPA coast which are sensitive to additional human disturbance and where a significant increase in visitors is predicted;	The routes will provide an accessible, convenient option for residents for dog walking and recreational use, in close proximity to residential properties. However, given the woodland site already exists as publicly open space, the reduction would only be slight in terms of diverting other (non resident) visitors.
Be located where it will attract visitors who would otherwise have gone to those sections of coast	
Be large enough to include a variety of paths which enable at least one circular walk of at least 5 km (approx. a 60 min walk);	The Proposed Development will include a network of foot and cycle routes making full use of the amount of public open space proposed across and adjacent to the Site. These routes include a specific 2.5km SANGs route.
Be in a location where a SANG would be acceptable in terms of planning policy and traffic generation, and would not have an unacceptable impact on biodiversity e.g. A nature conservation site protected under a local or national designation;	Telegraph Woods is a Site of Importance for Nature Conservation (SINC).
Be sufficiently large to be perceived as a cohesive semi-natural space, offering tranquillity, with little intrusion of artificial structures (except in the immediate vicinity of car parks) and with no unpleasant intrusions of other kinds e.g. wastewater treatment odours	Telegraph Woods is a large 20.37ha woodland with a sense of tranquillity.

The Development falls wholly within the Solent Mitigation and Disturbance Zone. If payment is required, then the cost would be £102,389. Estimated figures are shown in Table 5.9 Estimated Contribution:

Table 5.9 Estimated Contribution to Solent Mitigation Zone

		No.	Bedroom £	Total £
Flat	1 Bed	64	£356	27,784
	2 Bed	16	£356	5,840
House	2 Bed	18	£514	9,252
	3 Bed	64	£671	42,944
	4 Bed	21	£789	16,569
Total				£102,389

5.4.3 In combination impacts

It is not necessary to consider 'in combination' impacts for this issue assuming that the proposed Development is committing to a payment in relation to the Solent Bird Aware strategy³⁰.

5.4.4 Conclusion of appropriate assessment re. recreational impacts to Solent and Southampton Water SPA, Solent Maritime SAC and Solent and Dorset SPA

The high quality green infrastructure on and immediately adjacent to the Site, characterised by extensive woodland and other habitats together with the connected wider Public Right of Way Network provides an extensive resource for walking, exercising dogs and other recreational activities that will be both immediately available and of value to the new residents of the proposed Development. However, any residual recreational pressure will be fully mitigated through the provision of an appropriate payment to the Solent Bird Aware scheme.

5.5 RECREATIONAL IMPACTS (NEW FOREST SPA, SAC AND RAMSAR)

5.5.1 Background

The New Forest SAC/SPA/Ramsar hosts a range of breeding heathland birds that are sensitive to disturbance. Ground and near-ground nesting birds such as the Dartford warbler, nightjar and woodlark are particularly sensitive. The breeding success of nightjar is significantly lower close to paths, and nightjar populations decrease with proximity of housing. Dartford warblers in heavily disturbed areas delay the start of their breeding, preventing multiple breeds. Most of this disturbance is from dogs running through vegetation. Removal of human disturbance results in an increase of 13 – 48% in the breeding population of woodlark. Other impacts from visitor pressure include arson, litter and fly-tipping, trampling and soil compaction, localised nutrient and predation by people and pets.³¹ In addition, consideration needs to be given to localised nutrient increased from dog urine/faeces and emissions to air and associated deposition from road traffic.

The New Forest National Park received 15.2 million recreation and leisure visitor-days (one person coming for at least part of one day) in 2017³². A telephone survey of 2000 people – including 138 from Eastleigh Borough – was carried out in late 2018 to investigate factors that lead to tourism visits to the New Forest. It found that 75% of visitors live within 13.8km of the New Forest. Of the 138 interviewees from Eastleigh:

- About two-thirds (64%) had visited the New Forest heaths and woods in the past year
- The proportion of people visiting the New Forest, and the number of visits, declined the further people lived from the New Forest, as did the proportion of visits to the New Forest compared with other green space locations
- The most common frequency of visits from people living 10-25km away was less than once a month,

³⁰ <https://solent.birdaware.org/strategy>

³¹ Urban Edge (2019) Habitats Regulations Assessment for the Eastleigh Borough Local Plan 2016-2036, <https://www.eastleigh.gov.uk/media/5477/ed12a-41-hra-main-report.pdf>.

