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GLADMAN DEVELOPMENTS LTD

LAND OFF ST MARY'S ROAD, HAYLING ISLAND

ENVIRONMENTAL STATEMENT

NOVEMBER 2025

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1 INTRODUCTION

- 1.1.1 This Environmental Statement (ES) has been prepared on behalf of Gladman Developments Ltd. (the Applicant) to support an outline planning application with all matters reserved except for means of access for the development of up to 300 dwellings (hereafter referred to as the 'Proposed Development') on land off St Mary's Road, Hayling Island. The Site is located within the administrative area of Havant Borough Council (HBC).
- 1.1.2 The Site is centred at approximately National Grid Reference (NGR) SZ 71920 99784 and is located off St Mary's Road amongst existing residential development in the southern part of Hayling Island, Hampshire, as illustrated on the Site Location Plan included at Appendix 1.1. The land included within the application redline boundary, to which the planning application relates, is hereafter referred to as 'the Site'.
- 1.1.3 The Site is 11.77 hectares (ha) in size and is currently in agricultural use, comprising of two agricultural fields and an area of grassland containing a building and pond.
- 1.1.4 This ES reports the findings of an Environmental Impact Assessment (EIA) that has been undertaken in accordance with the criteria set out in the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations') in respect of the Proposed Development.
- 1.1.5 This EIA is based on the development parameters set out in Chapter 4 and illustrated on the Parameters Plan included at Appendix 1.2.
- 1.1.6 A Non-Technical Summary (NTS) has been prepared as a separate, stand-alone document that provides a summary of this ES in non-technical language.

1.2 Planning Background

- 1.2.1 An outline planning application (APP/17/00007) was submitted in December 2016 for the erection of up to 210 residential dwellings (including affordable housing) and 0.6 ha for apartments with care (C2), structural planting and landscaping, informal public open space, children's play areas, SuDS vehicular access from St Mary's Road and associated ancillary works. This application was subsequently refused by HBC in April 2017.

- 1.2.2 During the determination period for the above application, HBC provided the Applicant with an EIA Screening Opinion in March 2017, which stated that the Proposed Development was considered to be 'EIA Development'. A Scoping Opinion request was submitted to HBC in October 2017 and subsequently HBC issued a Scoping Opinion in November 2017.
- 1.2.3 Due to the changes made to the design of the Proposed Development and the time that had elapsed since this earlier Scoping Opinion was received, an additional formal request for a Scoping Opinion was submitted to HBC in August 2021 and HBC's subsequent response was received in September 2021.
- 1.2.4 An outline planning application (APP/21/01434) was submitted in December 2021 for development of up to 300 dwellings (including affordable housing). The proposal included the provision for structural planting and landscaping; informal public open space; children's play areas; sustainable drainage system (SuDS); a new vehicular access from St Mary's Road; and associated ancillary works. An ES was submitted to support the application (hereafter referred to as the December 2021 ES).
- 1.2.5 The above application (APP/21/01434) is currently being determined.
- 1.2.6 This ES supersedes the December 2021 ES.

2 APPROACH AND SCOPE

2.1 Introduction

- 2.1.1 Wardell Armstrong LLP (part of SLR) is committed to the delivery of effective practice in EIA. As a registrant of the Institute of Sustainability and Environmental Professionals (ISEP) (formerly the Institute of Environmental Management and Assessment (IEMA)) EIA Quality Mark, Wardell Armstrong's EIA practice is independently reviewed in accordance with best practice.
- 2.1.2 This ES has been prepared with regards to the requirements of the EIA regulations, which apply to the Proposed Development, as set out below.
- 2.1.3 This ES supersedes the December 2021 ES submitted in support of planning application APP/21/01434.

2.2 Planning Policy

- 2.2.1 The main policy documents of relevance to this ES include the National Planning Policy Framework (NPPF) (December 2024) together with HBC's current development plan.
- 2.2.2 Further Details of the relevant planning policies (to this application) are provided within the accompanying Planning Statement that was prepared for the planning application submission, as applicable. Where there are relevant planning policies are details set out within each of the discrete technical chapters.

National Planning Policy Framework

- 2.2.3 The NPPF was originally published in March 2012 and replaced all earlier Planning Policy Statements and Planning Policy Guidance Notes. The current version comprises the December 2024 NPPF. The National Planning Practice Guidance (NPPG) website was first published in March 2014 and updated regularly thereafter in order to assist local authorities with interpreting and applying the NPPF, locally. The NPPG should be read in conjunction with the December 2024 NPPF.
- 2.2.4 Where relevant, the technical chapter within the ES detail the relevant aspects of the NPPF and NPPG in relation to the Proposed Development and topic area under consideration.

Local Planning Policy

- 2.2.5 HBC's current adopted Local Plan comprises the Core Strategy (2011) and the Site Allocations Plan (2014). At the same time, HBC are currently in the process of preparing a new (emerging) Local Plan titled the 'Building a Better Future Plan', which will replace the Core Strategy and Allocations Plan.
- 2.2.6 The Havant Borough Core Strategy (HBCS) was adopted in March 2011 and is the principal document in the Havant Borough Local Plan. The HBCS sought to set out the broad detail and direction of development in the borough until 2026.
- 2.2.7 The Allocations Plan is the second part of the Local Plan and was adopted on 23rd July 2014. It identifies sites for specific uses including housing, employment, retail, recreation and green infrastructure up to 2026, aligned to the HBCS. It also contains some detailed Development Management policies.
- 2.2.8 The Local Plan is supported by a suite of supporting Supplementary Planning Documents.
- 2.2.9 The 'Rook Farm' site was previously an emerging Development Allocation for residential development within Draft Policy H27 of the now-withdrawn Havant Borough Local Plan. The Site has since been submitted to HBC for consideration as an allocation in the Council's current emerging Local Plan work, with representations being made to the authority's initial autumn 2022 and more recent 2025 Regulation 18 consultation exercises to this effect, and a Call for Sites submission being made in November 2022.
- 2.2.10 The Site is not located within a designated Neighbourhood Plan area and therefore there are no Neighbourhood Plans of relevance to the Proposed Development.
- 2.2.11 Each technical chapter within this ES details the relevant local planning policies in relation to the Proposed Development and topic area under consideration.

2.3 Requirement for an EIA

Statutory Requirement for an EIA

- 2.3.1 On the 22nd December 2016 the Applicant submitted an outline planning application for residential development (up to 210 dwellings and 0.6ha for apartments with care) on the Site to HBC (planning ref: APP/17/00007), which was refused planning permission on the 13th April 2017.
- 2.3.2 Additionally, on the 17th March 2017 (during the determination period for the application), HBC provided the Applicant with an EIA Screening Opinion, which stated that the Proposed Development was considered to be 'EIA Development'.
- 2.3.3 The Proposed Development falls under Schedule 2, Part 10(b) Urban development projects (infrastructure projects). Under this category, the threshold criteria for which an EIA may be required is a project for which:
- The development includes more than 1 ha of urban development which is not dwelling house development; or
 - the development includes more than 150 dwellings; or
 - the overall area of the development exceeds 5ha.
- 2.3.4 With regard to the selection criteria in Schedule 3 in the Regulations and the associated guidance including screening indicative criteria and thresholds; the development was judged to be EIA development by HBC for the following reasons:

'Characteristics of Development:

The size of the development - The site area of 11.81 hectares is significant in relation to the land take, this is linked to the sites capacity to provide a valuable habitat for protected species. The area is to change from primarily agricultural fields to residential development which would have the potential to impact on protected species using the site.

The cumulation with other development - This site is identified as part of the Havant Borough Local Plan Housing Statement as being of 'Uncertain Potential' together with another site on Hayling Island. In addition, the Housing Statement has identified other greenfield sites within the Borough for early release.

The cumulative impact of this site with these other sites needs to be assessed in relation to impacts on protected species.

Location of development:

The environmental sensitivity of the site has been recognised by its identification as an 'Important' Site for Brent Geese and Waders under the Solent Waders and Brent Goose Strategy. Evidence is required to demonstrate levels of impact alone and in combination with other proposals subject to the tests in the Habitat Regulations.

The site is in close proximity to the Chichester and Langstone Harbour Ramsar and Special Protection Areas (SPA) approximately 0.85km and 1km from the site respectively and Solent Maritime Special Area of Conservation (SAC).

The application is on a site that is identified in the 2017 updated data for the Brent Goose and Waders Strategy as an important habitat for Waders and Brent Geese of Chichester and Langstone Harbour SPA with up to 1,000 birds using the site.

The site is therefore considered to be an important supporting habitat for the Waders and Brent Geese of Chichester and Langstone Harbour SPA.

Characteristics of potential impact:

The proposal to introduce residential development within this 11.81 ha site would have a potentially significant impact on the habitat of protected birds linked to their use of internationally and nationally protected species.

The impact relates to a significant number of protected birds.

The impact would be permanent in nature and is clearly impacting on a site known to be in use by protected birds.'

2.3.5 Owing to the above, an EIA has been undertaken for the Proposed Development.

2.4 Scope of the ES

- 2.4.1 Schedule 4 of the EIA Regulations sets out specific requirements for the content of an ES. Whilst every ES should provide a full and factual description of the effect(s) of a given development, Schedule 4 places an emphasis upon identifying 'likely significant effects'. Other effects that are not significant need only a brief reference within the ES in order to indicate that their potential significance has been considered.
- 2.4.2 Schedule 4 states that an ES should provide a detailed description of the development, and an outline of the reasonable alternatives considered by the Applicant. The outline of alternatives should include an indication of the main reasons for the choices made, taking into account the environmental effects.
- 2.4.3 Schedule 4 also states that a Non-Technical Summary (NTS) of the ES should be provided. To this end, this ES is accompanied by a separate stand-alone NTS produced using non-technical language.
- 2.4.4 In accordance with Schedule 4, likely significant effects of the development on the environment should be considered, in particular effects on: population, human health, biodiversity (e.g. fauna and flora), land, soil, water, air, climate, material assets, cultural heritage, landscape, and the interrelationship between the above factors.
- 2.4.5 The scope of this ES has been agreed in consultation with HBC and other statutory consultees. A formal request for a Scoping Opinion was submitted to HBC in August 2021 (Appendix 2.1) and HBC's Scoping Opinion was received in September 2021 (Appendix 2.2).
- 2.4.6 It is acknowledged that Part 5, 18(4a) of the EIA Regulations states that where a Scoping Opinion has been issued, an ES must be based on the most recent Scoping Opinion, so far as the proposed development remains materially the same as the proposed development which was subject to that opinion. It is confirmed that the scheme considered within this ES remains materially the same as that in which a Scoping Opinion was sought and adopted.
- 2.4.7 In accordance with the Scoping Report and HBC's Scoping Opinion, the following topic areas have been considered within this EIA, and are included as technical chapters within this ES:

- Air Quality;
- Ecology;
- Transport;
- Soils and Agricultural Land;
- Water Environment;
- Rights of Way, Access and Recreation; and
- Vulnerability to Major Accidents and Disasters.

2.4.8 Further consultation has been undertaken directly with the relevant bodies for the above, in order to identify the scope of assessment required for each topic area. Details of correspondence are included in Chapters 6 - 12 of this ES.

2.4.9 In accordance with the EIA Regulations the EIA has been undertaken, and the ES prepared, by 'competent experts'. The qualifications and experience of the team involved in the preparation of this ES is set out within the Statement of Expertise, included at the end of this ES.

Topics Outside the Scope of the EIA

2.4.10 Specific chapters have not been included for the following topics, as it is considered that these will be addressed sufficiently elsewhere within the ES or planning application, and the Proposed Development is unlikely to result in significant environmental effects relevant to these topics.

Landscape and Visual Assessment

2.4.11 A Landscape and Visual Assessment (LVA) was undertaken, concluding that the Proposed Development would not give rise to any unacceptable landscape and visual harm.

2.4.12 The assessment found that the Site itself is not covered by any landscape designations at a national or local scale. The Chichester Harbour Area of Outstanding Natural Beauty is located approximately 0.6km from the Site at its closest point.

- 2.4.13 The visual envelope for the Site is limited due to the flat landform, surrounding vegetation and exiting properties which visually and physically enclose the Site. Visual receptors are therefore limited to those in the vicinity of the Site and include residents on St Mary's Road, public footpath users and local road users.
- 2.4.14 Whilst the Proposed Development would result in the loss of an open arable field, existing features such as the flat, open landform and hedgerows will be retained and incorporated into the GI proposals for the development. The Proposed Development includes the creation of a green corridor lining the green space with the Site to the surrounding area. It is considered that the GI will soften views of the Proposed Development and will create additional habitats to improve biodiversity.
- 2.4.15 The assessment stated that *'Long term landscape effects are assessed as being Moderate/Minor Adverse for the Site and the immediate context due to the retention of existing features and overall enhancement. Some individual features will result in beneficial effects as a result of the increase in planting and the creation of SuDS and the green corridor'*.
- 2.4.16 The assessment also stated that *'Long term visual effects are assessed as being Minor Adverse due to the associated substantial GI which will help to soften and screen views of the development and help it assimilate into the existing edge of settlement context'*. Planting along the northern boundary and street tree planting will also help to frame views towards St Mary's Church from the south west of the Site.
- 2.4.17 In conclusion the report stated *'that the Site's landscape character has the ability to absorb change through the introduction of high-quality development'* and the Proposed Development *'is appropriate within its landscape context and the effects as a result of the Proposed Development would not give rise to any unacceptable landscape and visual harm'*.
- 2.4.18 On the basis of the above it is not considered that the Proposed Development will result in any significant effect upon landscape and visual receptors. Therefore, the topic is not considered further within this ES.

Archaeology and Cultural Heritage

- 2.4.19 In support of the application, a Heritage and Archaeology Assessment has been undertaken to assess the potential effect of the Proposed Development on designated heritage assets and archaeological resources at the Site and within the surrounding area.
- 2.4.20 Heritage assets within the immediate vicinity of the Site comprise the Grade II* Listed Church of St Mary, c. 70 meters (m) north-east of the Site, and the Grade II Listed Farm Cottage and Rook Farmhouse, c. 40 m east of the Site.
- 2.4.21 The assessment considered that the Proposed Development *'would result in the loss of some views of the Church from the south-west, although a view corridor and open space have been included in the masterplan to maintain views where possible'*. The loss would cause minor harm to the significance of the Church of St Mary, through a change to its setting. This effect is however, considered not significant in EIA terms.
- 2.4.22 The assessment also stated that *'the proposed development would result in negligible harm to the significance of the Grade II Listed Farm Cottage and Rook Farmhouse on the basis of a former historical functional relationship between the farm complex and the site'*.
- 2.4.23 With regards to further designated heritage assets within the environs of the Site, the assessment concluded that the proposed *'will not result in any adverse impacts on the significance of designated heritage assets as a result of alteration to setting'*.
- 2.4.24 Regarding archaeological potential there is no evidence of medieval or later settlement activity within the Site, and it is thought to have been comprised of farmland from the medieval period onwards. As a result, any unknown archaeological features dating to the medieval and post-medieval periods are likely to comprise agricultural features of low archaeological significance. The assessment did identify evidence of general prehistoric and Roman activity within the study area, and Hayling Island as a whole. Based upon this information it is considered that there is low to moderate potential for below ground remains of prehistoric and Roman dates to be present within the Site.

2.4.25 The assessment found no evidence to suggest that any archaeological remains present within the Site are of a significance as to preclude development. It is anticipated that further archaeological works will be secured through a condition attached to any permission granted. The assessment also identified no cumulative effects and stated that *'the proposed development will not adversely impact any identified archaeological remains which extend beyond the footprint of the proposed scheme. The proposed development will not adversely impact designated heritage assets in the wider vicinity and as such no cumulative impacts are identified'*.

2.4.26 It is considered that the Proposed Development is unlikely to have significant effects on the setting of heritage assets or on archaeological remains. Therefore, the assessment of effects of the Proposed Development on heritage assets and archaeological remains has been scoped out of the EIA.

Noise and Vibration

2.4.27 A Noise Assessment has also been undertaken in support of the planning application, with the findings presented in a Noise Assessment Report.

2.4.28 Noise surveys were undertaken at the Site to determine noise levels associated with the surrounding noise sources. This identified that the dominant noise sources at the Site are road traffic on St Mary's Road and the surrounding road network and noise from the external plant at Smith & Austin Engineering Products Ltd. The report further stated that *'due to the very low noise levels observed from the electrical substation and Hayling Island Holiday Park, these are not considered to be a problem for the proposed development'*.

2.4.29 The results of the noise survey and assessment indicate that the implementation recommended glazing together with appropriate acoustic ventilation should ensure that the required internal daytime and night-time noise limits are achieved at those proposed dwellings closest to identified noise sources.

2.4.30 The report further identified that a large majority of the proposed dwellings further into the Site will be able to open windows for ventilation at all times.

- 2.4.31 Noise mitigation measures, including glazing requirements for bedroom and living room areas will be confirmed, on a plot-by-plot basis, at the reserved matters stage. Requirements for acoustic ventilation will also be confirmed.
- 2.4.32 Best working practice will be implemented during each phase of the earthworks and construction works at the Site. The construction works will follow relevant guidelines to control noise and vibration. A Construction Environmental Management Plan (CEMP) will be produced setting out the measures that would be put in place to minimise noise emissions. Such may include ensuring engines are turned off when possible; implement set working hours during the week and at weekends; and adherence to any time limits imposed on noisy works by the local authority. Effects during construction on existing sensitive receptors are therefore unlikely to be significant.
- 2.4.33 Owing to the nature (residential) of the Proposed Development it is unlikely to result in significant adverse effects upon existing sensitive receptors during operation.
- 2.4.34 To minimise the potential for vibration to be generated by any necessary piling during construction, consideration will be given to the type of piling to be used. Once the precise building locations, ground conditions for each location and type(s) of piling are confirmed, recommendations for control will be made as appropriate.
- 2.4.35 Based on the above, it is considered that the Proposed Development will not result in significant effects, therefore Noise and Vibration is scoped out of the ES.

Ground Conditions and Contamination

- 2.4.36 The Site is currently in agricultural use and therefore there is not likely to be any significant sources of contamination on Site. During both construction and operation standard protocols and best practice will be implemented to ensure there is no risk of contamination.
- 2.4.37 In support of the application for the Site a Preliminary Geo-Environmental Risk Assessment has been undertaken. For full details of the environmental setting reference should be made to the Preliminary Geo-Environmental Risk Assessment Report.

- 2.4.38 The assessment found that *'there are negligible risks associated with land quality at the site. Any contamination is likely to be localised and would be addressed during development, probably through the use of a clean capping. If hydrocarbons are encountered ... these would be expected to be limited in extent and so can be removed'*.
- 2.4.39 Should unexpected, localised contamination be encountered during development works these will be addressed through a discovery strategy, with source removal and off-site disposal being likely to be the most appropriate remedial action.
- 2.4.40 The assessment also dismissed the risk of ground gas due to no source being identified. This will be verified by a site investigation. If a risk is identified, this can be mitigated through the use of conventional gas membrane and underfloor ventilation.
- 2.4.41 It was stated in the assessment that *'conventional spread foundations should generally be suitable for the proposed development'*.
- 2.4.42 Suitable testing will be undertaken to determine the feasibility of soakaway drainage.
- 2.4.43 Further investigations will be undertaken to provide design information for future development works post-consent. This will likely be covered by a suitably worded condition. If required mitigation and remediation measures will be implemented.
- 2.4.44 Owing to the above, Ground Conditions and Contamination has been scoped out of the ES.

Climate

- 2.4.45 The EIA Regulations state that an EIA should consider potential climate related effects. It is considered that these comprise the impact of the Proposed Development on the climate (i.e. greenhouse gas (GHG) emissions) and the impact of climate change on the Proposed Development.

2.4.46 As for any development, the Proposed Development will result in GHG emissions and these are unavoidable. It is not considered that the GHG emissions of the Proposed Development will be significantly different from other proposals of a similar nature and scale as the Proposed Development will be constructed, at a minimum, in accordance with relevant regulations, with betterment of Building Regulations being achieved where possible. In addition, the proposals will meet the requirements of policies that aim to reduce GHG emissions, through the use of sustainable design and other relevant measures.

2.4.47 The Proposed Development could potentially be affected by the impact of climate change, including increased risk of extreme weather events and flooding. However, resilience to extreme weather events will be incorporated within the design process, and the Proposed Development will be constructed in accordance with relevant regulations and guidance. In addition, a Flood Risk Assessment has been undertaken which has considered the risk of potential extreme flood events as a result of climate change. The Proposed Development is not expected to be severely affected by climatic changes.

2.4.48 In conclusion, it is not considered that the Proposed Development is likely to result in significant adverse effects on climate, and it is considered that the risk of the Proposed Development being affected by climate change is being addressed sufficiently elsewhere within the ES and standalone reports submitted as part of the application package.

Human Health

2.4.49 It is considered that the potential impacts to Human Health arising from the Proposed Development have been adequately covered separately within the relevant chapters ES and the standalone reports submitted in support of the Planning Applications (e.g. Air Quality and Noise).

- 2.4.50 During the construction phase, health and safety regulations and a CEMP, will be adhered to reduce the likelihood of any impacts occurring to human health. The construction of the Proposed Development will create employment opportunities in the short term which will likely have a beneficial effect upon the local population through increased employment opportunities and will also contribute to the economy through expenditure. Owing to the scale and nature of the Proposed Development such beneficial effect will not be significant.
- 2.4.51 The risk to human health from events such as major pollution and fires will be controlled through adherence to the relevant environmental permits and regulations during both construction and operation.
- 2.4.52 Owing to the nature of the Proposed Development no adverse effects on human health are expected to be introduced by the Proposed Development during the operational phase. The increase in housing provision brought about by the Proposed Development will have a beneficial effect on the local population and contribute to local policy requirements. The Proposed Development will also include a proportion of affordable housing which will be of benefit to the local population by increasing the availability of affordable housing in the area. As above these effects will not be significant.
- 2.4.53 It is considered that the Proposed Development will provide a beneficial effect (not significant) upon existing and future residents through the provision of open space. Areas of green open space have been found to improve people's mental health through spending time outdoors. The provision of open space also allows people to get outside and exercise, which also brings many benefits to people's physical health.
- 2.4.54 The Proposed Development will also promote healthy travel through the provision of cycle parking and paths.
- 2.4.55 The Proposed Development also proposes a space for allotments and community gardens providing a healthy food environment through the opportunity for community food growing.

2.4.56 As it is considered that the Proposed Development is unlikely to result in any significant effects on human health, beyond those already being considered elsewhere within the ES and standalone reports submitted with the planning application, a separate chapter has not been included within this ES.

Socio-economics

2.4.57 It is not anticipated that the Proposed Development would result in any significant socio-economic effects (both adverse and beneficial). The Proposed Development will create employment opportunities during both the construction and operational phases. The increase in employment in the area due to the Proposed Development will also increase local income through expenditure and revenue, and attract locally skilled workers retaining people of working age within the local area for longer. This will help offset any rate of growth in ageing population, achieving a more balanced population. The socioeconomic impacts of the Proposed Development will be considered as part of the supporting planning justification for the proposal outside the ES.

Waste

2.4.58 Under the current land use, the Site does not generate any levels of waste that require management.

2.4.59 During construction a Site Waste Management Plan (SWMP) will be prepared which will detail the design measures towards optimum use of materials, set specific targets for construction waste generation and appropriate mechanisms/protocols for segregating waste on-site and monitoring overall waste management. Areas designated for the safe storage of waste will be provided during construction. All storage areas will be appropriately designed for environmental protection and will be organised so that they can be safely accessed by construction staff. Staff will be appropriately trained in the use of waste storage facilities on Site and clear labelling and signage will be employed to ensure that materials are handled and stored in-line with legislative requirements. Wastes will only be removed from the Site by registered waste carriers and the movements will be accompanied by a Waste Transfer Note (and a Waste Consignment Note, if appropriate) in accordance with Duty of Care. Copies of these will be stored on the Site. Wastes will only be sent to sites appropriately permitted for the treatment, recycling and/or disposal of the specific waste stream.

- 2.4.60 During the operational phase of the Proposed Development, suitable waste storage and recycling facilities will be provided in accordance with the regulations and policy set out by HBC, who will collect the waste from the Site under their statutory duties.
- 2.4.61 It is not anticipated that the construction or operation of the Proposed Development will generate hazardous waste.
- 2.4.62 The design of the Proposed Development would provide appropriate access for refuse collection vehicles to access all properties and ensure safe access and manoeuvrability for collection crews.
- 2.4.63 With implementation of an appropriate SWMP and inclusion of design features to facilitate waste collection, it is considered that there is limited potential for significant waste effects to arise as a result of the Proposed Development. Consequently, waste has been scoped out of further assessment within the ES.

Lighting

- 2.4.64 The lighting design of the Proposed Development is intended to be efficient and in accordance with Building Standards requirements.
- 2.4.65 Temporary lighting implemented during the construction phase, such as on-site temporary light fittings, construction compounds and on-Site security lighting have the potential to result in sky glow and light trespass or 'spill'. The level of light will be dependent on the location of the construction activities on a daily basis and the equipment being used, with light levels being attenuated as the distance between the source and receptor increases. Any impacts would be temporary.
- 2.4.66 During construction a Construction Environmental Management Plan (CEMP) will be implemented and will include measures to reduce light spill. The potential effect of construction lighting is not expected to be significant.
- 2.4.67 Lighting associated with the operation of the Proposed Development will be designed in accordance with the most relevant lighting standards and will be assessed in relation to sensitive receptors. An appropriate lighting strategy will be implemented, as such, no significant operational effects are anticipated.

2.4.68 It is therefore considered that it is not necessary to assess lighting further within the ES.

2.5 Assessment Methodology

2.5.1 The technical assessments provide a detailed examination of the key environmental impacts associated with the Proposed Development for each topic area included within the ES, as set out above.

2.5.2 Baseline data was obtained from published information sources, non-confidential data supplied by the various organisations consulted, previous site work undertaken by others and additional fieldwork. The methodologies for predicting the nature, extent, magnitude and significance of environmental effects vary according to the topic area being considered. As such, the methodology for predicting impacts is included within each assessment chapter.

2.5.3 Quantitative methods make reference to thresholds and indicative criteria set out within industry regulations and guidelines (where available). Where quantitative criteria are not available or not appropriate, qualitative methods have been adopted, relying on previous experience and professional judgement.

2.5.4 The objective of each assessment is to identify the 'magnitude of change' to the existing baseline environment arising as a result of the Proposed Development. The magnitude of change that could affect a receptor as a result of the Proposed Development would be identified on a scale of change from minor alterations to major change or loss of a receptor. For some environmental topics, guidance on levels of acceptability means such change is based on quantitative parameters whilst for other topics this can be informed by professional judgement using qualitative parameters.

2.5.5 The level of effect is a function of impact magnitude and the importance/sensitivity of the resources or receptors. Whilst the methods for determining the level of an effect can vary according to the environmental discipline, this underlying principle remains the same.

2.5.6 The sensitivity or value of a receptor may be classified by its proximity to the Proposed Development, its use, or its importance, as informed by legislation, policy, and guidance, and qualified by professional judgement.

2.5.7 To evaluate the significance of effects, consideration of the sensitivity of a receptor, and the magnitude of change that could affect that receptor, is required. For each environmental receptor the following factors are considered:

- Geographical extent;
- Rate of change;
- Reversibility of the effect;
- Probability of the effect;
- Duration of the effect;
- Size and magnitude of the effect; and
- Sensitivity/importance/substitutability of the receptor.

2.5.8 Criteria is then used to determine whether an effect is 'significant' or 'not significant'.

2.5.9 The criteria for the assessment of effects that has been adopted within each assessment chapter is in accordance with current published guidance specific to the discipline to which it relates. The published guidance documentation used is referenced within each chapter. Where published guidance or criteria is unavailable, the chosen method for assessing impacts and effect significance is explained in detail to ensure transparency.

2.5.10 Where likely significant adverse effects have been identified, mitigation measures have been proposed in order to avoid, reduce or remove such effects. The mitigation measures include refinements to the scheme design and/or the introduction of best practice methodology and specific safeguards. As an EIA is an iterative process, the assessment methodology was used to refine the mitigation measures and then adjusted to take them into account during the assessment.

2.5.11 Via the incorporation of appropriate mitigation measures, identified adverse effects have been reduced to the lowest practicable level, consistent with the overall objectives of the Proposed Development. Any residual effects, during either construction and/or operation are identified and the significance of these residual effects assessed.

2.6 Cumulative Impact Assessment

- 2.6.1 Schedule 4 of the EIA Regulations states an ES must include a description of the likely significant effects of the Proposed Development, including reference to possible cumulative effects.
- 2.6.2 Within the assessment of cumulative impacts, there are two aspects to consider:
- Intra-cumulative effects (i.e. those occurring as a result of the Proposed Development in isolation); and
 - Inter-cumulative effects (i.e. those occurring as a result of the Proposed Development in combination with other development).
- 2.6.3 Chapter 13 summarises both the significance of any residual effects detailed within the technical ES chapters and any likely significant cumulative effects.