³² <https://www.newforestnpa.gov.uk/conservation/managing-recreation/future-forest/recent-changes-affecting-forest/>

followed by once a month

- The most common activity carried out by interviewees in the New Forest was walking and dog walking. The proportion of dog walking generally declined with distance, but dog walkers tended to visit more frequently than other users.³³

For Eastleigh residents the top four reasons for visiting the New Forest were:

1. Habit / familiarity / previous experience
2. Quick and easy travel route / en route
3. Choice of routes and
4. Scenery/variety of views.

Greenspaces nearer to where people live are likely to act as alternatives for at least some visits to the New Forest, including for existing residents. This is particularly the case if they can replicate some of these attractions such as providing a network of routes, and if they are more convenient and offer other facilities or reasons to visit.

5.5.2 Impact of the proposed Development

The Site lies approximately 10 km east of the New Forest at as the crow flies, but it takes about 23km to drive there, as Southampton Water is between the Site the New Forest. The proposed Development will have 183 residential units (plus 136 bed hotel and 81 bedroom independent living facility) (estimated 439 residents from the housing) when completed. Some of these residents are likely to visit the New Forest SPA/SAC/Ramsar site and could cause effects through:

- Recreational disturbance and habitat degradation e.g. erosion/poaching from human and dog walking in areas associated with sensitive bird species, notably with effects on breeding viability.
- Change in nutrient status in localised areas and change in associated habitat condition from dog urine/faeces and emissions to air and deposition from road traffic

5.5.3 In combination impacts

By 2037, the New Forest is expected to receive over 17 million recreational visitor days, up from 15.2 million currently³⁴. Eastleigh Borough Council calculates that, over the lifetime of the Local Plan 2016 – 2036, there will be an additional 27,994 recreational visits from new council residents to the New Forest every year³⁵. Some of these will be from the proposed Development and as such in-combination effects may occur.

5.5.4 Mitigation measures

As discussed in Section 5.4.2, the proposed Development will provide significant on-site recreational resources, designed using approved SANGs criteria. A SANGs network from the Site through and around

³³ Eastleigh Borough Council (2019) Eastleigh Borough Local Plan 2016-2036, Interim New Forest Recreation Mitigation, <https://www.eastleigh.gov.uk/media/5479/ed12c-update-44-new-forest-interim-mitigation.pdf>

³⁴ <https://www.newforestnpa.gov.uk/conservation/managing-recreation/future-forest/recent-changes-affecting-forest/>

³⁵ Ibid.

Telegraph Wood will provide a route of 2.5 km through mature and varied woodland (varied topography, open glades with wet mires etc). Natural England updated its SANG guidance in August 2021.

The draft proposal for the SANG is shown in Figure 5.2 below.

Figure 5.2 Proposed SANG adjacent to Site

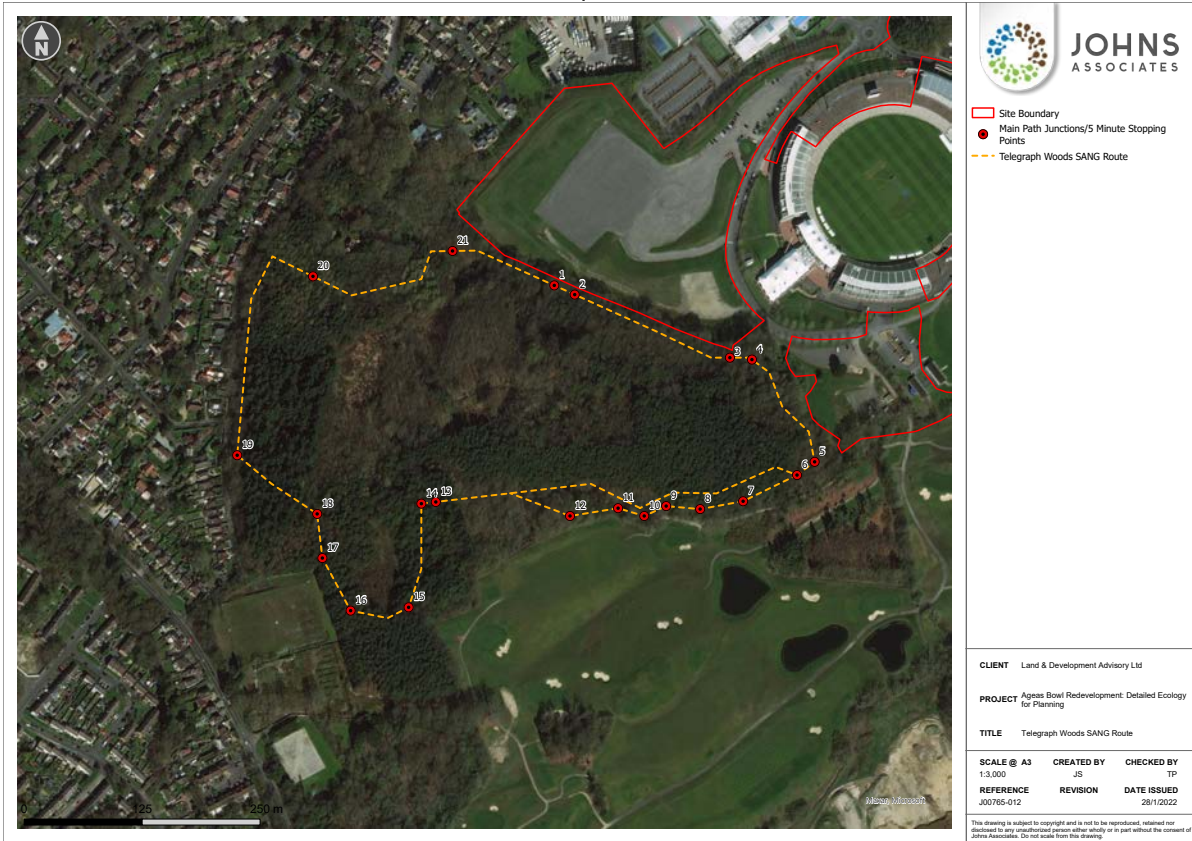


Table 5.10 below sets out how SANGs on site including Telegraph Wood meets the SANG criteria.

Table 5.10 SANGs Location Criteria NE August 2021

Criterion	Site information
Must haves	

For all sites larger than 4ha there must be adequate parking for visitors, unless the site is intended for local use, i.e. within easy walking distance (400m) of the developments linked to it. The amount of car parking space should be determined by the anticipated use of the site and reflect the visitor catchment of both the SANG and the SPA. Car parks must be easily and safely accessible by car and should be clearly sign posted.	The proposed housing is located immediately adjacent to the SANG at Telegraph Woods with easy access. Current plans show major car parking for the sports facilities about 400m to east on other side of Ageas Bowl. In addition, there is parking for visitors to Telegraph Woods along Telegraph Road around SU 47053 13721.
Possible to complete a circular walk of 2.3-2.5km around the SANG.	A draft circular walk from the Site through Telegraph Woods has been mapped and documented by Johns Associates and measures in excess of 2.5km.
The accessibility of the site must include access points appropriate for the visitor use the SANG is intended to cater for. The SANG must have a safe route of access on foot from the nearest car park and/or footpath/s All SANG with car parks must have a circular walk which starts and finishes at the car park.	Site is already used by walkers. Access routes are safe. This is possible based on the draft Johns documentation.
SANG must be designed so that they are perceived to be safe by users; they must not have tree and scrub cover along parts of the walking routes. Paths must be easily used and well maintained but most should remain unsurfaced to avoid the site becoming too urban in feel. SANG must be perceived as semi-natural spaces with little intrusion of artificial structures, except in the immediate vicinity of car parks. Visually sensitive way-markers and some benches are acceptable.	Parts of the walk would be open, other parts in woodland – paths would be through open woodland. Paths are unsurfaced. Telegraph Woods is a Site of Importance for Nature Conservation (SINC). No artificial structures are present.
All SANG larger than 12 ha must aim to provide a variety of habitats for users to experience.	Telegraph Woods total area around 17ha. The woodland contains a mixture of woodland types, open glades areas with wet mire.

Access within the SANG must be largely unrestricted with plenty of space provided where it is possible for dogs to exercise freely and safely off lead.	Yes.
SANG must be free from unpleasant intrusions (e.g. sewage treatment works smells etc).	Yes.
Should have	
SANG should be clearly sign-posted or advertised in some way. SANG should have leaflets and/or websites advertising their location to potential users. It would be desirable for social media to be used as well, with the goal of reducing paper use. Although a leaflet for a new home is desirable.	Will be – already advertised on Woodland Trust website.
Desirable	
It would be desirable for an owner to be able to take dogs from the car park to the SANG safely off the lead.	Residents of the proposed housing will be able to do this.
Where possible it is desirable to choose sites with a gently undulating topography for SANG	Yes – woodland has undulating topography.
It is desirable for access points to have signage outlining the layout of the SANG and the routes available to visitors.	Yes
It is desirable that SANG provide a naturalistic space with areas of open (non-wooded) countryside and areas of dense and scattered trees and shrubs. The provision of open water is encouraged and desirable on sites. However large areas of open water cannot count towards capacity.	Is a variety of habitats in the wood like a smaller version of New Forest – are ponds, open areas with wet mires etc.
Where possible it is desirable to have a focal point such as a viewpoint, monument etc within the SANG.	The Ageas Bowl Stadium is a strong focal point of interest immediately adjacent to the proposed SANG.