Intra-cumulative Effects

- 2.6.4 The EIA has considered where a significant residual cumulative impact is expected to occur on a particular receptor as a consequence of collective actions, aspects or effects of the Proposed Development. Chapter 13 summarises the residual impacts likely to be experienced for each type of receptor and assesses the significance of these effects in cumulation.

Inter-cumulative Effects

- 2.6.5 Schedule 4 of the EIA Regulations states that an ES should include a “*description of the likely significant effects of the development on the environment, resulting from... the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources*”.
- 2.6.6 A desktop review of committed developments in the area surrounding the Site has been undertaken. A list of schemes to be considered was agreed with HBC through scoping (see Appendix 2.2). Owing to the time that has elapsed since the Scoping Opinion was adopted this list has been reviewed and further schemes which would require consideration have been identified and those which do not require consideration have been removed.

2.6.7 Owing to the withdrawal of the emerging Havant Borough Local Plan 2036 the draft allocations, H28 and KP3, have been excluded from consideration. However, live applications within these allocations (i.e. APP/22/00001 Fathoms Reach) have still been considered. In addition, two schemes within the previously agreed list (APP/19/00324 and APP/20/00015) have been excluded as it is understood that their construction will be complete before construction of the Proposed Development would commence and therefore have been considered as part of the assessment baseline.

2.6.8 The schemes to be considered are set out below within Table 2.2.

2.6.9 To ensure the scope of the technical assessment is proportionate, the list of committed developments has been reviewed within each of the technical chapters.

Table 2.2: Schemes to be considered within inter-cumulative assessment

Application Ref	Application Reference	Description	Status
Land at Sinah Lane, Hayling Island.	APP/20/01093 (including APP/21/00419, APP/21/00857, APP/22/00639, APP/23/00293, and APP/23/00724)	Erection of 195No. dwellings, associated open space, pumping station, sub-station and formation of new vehicular access off Sinah Lane. Change of use of land from agricultural to a Wader and Brent Geese Refuge Area (Resubmission of APP/18/00724) (30.6.21). Request to Discharge Condition Nos. 3, 4, 6, 7,11,12, 13, 14, 20, 22, and 23 (recd 5.7.21) Request to Discharge Condition 18 (recd 17.3.22). Request to discharge condition 18 (06.07.22). Request to discharge conditions 6 and 14 (29.03.23). Request to Discharge Condition 6, 11 and 14 (20.12.23). Request to discharge condition 19 (30/05/2024).	Granted permission 30/06/2021
Land to the rear of 49 - 71, Fathoms Reach, Hayling Island.	APP/22/00001	Demolition of Nos 61-69 Fathoms Reach (inclusive) and development of 51 dwellings, to include 19 No. 2 bed, 18 No. 3 bed, 4 No. 4 bed, 3 No. 1 bed apartments and 6 No. 2 bed apartments, with play area and associated infrastructure; new vehicular and pedestrian access to Fathoms Reach and footpath link to Southleigh Grove; includes works to trees the subject of Tree Preservation Order No.1249.	Pending Decision Validated 21/02/22.
Land south of Saltmarsh Lane, Hayling Island, PO11 0JT.	APP/21/01351	Outline application for erection of up to 60 dwelling units with access; associated landscape and highway works on land south of Saltmarsh Lane, and all other matters reserved.	Pending Decision Validated 24/02/22.
Land north of Oysters, Station Road, Hayling Island.	APP/21/01350	Outline application for erection of up to 29 dwelling units and associated highway works with all other matters reserved.	Pending Decision Validated 03/03/22.

Table 2.2: Schemes to be considered within inter-cumulative assessment

Application Ref	Application Reference	Description	Status
Land at Kingscroft Farm adjacent to Ridgway and, Marples Way, Havant.	APP/22/00669	Outline planning application with all matters reserved (except for access) for the development of up to 120 residential dwellings (C3 Use), with access from Meyrick Road, the provision of open space, landscaping and other associated works including demolition of existing buildings on site.	Pending Decision Validated 19/08/22.
Land at, Palk Road, Havant.	APP/22/01231	Redevelopment of a brownfield site to include provision of 4No. apartment blocks comprising of 83 no. residential dwellings (use class C3 residential), parking, public open space, landscaping and other associated works, including demolition of existing buildings on site, with access from Palk Road.	Pending Decision Validated 11/01/23.
36 New Lane, Havant, PO9 2JL.	APP/22/01039	Construction of 6no. industrial units, within Use Classes B2, B8 and E(g), following demolition of existing buildings, to incorporate, access, parking, landscaping, and associated works.	Granted permission 11/09/2023
Tournerbury Woods, Tournerbury Lane, Hayling Island.	APP/23/00076	Change of Use of land and woodland (retrospective) as a wedding and events venue, including retention of permanent ancillary buildings and structures, the erection of removable structures (including marquees and temporary facilities), and the use of the land as a campsite in association with events. Construction of vehicular track from the public highway to the proposed wedding and events venue at Tournerbury Woods.	Granted permission 15/09/2023
Beachlands, 5 Sea Front, Hayling Island.	APP/24/00968	Full planning application for the development of 4No commercial units (E Use) and 32No residential units (C3 Use) over 4 floors with associated open space, public realm enhancements, demolition of the existing Beachlands Amusement Arcade Buildings and dwelling and associated works.	Pending Decision Validated 18/12/24.

Table 2.2: Schemes to be considered within inter-cumulative assessment

Application Ref	Application Reference	Description	Status
Langstone Technology Park, 2B Langstone Road, Havant, PO9 1SA.	APP/22/00172 (including APP/24/00058, APP/24/00274, APP/25/00588, APP/25/00596, APP/25/00598, and APP/25/00835)	Outline Planning Application for Phased demolition of existing buildings and the erection of new flexible use employment floorspace (Use Classes E(g)(i)-(iii)/B2/B8) and ancillary uses (Use Classes E(b), E(d) and E(f)); and associated works. All matters reserved except Access.(22.12.23). Request to discharge conditions 5, 6, 8, 10, 12, 24, 25, 26, 28, 29, 32, 33 and 36 (Rcvd 02.01.24). Request to discharge conditions 5, 10, 12, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 45 (Received 29.03.24). Request to discharge condition 24 (Received 12.09.24). Request to discharge condition 8 (Received 29.01.25).	Granted permission 22/12/23.
B.M Scaffolding, Brockhampton Road, Havant, PO9 1JU.	APP/20/00533	Proposed demolition of existing industrial unit in favour of a new replacement unit for B1, B2 and B8 use.	Granted permission 22/01/2021.
Land North of the Regional Business Centre	Havant Local Plan Policy HB2 Havant & Bedhampton Employment Allocations – Site Ref: BD10	Site Area: 1.48ha Floorspace: 3,500m ²	Local Plan Employment Allocation

3 SITE DESCRIPTION

3.1 Introduction

3.1.1 This Chapter of the ES provides an overview of the Site location and a description of the Site and the surrounding area. The technical assessments set out in Chapters 6 to 12 each contain a detailed description of the baseline environmental conditions of the Site and its surroundings, relevant to the scope and nature of the topic area under consideration.

3.2 Site Location

3.2.1 The Site is centred at approximately National Grid Reference SZ 71920 99784 and is located on fields situated amongst existing settlement areas in the southern part of Hayling Island. It falls within the administrative authority of HBC.

3.2.2 The location of the Site and application boundary is illustrated at Appendix 1.1.

3.3 Site Description

The Site

3.3.1 The Site is approximately 11.77 ha in size and is comprised of two fields currently in agricultural use and an area of grassland containing a building and pond. A drain runs horizontally across the centre of the Site. Drains also run along the northeastern, southeastern, and southwestern site boundaries.

3.3.2 The Site is bound by:

- An agricultural field to the north;
- The cemetery and grounds of the St Mary's Church to the north-east;
- Residential properties located off St Mary's Road and Rook Farm Way, to the east and south-east;
- Residential properties located off St Mary's Road and Southleigh Grove to the south;
- Open green space to the south-west, beyond which are residential properties located off Fathoms Reach;
- An agricultural field to the west, beyond which are residential properties located on Manor Road; and
- Hayling Island Holiday Park to the north-west.

- 3.3.3 The Site itself is generally flat at an elevation between c.8.50m and c.6.50m Above Ordnance Datum (AOD).

The Surrounding Area

- 3.3.4 In respect of its positioning within Hayling Island, the Site is located to the northeast of West Town, to the west of Gable Head, and to the north of the South Hayling. As such, the majority of the land to the east, south and west is densely populated by residential areas with occasional commercial uses. Beyond this is Hayling Island Beach which runs along the entirety of the island's southern extent.
- 3.3.5 Further residential areas are located to the north-west, beyond Hayling Island Holiday Park, and north-east of the Site. Land further to the north consists mainly of agricultural land interspersed by farmsteads and hamlets. Tournerbury Golf Course is located c. 550 m to the northeast of the Site.
- 3.3.6 The mainland is accessible via a single road, Langstone Road, located on the northern extend of Hayling Island. This road is accessible from the Site via the A3023 which is located off Manor Road, west of the Site, and Church Road, east of the Site.

3.4 Environmental Designations

- 3.4.1 There are currently no existing Air Quality Management Areas declared within the HBC administrative area.
- 3.4.2 Whilst there are no statutory ecological designations covering any part of the Site there are eight international statutory designations within 10 km of the Site. These comprise the Chichester and Langstone Harbours Ramsar & Special Protection Area (SPA) (c. 750 m east of the Site), Solent Maritime SAC (c. 860 m south-east of the Site), Solent and Dorset Coast SPA (c. 880 m south of the Site), Solent and Isle of Wight Lagoons Special Area of Conservation (SAC) (c. 5.38 km north-west of the Site), Portsmouth Harbour Ramsar & SPA (c. 8 km north-west of the Site), and South Wight Maritime SAC (c. 8.89 km south-west of the Site). The Solent and Southampton Water SPA/Ramsar are located over 10 km from the Site.
- 3.4.3 Three national statutory designations are located within 3 km of the Site. These are the Sinah Common Site of Special Scientific Interest (SSSI) (c. 710 m south of the Site),

Chichester Harbour SSSI (c. 750 m east of the Site), and Langstone Harbour SSSI (c. 800 m west of the Site). The Chichester Harbour and Langstone Harbour SSSIs both form part of the Chichester and Langstone Harbour SPA and Ramsar designations and share special interests/qualifying features. The Sinah Common SSSI is primarily designated for botanical interest and includes a primary support area for the Solent Waders and Brent Geese Strategy (SWBGS).

- 3.4.4 The Site lies west of a Site of Importance for Nature Conservation (SINC) named as Tournerbury Farm (c. 395m northeast of the Site).
- 3.4.5 The Site and the surrounding area are located within a Nitrate Vulnerable Zone (NVZ) for eutrophic water (Chichester, Langstone and Portsmouth Harbours Eutrophic NVZ (TraC)).
- 3.4.6 Public footpaths abut the northern and western boundaries of the Site. These connect to the wider footpath network on the island.
- 3.4.7 The Site itself is not covered by any landscape designations at a national or local scale. The Chichester Harbour National Landscape (NL) (formerly Area of Outstanding Natural Beauty (AONB)) lies approximately 470m to the east of the Site.
- 3.4.8 A number of Listed Buildings (Grades II and II*) are located within the surrounding area. The closest being the Church of St Mary (Grade II*) c.110 m to the northeast and the Farm Cottage and Rook Farmhouse (Grade II) c.40 m to the east.

4 THE PROPOSED DEVELOPMENT

4.1 Introduction

4.1.1 This chapter sets out a description of the Proposed Development, a summary of the design process and indicative details of the development timescales.

4.2 Development Proposals

4.2.1 Outline planning permission, with all matters reserved except for access, will be sought for the demolition of an existing building and the erection of up to 300 dwellings, including affordable housing, structural planting and landscaping; informal public open space; children's play areas; sustainable drainage system (SuDS); a new vehicular access from St Mary's Road; and associated ancillary works.

4.2.2 As an outline application, full details are not submitted at this stage of planning and design. Rather, approval is sought for the principle of development and the primary means of access within a set of parameters. As such, this ES is based on the following parameters to ensure a robust assessment across the EIA, which are illustrated on the Parameters Plan at Appendix 1.2:

- An application area of up to 11.77 ha;
- A maximum of 7.56 ha of built development including;
 - Proposed Residential Area of up to 7.53 ha;
 - Up to 0.03ha of Proposed Surface Water Pumping Stations;
- Up to 300 dwellings at a dwellings per hectare (dph) of up to 40 dph;
- A minimum of 4.21 ha of Green Infrastructure (GI) including;
 - Up to 400 m² of Proposed Local Equipped Area of Play (LEAP);
 - Up to 225 m² of Proposed Teenage Provision;
- Vehicular access from St Mary's Road; and
- Demolition of the existing farm building located in the centre of the Site.

4.2.3 The proposed residential development area is to cover an area of up to 7.53ha with up to 300 dwellings at 40 dph. As the application is being submitted in outline, at this stage the exact height of the dwellings is unknown, however it is expected that the dwellings will be either 2 storeys (up to 8.5m above ground level) or 2.5 storeys (up to 10.5m above ground level).

- 4.2.4 Two surface water pumping stations are proposed on Site. Together these will be up to 0.03ha in size and will be suitably located away from existing or future receptors. The pumping stations will have a maximum fence height of 1.8m above ground level.
- 4.2.5 The principal vehicular and pedestrian access to the Site will be located off St Mary's Road. Further pedestrian accesses will be located off Southleigh Grove via an existing footpath located to the west of the Site and along the northern boundary of the Site off of an existing footpath. An emergency access will be located from Rook Farm Way. Car parking provision will be based on HBC parking standards for C3 use.
- 4.2.6 Access to the proposed dwellings will be via an internal road network. This will include highway, verge, tree planting and footpaths. A number of pedestrian and cycle routes are also proposed across the Site.
- 4.2.7 It is proposed that the existing pond, located at the centre of the Site, and ditch are retained. A section of existing trees and hedgerows, also located at the centre of the Site, will be removed, to facilitate the development. Further vegetation will be removed to facilitate the vehicular access from St Mary' Road.
- 4.2.8 A minimum of 4.21 ha of GI is proposed. This will comprise; the retainment of features detailed above; green space including public open space (POS), planting, landscaping, buffers, allotments, community gardens, and habitat creation; SuDS basins; a LEAP up to 400m² in size; and proposed teenage provision up to 225m² in size.
- 4.2.9 It is proposed to maintain a southwest / northeast view corridor of St Mary's Church across the Site.