The above SANG will reduce the need for most day-to-day recreational journeys of the type made to the New Forest. The recreational provision at the proposed Development site may also attract some residents from the vicinity who might otherwise have visited the New Forest. The number of new journeys to the New Forest sites as a result of the Proposed Development will be very limited but cannot be completely discounted due to the inherent attraction of the area and for secondary activities such as visiting pubs and cafes.

The Eastleigh Borough Council's Interim New Forest recreation mitigation strategy³⁶ takes 20km as the distance within which recreational disturbance could occur but does not specify how the impacts on the New Forest can be resolved. It notes that:

'Mitigation can include measures within boroughs to provide and improve alternative locations to the New Forest and measures within the New Forest to manage access within designated sites and promote alternative sites and routes outside designated sites. Contributions may also be used for education, awareness and monitoring... The following measures are likely to be appropriate in Eastleigh borough:

New open space within or adjoining development ...and SGO developments... (SANGS)

Improvements to routes and existing open spaces in Eastleigh borough – linking up areas to create longer routes, physical and access improvements to routes, improved facilities within open spaces such as dog waste bins, dog exercise areas and seating, signage, information boards, providing facilities for dog walkers; and

Where appropriate, contributions to measures within the New Forest with funding sought from national sources – to fund access management, rangers, education and awareness projects'.

The interim mitigation strategy is being updated and fine-tuned in discussion with the Ecological Steering Group (see note in Appendix A). EBC has commissioned further research to investigate several issues³⁷, which will affect the mitigation measures required for development sites in the Borough, including:

- Is it appropriate to use the data for all visits (rather than day trips from home) when considering the approach to mitigation for development in Eastleigh Borough Council? For Eastleigh, fewer than 3% of visitors surveyed were staying away from home (as opposed to visiting on a day trip), compared to 17% of all interviewees.
- Is it appropriate to use the data reflecting the distance that 75% of the visitors of the survey travelled to the New Forest as the basis for the catchment area for contributions? The survey picked up a few people who had travelled long distances (hundreds of miles) on a day visit. The Bird Aware Solent Mitigation Strategy and other strategic mitigation schemes use the 75% distance to determine the catchment area. The strategic approach needs a cut off and this appears an appropriate catchment in line with other strategies. However, this will be skewed by the small number of people travelling long distances.
- Is it appropriate to use a straight-line distance ('as the crow flies') as used by the research, or whether to take into consideration the barrier to travel posed by Southampton Water? Some parts of Eastleigh

³⁶ Ibid., consistent with the New Forest National Park Recreation Management Strategy 2010 -2030, <https://www.newforestnpa.gov.uk/app/uploads/2019/12/RMS-TOWEB.pdf>

³⁷ A draft of their findings is due mid-December

Borough are treated as being within 5km from the New Forest protected areas to the west of Hythe and Fawley, and all areas except the north of the borough are treated as being within 13.8km, whereas a travel time would significantly reduce this.

5.5.5 Conclusion of Appropriate Assessment re. Recreational Impacts to New Forest SPA/SAC/Ramsar

The provision of significant on-site recreational resources, designed to meet SANG criteria, within Telegraph Woods and the remaining high quality green infrastructure at the Development Site, provides an extensive resource for walking, exercising dogs and other recreational activities that will be both immediately available and of value to the new residents of the Site. These on-site facilities will help limit the number and frequency of visits to the New Forest SPA/SAC/Ramsar, reducing the magnitude of any disturbance to features of interest that are sensitive to recreational disturbance.

5.6 AIR QUALITY IMPACTS (RIVER ITCHEN SAC, NEW FOREST SPA SAC AND RAMSAR)

5.6.1 Background

Natural England have issued guidance on assessing road traffic emissions under the Habitat Regulations³⁸ which recommends a five step approach.

5.6.2 Impact of Proposed Development

Step 1: Does the proposal give rise to emissions which are likely to reach a European site? Key issue is whether any roads used by traffic generated by the development either in construction or operation are within 200m of a European site. Traffic (construction and operational) from the Development is likely to generate increases on the A27 and M27 where they cross River Itchen SAC, Solent Maritime SAC and Solent and Dorset Coast Maritime SPA.

Step 2: Are the qualifying features of sites within 200m of a road sensitive to air pollution? From the APIS website, the Solent Maritime SAC habitats are sensitive to air pollution.

Step 3: Could the sensitive qualifying features of the site be exposed to emissions? Habitats that are susceptible to air pollution occur within 200m of the crossing points.

Step 4: Application of screening thresholds. The Development would not, in isolation, generate an increase in average annual daily traffic flows of 1000 vehicles or more (or 200 or more increase in HGVs on motorways). Traffic modelling for the two crossing points over the River Itchen SAC (M27 and A27) is set out in Table 5.11 below. Where the M27 and A27 cross the River Itchen SAC, the development will result in an increase of 478 vehicles AADT for M27 and 847 vehicles for the A27 (for 2027). Traffic modelling for the two crossing points over the River Hamble (M27 and A27) is also set out in Table 5.11 below. Where the M27 and

³⁸ Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations Version: June 2018

A27 cross the Solent Maritime SAC, the development will result in an increase of 477 vehicles AADT for M27 and 75 vehicles for the A27 (for 2027). HGV traffic numbers for construction and operational use are not significant³⁹.

Table 5.11 Traffic modelling

Location	2019 AADT baseline	2027 AADT	2027 AADT (+ Development in brackets)	Increase in AADT from Development	Total increase 2019-2027 including development
M27 (North of J7) EB (Between Junction 7 and 5)	65,326	73,128	73,270	142	7,944
M27 (North of J7) WB (Between Junction 7 and 5)	65,439	73,254	73,590	336	8,151
A27 Mansbridge Road EB	7,941	8,890	9,318	428	1,377
A27 Mansbridge Road WB	7,531	8,431	8,850	419	1,319
Providence Hill NB	7,189	8,048	8,085	37	896
Providence Hill SB	7,455	8,346	8,384	38	929
M27 (South of J8) EB (Between Junction 8 and 9)	54,610	61,132	61,468	336	6,858
M27 (South of J8) WB (Between Junction 8 and 9)	54,473	60,979	61,120	141	6,647

5.6.3 In Combination Assessment

Step 4b: apply the threshold in-combination with emissions from other road traffic plans and projects and Step 4c: apply the threshold in-combination with emissions from other non-road plans and projects

The above traffic modelling includes increases due to other plans and projects between 2019 and 2027.

In-combination with other traffic increases, rather than specific projects or plans (see table above), traffic increases between 2019 and 2027 will go over the 1000 AADT threshold for all four roads/ crossing points.

Step 5: Advise on the need for Appropriate Assessment where thresholds are exceeded, either alone or in-combination

³⁹ Ageas Bowl Air Quality Assessment. WSP. May 2022. Project 70073579, ref 001.

Appropriate Assessment would be required given that in-combination with other traffic increases, rather than specific projects or plans (see table above), traffic increases between 2019 and 2027 will go over the 1000 AADT threshold for all four roads/ crossing points.

The WSP methodology for calculating the in-combination traffic data was highly conservative. The WSP report states:

It should be noted that for this worst case 'in- combination' scenario the predicted changes are considered to be highly conservative. If you take into account improvements in vehicle emissions and backgrounds concentrations, there is predicted to be decreases in NOX concentrations which equate to between 272.0 % and 21.3 % of the Critical Level.

The worst case changes in nutrient N deposition 'in-combination' with other plans and projects are above 1% of the relevant CL at locations within the Solent and Southampton Water Ramsar/SPA, the River Itchen SAC, River Itchen SSSI, Moorgreen Meadows SSSI, Chessel Bay LNR, Netley Common LNR, Wildern LNR, several AW sites and the Telegraph Woods SINC. Again, the changes are considered to be highly conservative and when improvements in vehicle emissions and backgrounds are taken into account, predicted decreases in nutrient N deposition are predicted at all receptors. These decreases range between 18.2% and 7.2% for the grassland habitats and 44.4 % to 25.3 % for the woodland habitats.

The changes in annual mean NH3 are above 1% at several locations with the ecologically designated sites when considering the impacts of both the Proposed Development 'in-combination' scenarios, this occurs as both background and road traffic emissions of NH3 are predicted to increase in the future. Increases are predicted to be 1 % (or more) of the relevant Critical Level and above the Critical Level within the River Itchen SAC, within the Moorgreen Meadows SSSI and within one of AW sites.