Demolition and Construction

- 4.2.10 It is proposed that the existing building, located within the centre of the Site, will be demolished as part of the Proposed Development. A Method Statement for the demolition works will be submitted to HBC prior to commencement.
- 4.2.11 It is anticipated that the demolition will occur during plot preparation prior to the construction phase.

4.2.12 Standard good practice and methodologies will be followed during the construction phase.

4.2.13 Site preparation work will be necessary prior to the construction of the Proposed Development. At present it is anticipated that the Site preparation works will comprise:

- Identification of all underground service infrastructure that crosses or affects the Site;
- Erection of site hoardings;
- Topsoil stripping and creation of temporary storage areas;
- Creation of temporary haul roads; and
- Foundation preparatory works.

4.2.14 Demolition and construction activities would be guided and controlled by a Construction & Environmental Management Plan (CEMP) and a Construction Traffic Management Plan (CTMP). These will be produced and then approved by HBC, and any other relevant bodies, as part of a planning condition. These documents will ensure good working practices based on standard construction guidance.

4.2.15 Proposed working hours for the Site will also be contained within the CEMP. It is anticipated that operational construction working days and hours will be agreed with the Local Planning Authority.

4.3 Mitigation and Design

4.3.1 The EIA process has served to shape and refine the design proposals by identifying any potential adverse effects, issues or constraints that could be effectively 'designed out' of the proposals at an early stage. The design parameters have evolved in response to external engagement and public consultation feedback and the results of technical assessments. The design proposals have undergone various iterations to either avoid or incorporate measures to mitigate for adverse environmental impacts, or (where possible) to enhance the environmental benefits of the Proposed Development.

4.4 Indicative Development Timescales

4.4.1 Subject to outline planning permission being granted by early 2026 it is anticipated that construction of the Proposed Development could commence in 2027. It is

estimated that, dependent upon market factors, the Proposed Development could be completed by 2035.

- 4.4.2 Phasing details are not available at this outline planning stage and will be agreed during detailed design.

5 CONSIDERATION OF ALTERNATIVES

5.1 Introduction

5.1.1 Schedule 4 of the EIA Regulations state that an ES should include:

“A description of the reasonable alternatives (for example in terms of development design, technology, location, size, and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects”.

5.2 ‘Do Nothing’ Alternative

5.2.1 The first alternative considered is the ‘do nothing’ scenario. This scenario is to assume that the Proposed Development would not proceed and that the Site will continue with its current use.

5.2.2 Whilst this option would remove the potential for adverse environmental impacts as a result of the Proposed Development, it would not contribute to the housing and affordable housing targets that have been identified within Havant Borough.

5.2.3 In accordance with national planning policy (December 2024 NPPF), the latest assessment of Havant borough’s local housing needs identifies a requirement to deliver 892 dwellings per annum within the authority. At the same time, the Council’s Housing Needs Analysis study (Turley, 2023) identifies a need for around 373 affordable homes annually over the period to 2043.

5.2.4 The ‘Rook Farm’ site was previously an emerging Development Allocation for residential development within Draft Policy H27 of the withdrawn Havant Borough Local Plan. The Site has since been submitted to HBC for consideration as an allocation in the Council’s current emerging Local Plan work, with representations being made to the authority’s initial autumn 2022 and more recent 2025 Regulation 18 consultation exercises to this effect, and a Call for Sites submission being made in November 2022.

5.2.5 The Proposed Development includes up to 300 residential units and, by not developing the Site, this valuable contribution to the sustainable creation of housing and provision of affordable housing within the area would be lost.

- 5.2.6 The Proposed Development also includes for a network of Green Infrastructure (GI) which will be accessible to the existing and future population. As detailed above by not developing the Site this contribution to GI provision in the local area would be lost.
- 5.2.7 The Proposed Development also presents an opportunity to create temporary jobs during construction and generate an increase in consumer spending in the local economy, supporting local retail and other services. These would likely benefit the local population and economy and would be lost should the Proposed Development not be built out.
- 5.2.8 On the basis of the above, the 'Do Nothing' alternative has been discounted.

5.3 Alternative Design

- 5.3.1 The proposals have been through an iterative design process in conjunction with the assessment of environmental impacts and the production of the ES. The design process has also been informed by consultation with HBC and other relevant consultees. This process of engagement and public consultation included a leaflet drop to nearby residents and a dedicated website. As far as possible, potential significant adverse environmental impacts have been 'designed out' of the scheme at an early stage. Measures have also been incorporated into the proposals to mitigate any impacts that cannot be adequately addressed through design, or (where possible) to enhance the environmental benefits of the Proposed Development. Further information on the specific mitigation measures proposed are set out within the relevant technical chapters of this ES.
- 5.3.2 For example, a network of footpaths and cycleways are proposed across the Site linking the Proposed Development to the wider external network and routes through and around Hayling Island, increasing access to recreational areas for new and existing residents. Amenity greenspace and equipped play facilities and youth provision are also proposed which will relieve pressure on local facilities and increase opportunities for both formal and informal recreation for the local population.
- 5.3.3 A view corridor has also been included so that views of St Mary's Church are retained. In addition, SuDS basins will be included to accommodate surface water run-off and,

two pumping stations have been added to the scheme to enhance the drainage design. The SuDS basins will also create habitats, enhancing biodiversity within the Site.

5.3.4 A Biodiversity Net Gain (BNG) will be delivered as part of the Proposed Development, in line with statutory requirements.

5.3.5 Therefore, of the alternative design options considered the proposals are considered to be the development alternative that will result in the fewest adverse environmental impacts whilst delivering benefits for the Site and local area.

5.4 Alternative Site Location

5.4.1 The EIA Regulations require only the “*reasonable alternatives... studied by the developer*” to be considered within the ES, and therefore it would not be appropriate to consider alternative site locations as the Applicant does not control any other available sites for the Proposed Development within the area.

5.4.2 The environmental constraints within the proposed Site are limited and the potential environmental impacts that could occur have been mitigated as far as possible as part of this EIA (see individual technical chapters for further details). On the basis of the above, it is considered that the Site is located in a sustainable and environmentally suitable location.

5.5 Conclusion

5.5.1 In summary, the Proposed Development has been through an iterative design process to reduce the potential environmental effects to the lowest practical level and enhance the potential benefits of the scheme. The current proposals are therefore considered to represent the most suitable option for development of the Site, taking into consideration environmental effects.

6 AIR QUALITY

6.1 Introduction

6.1.1 This Chapter reports the likely significant effects of the Proposed Development in terms of Air Quality in the context of the Site and surrounding area. In particular it considers the likely significant effects of dust and fine particulate matter associated with the construction phase and road traffic emissions associated with the operational phase.

6.1.2 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 5), as well as the final chapter, 'Summary of Residual and Cumulative Effects' (Chapter 13).

6.2 Legislation, Policy and Guidance

6.2.1 The relevant legislation, policy and guidance are listed below, with details provided in Appendix 6.1.

Legislative Framework

6.2.2 The applicable legislative framework is summarised as follows, which are described in more detail in Appendix 6.1:

- *The Environment Act, 1995 (as amended in 2021);*
- *Air Quality Strategy: Framework for Local Authority Delivery, 2023; and*
- *Air Quality (Standards) Regulations, 2010.*

Planning Policy

6.2.3 The applicable planning policy is summarised as follows:

- *National Planning Policy Framework, December 2024; and*
- *Havant Borough Core Strategy, Adopted in 2011.*

Guidance

6.2.4 The applicable guidance is summarised as follows:

- *Planning Practice Guidance: Air Quality, 2019;*
- *Institute of Air Quality Management (IAQM), Guidance on the Assessment of Dust from Demolition and Construction v2.2, 2024;*

- *Environmental Protection UK (EPUK) and IAQM, Land-Use Planning and Development Control: Planning for Air Quality, 2017;*
- *Natural England's Approach to Advising Competent Authorities on the Assessment of Road Traffic Emissions under the Habitat Regulations, 2018;*
- *Centre for Hydrology and Ecology, Air Pollution Information System (APIS);*
- *Environment Agency, AQTAG06 Technical Guidance on Detailed Modelling Approach for an Appropriate Assessment for Emissions to Air, 2014;*
- *Conservation of Habitats and Species Regulations No. 490, 2010; and*
- *Institute of Air Quality Management (IAQM), A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites, 2019.*

6.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

6.3.1 The scope of works to be considered in the air quality assessment, comprises the following:

- A qualitative assessment in order to consider the potential effects associated with the construction phase of the Proposed Development; and
- Air dispersion modelling in order to assess the potential effects associated with the operation of the Proposed Development.

Effects Not Considered within the Scope

6.3.2 According to the Multi Agency Geographic Information for the Countryside (MAGIC) resource, there are no potentially dust sensitive designated habitat sites within 50m of the Site and/or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the Site entrance(s). Therefore, in accordance with IAQM guidance, construction phase ecological effects do not need to be considered within this assessment.

Extent of the Study Area

6.3.3 A desk study has been undertaken to establish the air quality baseline and other relevant features up to 5km from the boundary of the Site.

6.3.4 For the construction phase assessment, existing sensitive human receptors located within 250m of the Site boundary and/or within 50m of the route that construction vehicles will take have been identified.

6.3.5 For the operational phase assessment, existing sensitive human receptors and relevant ecological receptors have been identified within 200m of the roads that will be affected by development generated vehicles.

6.3.6 These distances are taken from the IAQM construction dust guidance document detailed within Appendix 6.1 and have been applied using the methodologies detailed within Appendix 6.2.

Consultation Undertaken to Date

6.3.7 Table 6.1 provides a summary of the consultation activities undertaken in support of the preparation of this Chapter.

Table 6.1: Summary of Consultation Undertaken to Date			
Organisation	Individual(s)	Meeting Date and other forms of Consultation	Summary of Outcome of Discussion
Havant Borough Council (HBC)	Mr. Simon Jenkins (Director of Regeneration and Place of HBC).	A request for a Scoping Opinion was submitted to HBC on the 25 th August 2021. A formal Scoping Opinion was received on the 29 th September 2021.	Air Quality should be scoped into the Environmental Statement. AQ assessment to include a study area to include the A3023 up to the A27 junction, and associated links and junctions.

Assessment Methodology

6.3.8 The method of baseline data collection and assessment is in accordance with current guidance and industry best practice. Full details are provided in Appendix 6.2.

Construction Phase

6.3.9 The construction phase assessment has been undertaken in accordance with guidance from the IAQM. This guidance provides a methodology for the assessment of potential dust soiling and human health effects associated with the construction phase of the Proposed Development.

6.3.10 The assessment takes into account the risk of dust and PM₁₀ effects from construction phase activities, based on a number of factors including the scale and type of activities taking place, and the sensitivity of the local area. Based on the outcome of this, site-specific mitigation measures can be recommended.

Operational Phase

6.3.11 A detailed assessment of the effects on human receptors during the operational phase of the Proposed Development has been undertaken in accordance with guidance from *EPUK* and the *IAQM*. The assessment for neighbouring ecological receptors has been undertaken in accordance with guidance from *Natural England*.

6.3.12 Air dispersion modelling has been undertaken to consider the air quality effects associated with road traffic emissions at representative existing receptor locations. All predicted pollutant concentrations and deposition have been compared to the relevant air quality objectives, as detailed in the *Air Quality (Standards) Regulations 2010*, and critical loads respectively.

6.3.13 Air quality modelling has been carried out to predict pollutant concentrations, due to road traffic emissions, for four impact assessment scenarios as follows:

- Scenario 1: 2023 Verification and Base Year;
- Scenario 2: 2035 Opening/Future Year, Without Development (No Committed Developments) – used for designated habitat assessment only;
- Scenario 3: 2035 Opening/Future Year, Without Development (Includes Committed Developments); and
- Scenario 4: 2035 Opening/Future Year, With Development (Includes Committed Developments).

6.3.14 Scenario 2 is included as a future baseline scenario for the in-combination aspect of the ecological assessment, see below.

Ecological Assessment

6.3.15 Guidance on assessing the potential effects of proposed developments on conservation sites is provided via the Centre for Hydrology and Ecology APIS resource.

6.3.16 The Environment Agency's (EA) "AQTAG06" document provides further useful technical guidance on carrying out an appropriate assessment of emissions to air in fulfilment of the requirements of The Conservation of Habitats and Species Regulations 2010 No. 490 (referred to as the "Habitats Regulations").

6.3.17 Guidance on the assessment of significance is provided by the IAQM. Further details of the methodology are given in Appendix 6.2.

Significance Criteria

6.3.18 Effects that are deemed to be significant for the purposes of this assessment are those that are described as being of a moderate or major beneficial or adverse level.

6.3.19 The construction phase assessment for Existing Sensitive Receptors (ESR) takes into account the significance criteria used in the IAQM guidance. The operational phase assessment for ESR takes into account the significance criteria detailed in (i) EPUK/IAQM guidance and (ii) Natural England guidance. Full details of the significance criteria used within the assessment are included in Appendix 6.2.

6.3.20 Effects on air quality, whether adverse or beneficial, will have an effect that can be judged as either 'significant' or 'not significant'.

6.4 Baseline Conditions

Background Pollutant Concentrations

6.4.1 The Site is located within the administrative area of HBC, which is responsible for the management of air quality at the Site and in the local area. There are currently no existing Air Quality Management Areas (AQMAs) declared within the HBC administrative area.

6.4.2 The latest Annual Status Report (ASR) for HBC (2024) indicates that HBC currently maintains a network of 25 NO₂ diffusion tubes across the administrative area. There are no representative background monitoring locations in the vicinity of the Proposed Development. Therefore, background concentrations have been obtained from the 2021-based Defra default concentration maps for the appropriate grid squares¹.

¹ Accessed through the Defra Local Air Quality Management webpages (<http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html>)

6.4.3 There are, however, several roadside diffusion tubes located near Havant Road and Langstone Road. Monitoring data for 2023, provided by HBC, shows that these measured annual mean NO₂ concentrations of between 18.5 and 28.0 µg/m³.

6.4.4 Further details on the pollutant backgrounds used in the assessment are included in Appendix 6.3.

Future Baseline

6.4.5 Following further review of the 2024 ASR, it is noted that majority of the monitoring locations measured annual mean NO₂ concentrations below the annual mean NO₂ objective (i.e. 40µg/m³), during the last few years. Therefore, air quality within HBC is considered generally good. From the data provided in the 2024 ASR, it is also noted that measured NO₂ concentrations are either broadly stable or reducing across the district. It is anticipated that this overall trend will continue into the future as it is primarily a result of the development of the vehicle fleet with newer, lower-emission vehicles replacing older vehicles, and the increasing adoption of electric vehicles (EVs).

Sensitive Receptors

6.4.6 A number of existing sensitive human receptors (referred to as ESR 1 to ESR 20) have been selected for consideration in the air quality assessment. These have been chosen based on their proximity to the Site. In addition, one proposed human sensitive receptor (PSR 1) has been selected within the Site.

6.4.7 Details of these receptors are provided in Table 6.2, and their locations are shown on Appendix 6.7.

Table 6.2: Existing Sensitive Receptors Considered in Operational Phase Assessment				
Receptor	Address	Grid Reference		Receptor Type
		Easting	Northing	
ESR 1	Havant Road, Hayling Island	472194	102040	Residential
ESR 2	Church Road, Hayling Island	472278	100562	Residential
ESR 3		472233	99902	Residential
ESR 4		472206	99829	Residential
ESR 5	St Mary's Road, Hayling Island	472149	99823	Residential
ESR 6	Elm Grove, Hayling Island	472205	99535	Residential
ESR 7	Beach Road, Hayling Island	471449	99414	Residential
ESR 8	St Mary's Road, Hayling Island	471963	99532	Residential
ESR 9		471946	99544	Residential
ESR 10	A3023 Manor Road, Hayling Island	471456	99598	Residential
ESR 11	Havant Road, Hayling Island	471844	103105	Residential
ESR 12	A3202 Langstone Road, Langstone	471717	104923	Residential
ESR 13		471638	105718	Residential
ESR 14	Woodbury Avenue, Langstone	471651	105670	Residential
ESR 15	A3202 Langstone Road, Langstone	471599	105556	Residential
ESR 16	The Limes, Langstone	471695	105816	Residential
ESR 17	Havant Road, Hayling Island	472040	102303	Residential
ESR 18		472201	102048	Residential
ESR 19	West Lane, Hayling Island	471281	99602	Residential
ESR 20		471343	99819	Residential
PSR 1	Residential area closest to St. Mary's Road	472124	99847	Residential

6.4.8 ESR locations have been chosen to represent worst case scenarios, for example, close to busy roads or junctions. PSR 1 has been selected within the Site to represent the proposed residential area closest to St. Mary's Road and the proposed Site access road.

6.4.9 In addition to this, the following ecological receptors have also been considered within the assessment:

- Langstone Harbour Site of Special Scientific Interest (SSSI);
- Chichester Harbour SSSI;
- Chichester and Langstone Harbours Special Protection Area (SPA);
- Chichester and Langstone Harbours Ramsar Site; and
- Solent Maritime Special Area of Conservation (SAC).

6.4.10 Receptor locations are illustrated on Appendix 6.7, with further details provided within Appendix 6.2.

Modelled Baseline Concentrations at Receptors

6.4.11 The baseline assessment (i.e. scenarios 1 and 3) has been carried out for the existing sensitive receptors considered, in accordance with Defra guidance (i.e. using EFT v13). The adjusted NO₂ and unadjusted PM₁₀ and PM_{2.5} concentrations are detailed in Table 6.3.

Table 6.3: Predicted Adjusted NO₂ and Unadjusted PM₁₀ and PM_{2.5} Concentrations at Existing Sensitive Receptors for Scenarios 1 and 3.						
Receptor	Calculated Annual Mean Concentrations (µg/m³)					
	Scenario 1: 2023 Base Year			Scenario 3: 2035 Opening/Future Year, Without Development		
	NO₂	PM₁₀	PM_{2.5}	NO₂	PM₁₀	PM_{2.5}
ESR 1	19.35	12.93	7.55	8.98	11.84	6.64
ESR 2	20.09	12.28	7.51	9.12	11.16	6.58
ESR 3	19.38	11.57	7.21	9.07	10.45	6.27
ESR 4	17.17	11.34	7.08	8.60	10.27	6.18
ESR 5	11.48	10.46	6.61	7.43	9.53	5.79

Table 6.3: Predicted Adjusted NO₂ and Unadjusted PM₁₀ and PM_{2.5} Concentrations at Existing Sensitive Receptors for Scenarios 1 and 3.

Receptor	Calculated Annual Mean Concentrations (µg/m ³)					
	Scenario 1: 2023 Base Year			Scenario 3: 2035 Opening/Future Year, Without Development		
	NO ₂	PM ₁₀	PM _{2.5}	NO ₂	PM ₁₀	PM _{2.5}
ESR 6	18.09	11.38	7.11	8.79	10.30	6.19
ESR 7	12.75	10.64	6.75	7.67	9.70	5.92
ESR 8	11.86	10.55	6.70	7.45	9.61	5.88
ESR 9	11.13	10.44	6.64	7.31	9.51	5.82
ESR 10	13.92	10.88	6.88	7.99	9.91	6.04
ESR 11	20.30	12.08	7.55	9.37	10.98	6.64
ESR 12	18.90	11.77	7.44	9.60	10.78	6.57
ESR 13	31.84	15.17	8.96	15.17	14.10	8.01
ESR 14	26.50	14.26	8.45	13.60	13.30	7.57
ESR 15	25.34	14.19	8.40	13.24	13.22	7.52
ESR 16	35.66	15.30	9.08	16.76	14.29	8.15
ESR 17	21.20	13.27	7.73	9.41	12.13	6.80
ESR 18	18.78	12.83	7.50	8.85	11.75	6.60
ESR 19	12.07	10.55	6.71	7.51	9.62	5.88
ESR 20	12.23	10.56	6.71	7.54	9.64	5.89

NO₂ concentrations obtained by inputting predicted NO_x concentrations into the NO_x to NO₂ calculator² in accordance with LAQM.TG(22)

6.4.12 The results show that all predicted NO₂, PM₁₀ and PM_{2.5} concentrations are below the relevant objectives and limit values in both the 2023 and 2035 scenarios.

Limitations

6.4.13 Air quality assessments make use of official sources of information (i.e. vehicle emission factors and background concentrations) which have historically been

² Defra Local Air Quality Management webpages (<http://laqm.defra.gov.uk/tools-monitoring-data/no-calculator.html>)

considered to be overly optimistic. Monitoring data collected by the UK Government and local authorities over the past few years has shown that annual mean NO₂ concentrations remained higher than previously expected (especially in roadside locations). This was widely thought to be due to the lower-than-expected decline in NO_x emissions from diesel vehicles (even though new Euro standards have been introduced), coupled with an overall increase in the number of diesel vehicles on the road.

6.4.14 The vehicle emission factors used in this assessment are from Defra's latest Emission Factor Toolkit (EFT v13)³, which was released in March 2025 and is the most up-to-date version available. This version supersedes the previous version, EFT v12.1.

6.4.15 A position statement was produced by the IAQM in 2018 which dealt specifically with the use of EFT v8 and the consideration of uncertainties in predicting future air quality⁴. The statement concluded that the approaches for dealing with this uncertainty should be decided on a case-by-case basis but may include the use of a sensitivity test in which it is assumed that NO_x emissions will not reduce as quickly as within the EFT.

6.4.16 A later study provided evidence that EFT v9.0 may be relied upon to predict the 'most likely' future emissions reductions, as long as model verification has been undertaken using monitored data from 2016 or later⁵.

6.4.17 The IAQM has recently withdrawn their 2018 position statement on the consideration of uncertainties in predicting future air quality⁶. A growing body of evidence suggests that the latest COPERT vehicle emission factors used in EFT v9.0 (and later) reflect real-world NO_x emissions more accurately. As a result, the IAQM judges that "*an exclusively vehicle emissions-based sensitivity test is no longer necessary*". This is provided that the assessment has been verified using monitoring data from 2016 or later.

³ Defra Local Air Quality Management webpages (<https://iaqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html>)

⁴ Institute of Air Quality Management, Dealing with Uncertainty in Vehicle NO_x Emissions within Air Quality Assessments v1.1, July 2018

⁵ Air Quality Consultants, Performance of Defra's Emission Factor Toolkit 2013 – 2019, February 2020

⁶ Available on the Institute of Air Quality Management website (https://iaqm.co.uk/wp-content/uploads/2013/02/iaqm_uncertainty_vehicle_NOx_emission_withdrawn-02.pdf)

6.4.18 In accordance with Defra guidance, the air quality assessment has been carried out using EFT v13. As model verification has been undertaken, following the latest guidance from the IAQM, it is not considered necessary to carry out a sensitivity analysis. Further information on the model verification factor used in the assessment is provided in Appendix 6.6.

6.4.19 Several steps have been taken to ensure the model is as accurate and representative as possible. These comprise:

- The assessment methodology has been agreed with HBC through the scoping process;
- Traffic data has been provided by Prime Transport Planning, who, at the request of HBC and Hampshire County Council (HCC) (as the competent highways authority), have obtained data from a microsimulation model produced by Systra on behalf of HBC and HCC (see Appendix 6.4 for the traffic data used in the air quality assessment);
- The latest Defra LAQM tools have been incorporated into the assessment following their release in March 2025;
- Meteorological data, obtained from a representative meteorological recording station, has been incorporated into the assessment (Appendix 6.5);
- Road widths and the location of ESRs in relation to each road have been measured in detail to ensure greater accuracy within the model; and
- A number of HBC diffusion tubes have been included within the assessment to allow model verification to take place. Model verification factor(s) have been applied to NO_x concentrations, which are then input into the Defra NO_x to NO₂ calculator tool to predict total NO₂ concentrations at each receptor considered in the assessment (further detail is given in Appendix 6.6).

6.5 Assessment of Effects

Design Solutions and Assumptions

Construction Phase

6.5.1 In accordance with the methodology detailed in the IAQM guidance, the construction phase assessment assumes that no mitigation measures are applied, except those required by legislation. Further site-specific measures, such as a best practice dust mitigation plan, are recommended where the risk of dust impacts is not classed as negligible.

Operational Phase

- 6.5.2 The assessment of operational phase road traffic emissions assumes that no mitigation is applied. Further measures can be recommended based on the significance of the unmitigated effect.

Assessment of Effects – Construction Phase

- 6.5.3 In accordance with the IAQM guidance, the main activities to be considered during the construction phase of the Proposed Development are demolition, earthworks, construction and trackout.
- 6.5.4 Step 2A of the construction phase dust assessment defines the potential dust emission magnitude from demolition, earthworks, construction and trackout in the absence of site-specific mitigation.
- 6.5.5 Step 2B of the construction phase dust assessment defines the sensitivity of the area, taking into account the significance criteria detailed in Tables 6.2 to 6.4 in Appendix 6.2, for demolition, earthworks, construction and trackout. The sensitivity of the area to each activity is assessed for potential dust soiling and human health effects.
- 6.5.6 For demolition there are fewer than 10 residential receptor locations within 50m of where these activities may take place.
- 6.5.7 For earthworks and construction, there are currently between 10 and 100 residential receptor locations within 20m of where these activities may take place, which is assumed to be the Site boundary for the purpose of this assessment.
- 6.5.8 The routing of construction vehicles is unknown at this stage. Therefore, for the purposes of this assessment, a worst-case routing scenario has been assumed for assessment of potential trackout impacts at nearby receptor locations.
- 6.5.9 For trackout, there are between 10 and 100 residential receptor locations within 20m of where trackout may occur for a distance of up to 250m from the Site entrance (in either direction along Church Road/St Mary's Road).

6.5.10 Step 2C of the construction phase dust assessment has defined the risk of impacts from each activity. The dust emission magnitude is combined with the sensitivity of the surrounding area. The risk of dust impacts from each activity, with no mitigation in place, has been assessed in accordance with the criteria detailed in Tables 6.5 to 6.9 in Appendix 6.2.

6.5.11 Table 6.4 below details the results of Step 2 of the construction phase assessment for human receptors.

Table 6.4: Construction Phase Dust Assessment - Human Receptors				
	Activity			
	Demolition	Earthworks	Construction	Trackout
Step 2A				
Dust Emission Magnitude	Small ^a	Large ^b	Large ^c	Medium ^d
Step 2B				
Sensitivity of Closest Receptors	High	High	High	High
Sensitivity of Area to Dust Soiling Effects	Low	High	High	High
Sensitivity of Area to Human Health Effects	Low ^e	Low ^e	Low ^e	Low ^e
Step 2C				
Dust Risk: Dust Soiling	Negligible	High Risk	High Risk	Medium Risk
Dust Risk: Human Health	Negligible	Low Risk	Low Risk	Low Risk
a. Total building volume estimated to be less than 12,000m³. b. Total site area estimated to be more than 110,000m². c. Total building volume to be constructed estimated to be more than 100,000m³. d. Number of construction phase vehicles estimated to be between 10 and 50 movements per day. e. Background annual mean PM₁₀ concentration is taken from the LAQM Defra default concentration maps, as detailed in Appendix 6.2.				

6.5.12 With regard to the significance of an effect, the *IAQM* guidance recommends that this should only be assigned after mitigation measures are implemented. This is because:

“EIA influences the design process and therefore significant adverse environmental effects are either avoided or reduced through design before the proposal is finalised, and thus the pre-mitigation impacts are not relevant”.

6.5.13 As a result, the significance of construction phase effects, with mitigation in place, are detailed in section 6.7.

Assessment of Effects – Operational Phase

Existing Sensitive Human Receptor Locations

6.5.14 The impact assessment has been carried out for the representative existing sensitive receptors considered (i.e. ESR 1 to ESR 20).

6.5.15 Table 6.5 details the predicted NO₂ concentrations for the 2035 Opening/Future Year, for both the 'Without Development' and 'With Development' scenarios, in accordance with Defra guidance (i.e. using EFT v13). The impact has been assessed in accordance with the descriptors included in Appendix 6.2.

Table 6.5: Predicted Adjusted NO₂ Concentrations at Existing Sensitive Receptors for Scenarios 3 and 4 – Using the Emission Factor Toolkit v13.					
Receptor	Calculated Annual Mean NO₂ Concentrations (µg/m³)^a				
	Without Development	With Development		Concentration Change as Percentage of AQUAL	Impact^b
		Concentration	Percentage in Relation to AQUAL		
ESR 1	8.98	9.03	<75%	<0.5%	Negligible
ESR 2	9.12	9.20	<75%	<0.5%	Negligible
ESR 3	9.07	9.17	<75%	<0.5%	Negligible
ESR 4	8.60	8.74	<75%	<0.5%	Negligible
ESR 5	7.43	7.56	<75%	<0.5%	Negligible
ESR 6	8.79	8.84	<75%	<0.5%	Negligible
ESR 7	7.67	7.69	<75%	<0.5%	Negligible
ESR 8	7.45	7.49	<75%	<0.5%	Negligible
ESR 9	7.31	7.34	<75%	<0.5%	Negligible
ESR 10	7.99	8.00	<75%	<0.5%	Negligible
ESR 11	9.37	9.42	<75%	<0.5%	Negligible
ESR 12	9.60	9.63	<75%	<0.5%	Negligible
ESR 13	15.17	15.21	<75%	<0.5%	Negligible
ESR 14	13.60	13.62	<75%	<0.5%	Negligible

Table 6.5: Predicted Adjusted NO₂ Concentrations at Existing Sensitive Receptors for Scenarios 3 and 4 – Using the Emission Factor Toolkit v13.