Therefore, with predicted improvements in vehicle emissions and backgrounds, impacts are predicted not to be significant.

In addition, the Ageas Bowl area was allocated for development within the previous versions of the Local Plan, which considered the potential 'in-combination' impacts of this Site with others in the area. The HRA for the Local Plan reached the following conclusions:

- Significant effects through atmospheric pollution are not likely for Solent Maritime SAC or Solent and Southampton Water SPA/Ramsar, either alone or in combination with other plans and projects.
- There will be no adverse effect on the integrity of River Itchen SAC as a result of atmospheric pollution, either alone or in combination with other plans and projects.

Therefore, we consider that the Local Plan HRA adequately addresses -in-combination air quality issues.

5.6.4 Mitigation Measures

The contribution of the Development site to increased traffic flows through to 2027 is marginal and the 2027 increases represent the in combination effect of traffic growth associated with all planned development for South Hampshire. The Eastleigh Local Plan (which included the Development site) HRA ruled out in-combination effects from traffic air pollutants on relevant European Sites.

Nevertheless, a range of sustainable transport solutions will be employed at the Development to both reduce the need to travel and to travel by more sustainable options. The Site's Sustainable Transportation Plan includes measure to encourage more sustainable transport choices particularly walking and cycling. The proposed development is an existing urban fringe area which is served by 30 minute interval local bus links to the city centre.

A Transport Assessment (TA) and Framework Travel Plan have been produced by transportation consultant WSP to accompany the planning application. The Travel Plan aims to create a more sustainable, community-driven environment for all residential users; and to discourage car ownership and visitors to adopt more sustainable travel choices. It will also include a fossil fuel-free strategy across the entire master plan including electric charge points.

6 CONCLUSION

In conclusion, this HRA has shown that the proposed Development is unlikely to have significant impacts, either alone or in-combination with other plans and projects, on the integrity of any European site, pending final discussions concerning the need to financially contribute towards visitor management at the Solent and New Forest sites.

Appendix A. Email from Dawn Heppell, Eastleigh Council, Senior Business Planning Officer (Local Plan) to Christopher Roberts, Boyer Planning 2nd Nov 2021.

Chris

Graham Tuck passed your query onto me to address. The Council have been involved in a partnership of local authorities within and close to the New Forest protected areas. The partnership was set up to address the recreational impacts from residents of new development. The first phase of addressing this was to improve the evidence base to determine the extent of the impact and the partnership commissioned Footprint Ecology to undertake research on this, published on this New Forest NPA webpage. The partnership is now considering how to progress to a strategic framework that reflects the differing impacts from new development across the area. This will also help to facilitate financial contributions to mitigation measures in the New Forest itself. While this is being developed, we are considering the interim approach for the borough.

EBC has been working with Natural England (with input from Footprint Ecology) on a methodology to assess exactly how many visits we need to mitigate and to work out an appropriate package of mitigation to address this impact. This work is still ongoing but we have Cabinet approval to develop this mitigation which will include both SANGs within the borough and financial contributions towards measures implemented by the New Forest National Park Authority (see Cabinet report, September 2021). We plan to take a package of mitigation with locations for SANGs, designs and costings back to Cabinet early next year.

Natural England have advised that SANGs could include both improvements to existing areas to increase their visitor capacity and expansion into additional land not currently in this use. We are therefore looking at the scope for improvements to land within the Council's ownership, including opportunities for Itchen Valley Country Park. We are also considering how developers could contribute to the delivery of SANG and this will be set out in the next Cabinet report. In addition to contributing to the Council scheme, there may be scope for improvements to other areas such as Telegraph Woods. We've previously collected contributions for the provision of public access to Home Wood and its management from the North Stoneham Park development and similar improvements may be possible at Telegraph Woods. These improvements would need to meet the Natural England SANG criteria and therefore provide an alternative to travelling to the New Forest for recreation. These criteria include the provision of footpath routes which are safe and well maintained and include circular routes and the provision of appropriate levels of car parking while retaining the perception of the area as a semi-natural space.

I hope this helps clarify the approach. As stated above, we are in the process of working out the methodology and colleagues are involved in determining the extent of mitigation to be required and the projects that address this. I'm on leave for the rest of this week but could meet on Teams next week if this would be helpful.

With regards

Dawn

Dawn Heppell
Senior Business Planning Officer (Local Plan)
Strategy - Strategic Planning