Receptor	Calculated Annual Mean NO ₂ Concentrations (µg/m ³) ^a				
	Without Development	With Development		Concentration Change as Percentage of AQAL	Impact ^b
		Concentration	Percentage in Relation to AQAL		
ESR 15	13.24	13.27	<75%	<0.5%	Negligible
ESR 16	16.76	16.78	<75%	<0.5%	Negligible
ESR 17	9.41	9.46	<75%	<0.5%	Negligible
ESR 18	8.85	8.89	<75%	<0.5%	Negligible
ESR 19	7.51	7.53	<75%	<0.5%	Negligible
ESR 20	7.54	7.55	<75%	<0.5%	Negligible
<i>a. NO₂ concentrations obtained by inputting predicted NO_x concentrations into the NO_x to NO₂ calculator, in accordance with LAQM.TG(16)</i> <i>b. Assessed using the Impact Descriptors from the EPUK/IAQM guidance, included in Appendix 6.2. Changes of less than 0.5% should be described as negligible</i>					

6.5.16 Table 6.6 details the PM₁₀ concentrations for the 2035 Opening/Future Year, for both the 'Without Development' and 'With Development' scenarios, in accordance with Defra guidance (i.e. using EFT v13). The impact has been assessed in accordance with the descriptors included in Appendix 6.2.

Table 6.6: Predicted Unadjusted PM₁₀ Concentrations at Existing Sensitive Receptors for Scenarios 3 and 4 – Using the Emission Factor Toolkit v13

Receptor	Calculated Annual Mean PM ₁₀ Concentrations (µg/m ³)				
	Without Development	With Development		Concentration Change as Percentage of AQAL	Impact ^a
		Concentration	Percentage in Relation to AQAL		
ESR 1	11.84	11.87	<75%	<0.5%	Negligible
ESR 2	11.16	11.22	<75%	<0.5%	Negligible
ESR 3	10.45	10.52	<75%	<0.5%	Negligible
ESR 4	10.27	10.37	<75%	<0.5%	Negligible
ESR 5	9.53	9.63	<75%	<0.5%	Negligible
ESR 6	10.30	10.33	<75%	<0.5%	Negligible

Table 6.6: Predicted Unadjusted PM₁₀ Concentrations at Existing Sensitive Receptors for Scenarios 3 and 4 – Using the Emission Factor Toolkit v13

Receptor	Calculated Annual Mean PM ₁₀ Concentrations (µg/m ³)				
	Without Development	With Development		Concentration Change as Percentage of AQAL	Impact ^a
		Concentration	Percentage in Relation to AQAL		
ESR 7	9.70	9.71	<75%	<0.5%	Negligible
ESR 8	9.61	9.65	<75%	<0.5%	Negligible
ESR 9	9.51	9.54	<75%	<0.5%	Negligible
ESR 10	9.91	9.92	<75%	<0.5%	Negligible
ESR 11	10.98	11.02	<75%	<0.5%	Negligible
ESR 12	10.78	10.79	<75%	<0.5%	Negligible
ESR 13	14.10	14.12	<75%	<0.5%	Negligible
ESR 14	13.30	13.31	<75%	<0.5%	Negligible
ESR 15	13.22	13.23	<75%	<0.5%	Negligible
ESR 16	14.29	14.30	<75%	<0.5%	Negligible
ESR 17	12.13	12.17	<75%	<0.5%	Negligible
ESR 18	11.75	11.78	<75%	<0.5%	Negligible
ESR 19	9.62	9.63	<75%	<0.5%	Negligible
ESR 20	9.64	9.65	<75%	<0.5%	Negligible
<i>a. Assessed using the Impact Descriptors from the EPUK/IAQM guidance, included in Appendix 6.2. Changes of less than 0.5% should be described as negligible</i>					

6.5.17 Table 6.7 details the PM_{2.5} concentrations for the 2035 Opening/Future Year, for both the 'Without Development' and 'With Development' scenarios, in accordance with Defra guidance (i.e. using EFT v13). The impact has been assessed in accordance with the descriptors included in Appendix 6.2.

Table 6.7: Predicted Unadjusted PM_{2.5} Concentrations at Existing Sensitive Receptors for Scenarios 3 and 4 – Using the Emission Factor Toolkit v13

Receptor	Calculated Annual Mean PM _{2.5} Concentrations (µg/m ³)				
	Without Development	With Development		Concentration Change as Percentage of AQAL	Impact ^a
		Concentration	Percentage in Relation to AQAL		
ESR 1	6.64	6.66	<75%	<0.5%	Negligible
ESR 2	6.58	6.61	<75%	<0.5%	Negligible
ESR 3	6.27	6.31	<75%	<0.5%	Negligible
ESR 4	6.18	6.23	<75%	<0.5%	Negligible
ESR 5	5.79	5.84	<75%	<0.5%	Negligible
ESR 6	6.19	6.21	<75%	<0.5%	Negligible
ESR 7	5.92	5.93	<75%	<0.5%	Negligible
ESR 8	5.88	5.89	<75%	<0.5%	Negligible
ESR 9	5.82	5.84	<75%	<0.5%	Negligible
ESR 10	6.04	6.04	<75%	<0.5%	Negligible
ESR 11	6.64	6.66	<75%	<0.5%	Negligible
ESR 12	6.57	6.58	<75%	<0.5%	Negligible
ESR 13	8.01	8.02	<75%	<0.5%	Negligible
ESR 14	7.57	7.58	<75%	<0.5%	Negligible
ESR 15	7.52	7.53	<75%	<0.5%	Negligible
ESR 16	8.15	8.15	<75%	<0.5%	Negligible
ESR 17	6.80	6.82	<75%	<0.5%	Negligible
ESR 18	6.60	6.61	<75%	<0.5%	Negligible
ESR 19	5.88	5.88	<75%	<0.5%	Negligible
ESR 20	5.89	5.89	<75%	<0.5%	Negligible
<i>a. Assessed using the Impact Descriptors from the EPUK/IAQM guidance, included in Appendix 6.2. Changes of less than 0.5% should be described as negligible</i>					

Proposed Sensitive Receptor Locations

- 6.5.18 One proposed sensitive receptor location (known as PSR 1) has been selected within the Site. The location has been selected to represent the proposed residential area closest to St Mary's Road and the proposed Site access road and is, therefore, positioned along the Site boundary.
- 6.5.19 Pollutant concentrations at the proposed receptor location have been predicted for scenario 4 only (as detailed in paragraph 6.3.13). It is only necessary to consider the 'with development' scenarios for the proposed receptor location as it will not experience any 'without development' conditions. It is not therefore necessary to consider the changes in pollutant concentrations at the proposed receptor location.
- 6.5.20 Details of the proposed sensitive receptor location are provided in Table 6.2, and its location is shown on Appendix 6.7.
- 6.5.21 The predicted NO₂, PM₁₀ and PM_{2.5} concentrations at PSR 1 for the '2035 Opening/Future Year with development scenario' are detailed in Table 6.9.

Table 6.9: Predicted NO₂, PM₁₀ and PM_{2.5} concentrations at Proposed Sensitive Receptor (PSR) Location for the 2035 With Development Scenario (i.e. Scenario 4)			
Receptor	Calculated Annual Mean Concentrations (µg/m³)		
	NO₂ *(Adjusted)	PM₁₀ (Unadjusted)	PM_{2.5} (Unadjusted)
PSR 1	7.41	9.54	5.79
* NO ₂ concentrations obtained by inputting predicted NO _x concentrations into the NO _x to NO ₂ calculator in accordance with LAQM.TG(22). Predicted NO ₂ concentrations also adjusted using monitoring data from HBC.			

Assessment of Significance - Human Receptors

- 6.5.22 The significance of the overall effects of the Proposed Development has been assessed in accordance with the EPUK/IAQM guidance. This assessment is based on professional judgement and details of the assessor's experience is included within the Statement of Expertise at the end of this ES.
- 6.5.23 The assessment of significance has taken into account a number of factors, including:

- Baseline pollutant concentrations in 2023 and 2035 are below the relevant annual mean objectives and limit values at all existing receptors considered.
- The assessment predicts a negligible impact on concentrations of NO₂, PM₁₀ and PM_{2.5} at all existing sensitive receptors considered, with the Proposed Development in place; and
- NO₂, PM₁₀ and PM_{2.5} concentrations within the Site (for PSR 1) are predicted to be below the relevant objectives and limit values.

6.5.24 The impact of the Proposed Development on NO₂, PM₁₀ and PM_{2.5} concentrations is predicted to be negligible for all receptor locations. Therefore, the effect of the Proposed Development on concentrations of NO₂, PM₁₀ and PM_{2.5} is considered to be **‘not significant’** for the purposes of the EIA. As a result, the overall effect of the operation of the Proposed Development on human health is considered to be **‘not significant’** for the purpose of the EIA.

Sensitive Ecological Receptor Locations

6.5.25 Currently, the deposition of nitrogen-containing pollutants (e.g. NO_x) is of most concern for sensitive vegetation communities and ecosystems. An assessment has, therefore, been undertaken to consider the potential effects on nitrogen pollution due to the increased traffic flow on roads within 200m of the Chichester and Langstone Harbours Ramsar and SPA, Solent Maritime SAC, Langstone Harbour SSSI and Chichester Harbour SSSI designated habitat complex (collectively referred to hereafter as the “Chichester and Langstone Harbours complex”).

6.5.26 The ADMS-Roads model has been set up to predict concentrations of released substances across two grids of points covering the extent of the Chichester and Langstone Harbours complex site within, at least, 200m of roads affected by the Proposed Development (i.e. roads which are anticipated to experience additional regular traffic as a result of the Proposed Development).

6.5.27 Nitrogen pollution associated with the Proposed Development has been assessed against critical levels and loads in accordance with Natural England standard practices and guidance.

6.5.28 Concentrations of NO₂ have been predicted by modelling atmospheric concentrations of NO_x, using ADMS-Roads, and converting to NO₂ using Defra's NO_x to NO₂ calculator. The modelled annual mean deposition rates include consideration of emissions from modelled road traffic sources only, and therefore exclude background deposition rates, in order to calculate the impact of the development.

Assessment of Deposition

6.5.29 Natural England and IAQM guidance indicate that the risk of a potentially significant effect can be screened out if the contribution from a development, both in-isolation and in-combination with other relevant schemes, is less than 1% of the relevant critical level / load, even in circumstances where background deposition is close to, or above, the critical level / load.

6.5.30 Should a process contribution of 1% or more of the critical level / load be predicted, it does not necessarily follow that there will be a consequent significant ecological effect; rather, it indicates the potential for such an effect to occur.

6.5.31 Site-relevant critical levels and loads have been obtained from the APIS website for the Chichester and Langstone Harbours complex site. These critical levels and loads are shown in Appendix 6.2 (Table 6.10) and within Table 6.10 below.

2035 Opening / Future Year: In-Isolation

6.5.32 The location within the Chichester and Langstone Harbours designated habitat complex at which the largest increase in pollutant nitrogen (NO_x concentration and nutrient nitrogen deposition rate and nitrogen-derived acid deposition rate) is forecast to occur, as a result of the Proposed Development in-isolation, is at grid reference point 472014.84, 104410 (Grid Point 1242) for NO_x concentration, and at grid reference point 472054.3, 104310 (Grid Point 1074) for nutrient nitrogen and nitrogen-derived acid deposition.

6.5.33 The modelled NO_x concentration, NO₂ concentration, nutrient nitrogen deposition rate and nitrogen-derived acid deposition rate (based on modelled road traffic NO_x emissions only) at these locations are detailed in Table 6.10.

Table 6.10: Modelling Results for Point within the Chichester and Langstone Harbours designated habitat complex which is Predicted to Experience the Largest Increase for 2035 'Without Development' and 'With Development' Scenarios (In-Isolation)				
	Impact Assessment: 2035 Backgrounds and Emission Factors			
	Annual Mean NO _x Concentration (µg/m ³)	Annual Mean NO ₂ Concentration (µg/m ³)	Annual Mean Nitrogen Deposition Rate (kg N/ha/year)	Annual Mean Nitrogen-derived Acid Deposition Rate (kEq/ha/year)
Without Development	21.38	12.95	0.83502	0.05964
With Development	21.60	13.05	0.84942	0.06067
Process Contribution (PC)	0.22	0.10	0.01440	0.00103
Critical Level / Load (CL)	30		8	1.308
PC as % of CL	0.724%		0.180%	0.079%
<i>Deposition rates calculated using the EA recommended deposition velocities for grassland</i>				

2035 Opening / Future Year: In-combination

6.5.34 The location within the Chichester and Langstone Harbours designated habitat complex at which the largest increase in pollutant nitrogen (NO_x concentration and nutrient nitrogen deposition rate and nitrogen-derived acid deposition rate) is forecast to occur, as a result of the Proposed Development in-combination with committed development (see Chapter 8, section 8.4.16 onward for information regarding the committed developments considered) is at grid reference point 472014.84, 104410 (Grid Point 1242) for NO_x concentration, and at grid reference point 472054.3, 104310 (Grid Point 1074) for nutrient nitrogen and nitrogen-derived acid deposition (see Figure 6.1 below).

6.5.35 The modelled NO_x concentration, NO₂ concentration, nutrient nitrogen deposition rate and nitrogen-derived acid deposition rate (based on road traffic NO_x emissions only) at these locations are detailed in Table 6.11.

Table 6.11: Modelling Results for Point within the Chichester and Langstone Harbours designated habitat complex which is Predicted to Experience the Largest Increase for 2035 'Without Development' and 'With Development' Scenarios (In-Combination)

	Impact Assessment: 2035 Backgrounds and Emission Factors			
	Annual Mean NO _x Concentration (µg/m ³)	Annual Mean NO ₂ Concentration (µg/m ³)	Annual Mean Nitrogen Deposition Rate (kg N/ha/year)	Annual Mean Nitrogen-derived Acid Deposition Rate (kEq/ha/year)
Without Development	21.23	12.89	0.83358	0.05954
With Development	21.60	13.05	0.85661	0.06119
Process Contribution (PC)	0.36	0.16	0.02303	0.00165
Critical Level / Load (CL)	30		8	1.308
PC as % of CL	1.214%		0.288%	0.126%
<i>Deposition rates calculated using the EA recommended deposition velocities for grassland</i>				

Assessment of Significance - Ecological Receptors

6.5.36 Natural England and IAQM guidance states that a contribution of less than 1% of the relevant critical level or load can be screened out of requiring further assessment.

6.5.37 Should a process contribution of 1% or more of the critical level or load be predicted, it does not necessarily follow that there will be a consequent significant ecological effect; rather it indicates the potential for such an effect to occur.

6.5.38 Table 6.10 shows that significant contributions from the Proposed Development in isolation can be screened out within the Chichester and Langstone Harbours designated habitat complex for nutrient nitrogen deposition, nitrogen-derived acid deposition and NO_x concentration.

6.5.39 Table 6.11 shows that significant contributions from the Proposed Development in combination (with committed development) can be screened out within the Chichester and Langstone Harbours designated habitat complex for nutrient nitrogen deposition, nitrogen-derived acid deposition. However, the assessment predicts a slight exceedance of the 1% screening criteria for NO_x concentration at a location within 3m of Langstone Road as it crosses over the habitat site (see Figure 6.1). It is

therefore considered that there the potential for a significant effect in relation to NO_x.



Figure 6.1: Map showing the modelled points within the Designated Habitat Complex.

Green points represent locations where the predicted increases in NO_x concentrations, expressed as a proportion of the relevant minimum critical level, are less than 1% and significant contributions can be screened out according to Natural England guidance (i.e. all modelled points). Red points represent the locations within the designated habitat complex where increases in NO_x concentrations are predicted to exceed the 1% threshold, with the yellow point representing the maximum process contribution.

6.5.40 Significant contributions to pollutant nitrogen (nutrient nitrogen deposition and nitrogen derived acid deposition) within the Chichester and Langstone Harbours designated habitat complex can be screened out for the Proposed Development both in-isolation and in-combination with committed development. Effects in relation to these pollutants are therefore considered to be not significant.

6.5.41 A slight exceedance of the 1% screening criteria is predicted to occur for the annual mean NO_x process contribution as part of the In-Combination assessment at a location within 3m of Langstone Road as it crosses over the habitat site.

6.5.42 It should be noted that it does not necessarily mean that there will be a consequent significant ecological effect; rather it indicates the potential for such an effect to occur at this point. The potential ecological effects have been considered within the Ecology chapter (Chapter 7).

6.6 Mitigation

Construction Phase Mitigation

6.6.1 During the construction phase the implementation of effective mitigation measures will substantially reduce the potential for nuisance dust and PM₁₀ to be generated.

6.6.2 Step 2C of the construction phase assessment identified that:

- The risk of dust soiling effects is classed as negligible for demolition, high for earthworks and construction, and medium for trackout; and
- The risk of human health effects is classed as negligible for demolition, and low for earthworks, construction and trackout.

6.6.3 This assumes that no mitigation measures are applied, except those required by legislation. Site specific mitigation measures do not need to be recommended if the risk category is negligible.

6.6.4 Owing to the risk of dust soiling and human health effects being greater than negligible for the majority of activities, site specific mitigation will need to be implemented to ensure dust effects from these activities will be not significant.

6.6.5 A best practice dust mitigation plan (which may be integrated into a construction environmental management plan (CEMP) or similar document) will be written and implemented for the Site. This will set out the practical measures that could be incorporated as part of a best working practice scheme. This will take into account the recommendations included within the *IAQM* guidance, which may include but are not limited to:

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
- Protection of surfaces and exposed material from winds until disturbed areas are sealed and stable;
- Dampening down of exposed stored materials, which will be stored as far from sensitive receptors as possible;
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;
- Avoidance of activities that generate large amounts of dust during windy conditions;
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery;
- Avoid dry sweeping of large areas;
- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the Site. This may require the sweeper being continuously in use;
- Ensure that all vehicles will be sheeted when loaded;
- Ensure vehicles entering and leaving the Site are covered to prevent escape of materials during transport;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the Site where reasonably practicable);
- Confine vehicles to areas of the site where appropriate dust control measures can be in operation;
- Minimisation of vehicle movements and limitation of vehicle speeds – the slower the vehicle speeds, the lower the dust generation;
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the Site exit, wherever the site size and layout permits; and
- Access gates to be located at least 10m from receptors, where possible.

6.6.6 All dust and air quality complaints should be recorded, and appropriate measures be taken to identify causes and reduce emissions in a timely manner. Exceptional

incidents which cause dust and/or emissions, and the action taken to resolve the situation, should be recorded in a logbook and made available to HBC on request.

- 6.6.7 It is recognised that the final design solutions will be developed with the input of the contractor to maximise construction efficiencies, to use modern construction techniques and sustainable materials, and to incorporate the particular skills and experience offered by the successful contractor.

Operational Phase Mitigation

Sensitive Human Receptor Locations

- 6.6.8 An air quality assessment has been undertaken to consider the potential effect of development-generated vehicles on air quality at twenty sensitive human receptor locations.
- 6.6.9 Exceedance of the NO₂, PM₁₀ and PM_{2.5} annual mean air quality objectives/target levels is not predicted to occur in 2035, at any of the twenty existing sensitive receptors considered, for both the 'without development' and 'with development' scenarios.
- 6.6.10 The assessment predicts that there will be a negligible impact and not significant effect on concentrations of NO₂, PM₁₀ and PM_{2.5} at all twenty existing sensitive receptors considered in 2035, with the development in place.
- 6.6.11 The effect of the Proposed Development at the sensitive human receptor locations is considered to be not significant. However, it is good practice to incorporate mitigation measures, which will assist in reducing any potential impact resulting from the development. EV charging points are now standard for all new residential developments with associated car parking spaces. There is potentially further scope to explore other mitigation measures through the detailed design of the proposals and dwellings, as well as the implementation of a green Travel Plan to encourage the use of sustainable modes of travel.

6.7 Residual Effects

Construction Phase Residual Effect

- 6.7.1 Step 4 of the construction phase dust assessment has been undertaken to determine the significance of the dust effects arising from earthworks, construction and trackout associated with the Proposed Development.
- 6.7.2 The implementation of effective mitigation measures during the construction phase, such as those detailed in Step 3, will reduce the potential for nuisance dust and particulate matter to be generated and any residual effect would be temporary and is considered likely to be '**not significant**'.

Operational Phase Residual Effect

- 6.7.3 The effect of the Proposed Development at existing sensitive receptor locations (human) is considered to be not significant and, with the implementation of mitigation strategies, the residual effect will remain '**not significant**' for the purposes of the EIA.
- 6.7.4 The effect of the Proposed Development at the Chichester and Langstone Harbours designated habitat complex conservation site exceeds the 1% screening criteria within guidance for the NO_x critical level, in-combination only. Therefore, the residual effect for NO_x has the potential to be '**significant**' for the purposes of the EIA. Reference should be made the Information to Inform Habitats Regulations Assessment (Appendix 7.2) and Chapter 7 for an assessment of the effects on the designated sites.
- 6.7.5 The effect of the Proposed Development at the Chichester and Langstone Harbours designated habitat complex conservation site does not exceed the 1% screening criteria within guidance for nutrient nitrogen deposition and nitrogen derived acid deposition, both in-isolation and in-combination. Therefore, the residual effect for nutrient nitrogen deposition and nitrogen derived acid deposition will be '**not significant**' for the purposes of the EIA.

6.8 Assessment of Cumulative Effects

Inter-cumulative Effects

- 6.8.1 There is potential for cumulative effects in relation to construction dust in the event that construction of the Proposed Development was to overlap with the construction phases of those schemes set out in Chapter 2. However, taking into account that the

residual effect of construction dust from the Proposed Development is expected to be “not significant” and that those developments granted planning permission would have their own construction dust mitigation measures implemented via CEMPs, DMPs etc. to reduce residual effects to an anticipated “not significant” level, it is not expected that there would be a significant cumulative effect. Moreover, such effects would only be temporary in nature, lasting only for the duration of any period of overlap of construction works.

- 6.8.2 With regards to inter-cumulative effects, the presented results incorporate committed developments within the baseline traffic for the Opening/Future Year scenarios, such that the cumulative impact of the Proposed Development along with other developments has been assessed and has been found to be **‘not significant’**.

Intra-cumulative Effects

- 6.8.3 A slight exceedance of the 1% screening criteria is predicted to occur for the annual mean NO_x process contribution as part of the in-combination assessment at a location within 3m of Langstone Road as it crosses over the Chichester and Langstone Harbours designated habitat complex.
- 6.8.4 It should be noted that it does not necessarily mean that this will result in a significant ecological effect; rather it indicates the potential for such an effect to occur. The potential ecological effects have been considered within the Ecology chapter (Chapter 7).

6.9 Summary

Construction Phase

- 6.9.1 The effect of the construction phase of the Proposed Development has been assessed with mitigation in place, in accordance with the guidance. During the construction phase, site specific mitigation (such as a best practice dust mitigation plan) will be implemented at the Site. With mitigation measures in place the residual effect is considered to be **‘not significant’** at nearby sensitive receptor locations. The implementation of mitigation will ensure that the Proposed Development maintains compliance with relevant guidance including the NPPF.

Operational Phase

- 6.9.2 The overall effect of the Proposed Development on human receptors is considered to be '**not significant**', for the purposes of the EIA. This effect could be reduced further through the implementation of various mitigation strategies. Taking into account potential mitigation strategies, the residual effect is unchanged. The implementation of strategies such as these will ensure that compliance is maintained with NPPF and LAQM legislation (including the Air Quality Objectives).
- 6.9.3 The effect of the Proposed Development at the Chichester and Langstone Harbours designated habitat complex conservation site does not exceed the 1% screening criteria within guidance for nutrient nitrogen deposition and nitrogen derived acid deposition, both in-isolation and in-combination across most of the site. Therefore the residual effect for nutrient nitrogen deposition and nitrogen derived acid deposition will be '**not significant**' for the purposes of the EIA.
- 6.9.4 A slight exceedance of the 1% screening criteria is predicted to occur for the annual mean NO_x process contribution as part of the in-combination assessment at a location within 3m of Langstone Road as it crosses over the habitat site.
- 6.9.5 It should be noted that it does not necessarily mean that this will result in a significant ecological effect; rather it indicates the potential for such an effect to occur. The potential ecological effects have been considered within the Ecology chapter (Chapter 7).
- 6.9.6 A summary of the likely significant residual effects of the Proposed Development during the construction and operational phases are set out in Table 6.12.

Table 6.12: Summary of Significant Residual Effects									
Receptor	Sensitivity (Neg / Low / Medium / High / Very High)	Likely Effect	Secondary Mitigation Proposed?	Magnitude of Impact (Neg / Small / Medium / Large / Very Large)	Nature of Effect (Direct / Indirect)	Temporal Scale (Short / Medium / Long)	Permanence of Effect (Temporary / Permanent)	Type of Effect (Adverse / Beneficial)	Residual Significance (Neg / Minor / Moderate / Major)
Construction Phase									
No significant residual effects									
Operational Phase									
No significant residual effects									

7 ECOLOGY

7.1 Introduction

7.1.1 This Chapter reports the likely significant effects of the Proposed Development in terms of ecology in the context of the Site and surrounding area. In particular it considers the likely significant effects of construction and operation of the Proposed Development on statutory designated wildlife sites, semi-natural habitats and protected/notable species.

7.1.2 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 5), as well as the final chapter, ‘Summary of Residual and Cumulative Effects’ (Chapter 13).

7.2 Legislation, Policy and Guidance

7.2.1 The relevant legislation, policy and guidance are listed below, with details provided in Appendices 7.1 (Ecological Impact Assessment), 7.2 (Information to Inform Habitats Regulations Assessment) and 7.3 (Biodiversity Net Gain Assessment: Design Stage).

Legislative Framework

7.2.2 The applicable legislative framework is summarised as follows:

- Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act 1981 (as amended);
- Natural Environment and Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992; and
- Environment Act 2021.

Planning Policy

7.2.3 The applicable planning policy is summarised as follows:

- Ministry of Housing, Communities and Local Government, 2024. National Planning Policy Framework (NPPF);
- Office of the Deputy Prime Minister, 2005. Government Circular 06/2005: Biodiversity and geological conservation – statutory obligations and their impact within the planning system;
- Havant Borough Local Plan (Core Strategy) March 2011;

- Policy DM8: Conservation, Protection and Enhancement of Existing Natural Features; and
- Policy CS11: Protecting and Enhancing the Special Environment and Heritage of Havant Borough.
- Havant Borough Local Plan (Allocations) July 2014; and
 - Policy DM23: Sites for Brent Geese and Waders; and
 - Policy DM24: Recreational Disturbance to Special Protected Areas (SPAs) from Residential Development.

Guidance

7.2.4 The applicable guidance is summarised as follows:

- Baker, J., 2016. Biodiversity Net Gain: Good practice principles for development. CIEEM, CIRIA & IEMA;
- Chartered Institute of Ecology and Environmental Management, 2016. Guidelines for Assessing and Using Biodiversity Data. Winchester: CIEEM;
- Chartered Institute of Ecology and Environmental Management, 2018. Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Winchester: CIEEM;
- Collins, J., ed., 2016. Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd ed. London: The Bat Conservation Trust; and
- DEFRA, 2019. Natural Environment Planning Practice Guidance: Biodiversity, geodiversity and ecosystems. [online, last updated February 2025] Available at: <https://www.gov.uk/guidance/natural-environment#biodiversity-geodiversity-and-ecosystems>.
- DEFRA, 2024. Statutory Biodiversity Metric. The Statutory Biodiversity Metric. User Guide.

7.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

7.3.1 Ecological receptors are assessed within this chapter where they are determined to be important and where they may be significantly affected by the Proposed Development in the absence of appropriate mitigation.

7.3.2 A feature may be considered to be of importance for a variety of reasons, such as quality and size (in the case of habitats) or rarity and population trends (in the case of species). Aside from these factors, some species are afforded legal protection under

European Directives and/or national legislation. Where such protected species are present, and there is potential for the Proposed Development to result in a breach of legislation, these species are taken to be important features.

7.3.3 The scope of important ecological features upon which the likely significant effects of development are assessed are statutory designated wildlife sites, semi-natural habitats and protected/notable species. These include the Chichester and Langstone Harbours Special Protection Area (SPA), Ramsar and SSSIs, Solent Maritime Special Area of Conservation (SAC), Solent and Isle of Wight Lagoons SAC, Portsmouth Harbour SPA and Ramsar, South Wight Maritime SAC, Solent and Southampton Water SPA and Ramsar site, Sinah Common SSSI, hedgerows, pond habitat, bat species and common reptiles.

7.3.4 Consistent with the Scoping Opinion, particular regard is given to the Site's recognised importance as a Core Area under the Solent Wader and Brent Goose Strategy (SWBGS).

Effects Not Considered within the Scope

7.3.5 The following ecological receptors were initially considered during baseline ecological surveys and appraisal but are scoped-out of this assessment. In the case of designated sites this is generally on the basis of their spatial separation from the Site and the lack of identified potential impact pathways. In the case of habitats and species it is on the basis of their being considered likely absent from the Site, or occurring in insufficient assemblages to constitute an important feature. Further detail is provided in Appendix 7.1:

- Sites of Importance for Nature Conservation;
- Common habitats occurring at the Site (e.g. arable cultivation);
- Badgers;
- Dormice;
- Riparian mammals;
- Other priority mammals (e.g. hedgehog);
- Breeding birds;
- Great crested newts; and
- Invertebrates.

Extent of the Study Area

- 7.3.6 The zone of influence, i.e. the area over which the Proposed Development may give rise to significant effects, varies markedly between the different ecological features, and the zone of influence with respect to many ecological features extends well beyond the boundaries of the Site. The study area for a given ecological feature is made clear within the corresponding survey report or assessment (see Appendices 7.1 and 7.2).

Consultation Undertaken to Date

- 7.3.7 The Applicant has engaged in consultation with Natural England (under their Discretionary Advice Service) as well as the Havant Borough Council Ecologist in the development of the bespoke strategy for the mitigation of impacts on brent geese and the associated coastal nature conservation designations. Full details are provided in Appendix 7.4 (Brent Goose Mitigation Strategy).

Assessment Methodology

- 7.3.8 The assessment presented in this chapter is informed by comprehensive ecological data, used to establish the baseline ecological conditions at the Site. Methods of baseline data collection are detailed within the various species-specific survey reports consolidated within Appendix 7.1. The methods of baseline data collection and assessment were in accordance with current guidance and industry best practice.
- 7.3.9 The assessment method used for predicting and characterising likely ecological impacts and effects is that set out by the Chartered Institute of Ecology and Environmental Management's (CIEEM) 2018 Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. These guidelines form the current, widely acknowledged industry best practice guidance. Full details are provided in Appendix 7.1.

Significance Criteria

- 7.3.10 Impacts and their effects are taken to be significant where they support or undermine biodiversity conservation objectives, with the scale of significance defined according to the geographic context detailed below. The geographic significance scale reflects best practice in ecological impact assessment as set out in the relevant guidance. However, to aid consistency with other disciplines presented within this ES, guidance

is taken from Box et al (2017) on the translation of this scale from one of geographic context to 'Minor', through 'Moderate' to 'Major'.

- International (taken to be Major)
- National (taken to be Major)
- Regional (taken to be Major)
- County (taken to be Moderate)
- District (taken to be Moderate)
- Local (taken to be Minor).

7.3.11 Effects that are deemed to be significant for the purposes of this assessment are those that are described as being of a minor, moderate or major beneficial or adverse level. Where an impact or effect is unlikely to be perceptible at a Local scale, this is taken to be not significant.

7.3.12 It should be noted that in EIA, a 'significant adverse effect' does not necessarily equate to one so severe that planning permission should be refused. Projects with significant adverse ecological effects may be lawfully permitted following EIA procedures, provided that the mitigation hierarchy has been correctly applied during the decision-making process.

7.4 Baseline Conditions

Statutory designated wildlife sites

7.4.1 There are no statutory designations covering any part of the Site.

7.4.2 Eight international statutory designations were identified within 10km of the Site. These were the Chichester and Langstone Harbours Ramsar & SPA (c. 750m east of the Site), Solent Maritime SAC (c. 860m south-east of the Site), Solent and Dorset Coast SPA (c. 880m south of the Site), Solent and Isle of Wight Lagoons SAC (c. 5.38km north-west of the Site), Portsmouth Harbour Ramsar & SPA (c. 8km north-west of the Site), and South Wight Maritime SAC (c. 8.89km south-west of the Site). The Solent and Southampton Water SPA/Ramsar are located over 10km from the Site but are also of relevance to this assessment. Given the legislative frameworks underpinning international designations, these are considered to be important at the **International level**.

7.4.3 Three national statutory designations were identified within 3km of the Site. These were the Sinah Common SSSI (c. 710m south of the Site), Chichester Harbour SSSI (c. 750m east of the Site), and Langstone Harbour SSSI (c. 800m west of the Site). As SSSIs are administered and designated under national legislation, these sites are considered to be important at the **National level**.

7.4.4 The Chichester Harbour and Langstone Harbour SSSIs both form part of the Chichester and Langstone Harbour SPA and Ramsar designations and share special interests/qualifying features. Sinah Common SSSI is a stretch of varying coastal habitats which comprises the western side of south Hayling Beach, Hayling Golf Course and Sinah Common. It is primarily designated for botanical interest and includes a primary support area for the Solent Waders and Brent Geese Strategy (SWBGS). The designation contains public footpaths and road access to the beach and car parks along the south Hayling Island coast.

Habitats

7.4.5 The Site currently comprises two arable fields with areas of neutral grassland with parcels of dense scrub, an on-site pond, a single steel agricultural building and small stretches of both ornamental and native species hedgerows. These habitats are mapped on the graphical Habitats Plan (CSA/4956/103) included with Appendix 7.1. Boundary and field reference numbers used here-in correspond to those shown in the Habitats Plan.

7.4.6 The boundary vegetation, alongside ditch and pond habitats, are described further below, with other habitats present being common and widespread, and consequently scoped out of further assessment.

Boundary vegetation

7.4.7 Boundary hedgerow B4 is a native species hedgerow which runs along the northern boundary, dividing the Site from the St Mary's Churchyard to the north. It predominantly contains hawthorn *Crataegus monogyna*, with standard Scot's pine *Pinus sylvestris* and beech *Fagus sylvatica* trees occasionally present along its length. Spindle *Euonymus europaeus* and Japanese honeysuckle *Lonicera japonica* are infrequently present towards the east of its length. Gaps in the hedge canopy and base

are frequent and the ground vegetation on the Site side is dominated by common nettle.

- 7.4.8 Boundary hedgerow B2 partially encircles the large area of neutral grassland at its northern edge and is dominated by blackthorn *Prunus spinosa*. At the time of the initial field survey in 2021, it had not been recently cut but signs of management were visible on the western and northern edges. To the south and east, the hedgerow adjoins a parcel of dense scrub. There are no gaps along its course, and the vegetation has a dense composition. A seasonally wet ditch with steep sides runs along its length, dividing it from the adjacent cropland field.
- 7.4.9 Hedgerows are a Habitat of Principal Importance in England in respect of the NERC Act 2006 and a Local Biodiversity Action Plan (LBAP) priority habitat in Hampshire and are a specified habitat within Policy DM8 of the adopted Havant Borough Local Plan to be protected and enhanced alongside development. While Hedgerows B2 and B4 are short stretches, when reviewed in a local landscape context where hedgerows and natural linear features appear to be infrequent, they provide connectivity and a refuge for wildlife in an otherwise open and built-up landscape. The two native species of hedgerows are, therefore, considered to be important at a **Local level**.
- 7.4.10 Hedgerow B1 along the southern boundary of the Site is a fragmented, non-native hedgerow which divides the Site from residential gardens. It contains discreet sections of cherry laurel *Prunus laurocerasus*, Leyland cypress *Cupressus x leylandii* and non-native privet *Ligustrum* sp., with occasional bramble, hedge bindweed *Calystegia sepium* and honeysuckle *Lonicera periclymenum*.
- 7.4.11 Boundary hedgerow B3 is a short section of non-native species hedgerow along the north-eastern edge of the Site. It contains buddleia *Buddleia* sp., cotoneaster, cherry laurel and hawthorn. As a result of their short length and dominant composition of non-native and ornamental plant species, Hedgerows B1 and B3 are considered to be of negligible importance in a Local context and have been scoped out of further assessment.
- 7.4.12 Boundary tree line B5 runs along the southern border between the western-most edge of the off-site residential gardens to the Site's western boundary. It is dominated

by blackthorn, wych elm *Ulmus glabra* and damson *Prunus insititia*. While this tree line is a short stretch, it comprises native semi-mature to early mature trees, as well as a dense undergrowth at the base which provides connective opportunities for wildlife. This treeline is considered to be important at the **Local level**.

Ditch

7.4.13 A seasonally wet ditch runs centrally east to west through the Site, dividing Field F1 from the large parcel of semi-improved grassland to the east and Field F2, continuing south along the western boundary of Field F2. This ditch does not maintain consistent water levels and becomes smothered with vegetation during the summer months. Aquatic and marginal vegetation is absent, reflecting its dry condition for the majority of the year.

7.4.14 A second seasonally wet drainage ditch runs along the northern boundary of Field F1. The ditch slopes downward towards the eastern extent, resulting in greater inundation levels to the east, while the western extent remains predominantly dry year-round. This is evidenced by the grass-dominated vegetation within the channel of the western extent, where vegetation indicative of wetter conditions is absent. By contrast, the easternmost extent of the ditch presents iris *Iris* sp., sedges *Carex* sp. and hemlock water dropwort *Oenanthe crocata* within the channel and along bank faces. This ditch becomes smothered by bracken and bramble scrub along the majority of its length over the summer months.

7.4.15 While the on-site ditches frequently dry out and become smothered by common grasses and ruderal vegetation in the summer months, making them unlikely to support a rich or diverse fauna, ditches are a habitat identified within Policy DM8 of the adopted Havant Borough Local Plan to be protected and enhanced alongside development, and opportunities to enhance those on-site are available. The on-site ditches are, therefore, considered to be important at the **Local level**.

Pond

7.4.16 The pond present within the Site is located at the north-eastern corner of Field F1, centrally along the southern edge of Field F2 and to the west of the large parcel of neutral grassland, giving it a relatively central location within the Site. It is approximately 150m² and is surrounded on all aspects by dense scrub and ruderal

vegetation. A large area of the pond was dominated by Bulrush *Typha latifolia* at the time of the field surveys in both 2021 and 2024. This pond directly connects to the field drain which divides Field F1 and F2, which receives run-off from the surrounding cropland. The pond maintains water throughout the year but becomes smothered by surrounding scrub and aquatic vegetation during the summer months.

- 7.4.17 Ponds are scarce in the local landscape and, while the on-site pond is in unfavourable condition due to the surrounding environment, Policy DM8 of the adopted Havant Borough Local Plan sets out ponds as a habitat which should be protected and enhanced as part of development proposals. The on-site pond is, therefore, considered to be important at the **Local level**.

Species

Bats

- 7.4.18 A total of 457 bat records were identified in the local area within data held by Hampshire Biodiversity Information Centre (HBIC). These include common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared *Plecotus auritus*, unconfirmed long-eared bats *Plecotus* sp., Nathusius's pipistrelle *Pipistrellus nathusii*, noctule *Nyctalus noctule*, Natterer's bat *Myotis nattereri*, whiskered bat *Myotis mystacinus*, Daubenton's bat *Myotis daubentonii*, Bechstein's bat *Myotis bechsteinii*, unconfirmed *Myotis* sp. and serotine *Eptesicus serotinus*.
- 7.4.19 These records are widely distributed around the Site, predominantly within the surrounding residential areas.
- 7.4.20 Notable records include a small cluster c. 40m north of the Site from within the grounds of St Mary's Churchyard immediately adjacent to the northern boundary of the Site. This cluster contains roost records for brown long-eared, serotine and unconfirmed pipistrelle bats, as well as common pipistrelle passes. Further roost records are present across the search area, all except one dating prior to 2013, including a common pipistrelle roost dating from 2001 c. 360m south of the Site with a peak count of 347 individuals.
- 7.4.21 Records held by HBIC for the Site itself relate to those submitted by CSA following survey work in 2021. A summary of the results is included below.

- 7.4.22 There are no granted European Protected Species (EPS) licenses returned within 1km of the Site, with the closest present c. 1.1km north of the Site permitting the destruction of a resting place in relation to brown long-eared bat, common pipistrelle and soprano pipistrelle, dating between 2018 and 2019.
- 7.4.23 On-site roosting opportunities are limited, with a single on-site building comprising a metal frame, roof and sides, with negligible roosting potential. The boundary vegetation to the north and south of the Site contains semi-mature to mature trees which may have potential roost features, however, these were not assessed as part of a preliminary roost assessment.
- 7.4.24 The majority of the Site is open cropland and grassland with parcels of dense scrub, hedgerows and boundary treelines providing relatively disconnected corridors of connectivity. The on-site pond, as well as the aforementioned habitats, support foraging opportunities for bats due to associated higher invertebrate densities.
- 7.4.25 Walked transect and static monitoring surveys were undertaken in May, July and September 2021. The results of the activity surveys concluded that the Site was regularly utilised by foraging common pipistrelle and soprano pipistrelle, with these species accounting for 92% of passes during the transect surveys and over 95% during the static monitoring. Less common species, such as brown long-eared, potential *Nathusius'* pipistrelle and *Myotis* sp., were occasionally present. The species infrequently recorded are likely to be utilising the connective features within the Site, such as boundary vegetation, for occasional foraging and general dispersal. Activity hotspots within the Site occur along the western and southern boundary vegetation of Field F1, around the on-site pond and in the north-east corner of Field F2. These areas all present greater foraging opportunities as they are likely to support higher invertebrate densities than the remainder of the Site which is generally open and unsuitable for bats.
- 7.4.26 Update bat surveys comprised three seasonal night-time bat walkover surveys undertaken at the Site in spring (May), summer (July) and autumn (September) 2024. During these surveys, at least two species of bat were recorded at the Site, comprising common pipistrelle, accounting for 64.66% of the total contacts, and soprano

pipistrelle, accounting for 35.34%. Overall, each of the three transect surveys experienced low activity levels, with activity concentrated around the western boundary of the southern field, the on-site pond and north-eastern boundary adjacent to the off-site churchyard. During the vantage point element of the May survey, the surveyor observed the western boundary (Boundary B5) of the southern field being utilised as a commuting corridor by up to 19 individual common pipistrelle flying from the south in a northern/north-western direction.

7.4.27 Automated static monitoring was conducted monthly between April and October 2024, using three static detectors on each occasion, located along the northern, central and southern boundaries of the Site. Consistent with the results of the transect surveys, bat activity during the static monitoring was dominated by common pipistrelle (70.37% of total bat contacts), followed by soprano pipistrelle (22.08%). However, a greater diversity of species was recorded during the remote monitoring surveys, including Nathusius' pipistrelle, noctule, Leisler's bat, barbastelle *Barbastella barbastellus*, brown long-eared bat, serotine and unconfirmed *Myotis* sp.

7.4.28 A total of five barbastelle contacts were detected across the remote monitoring surveys, recorded relatively evenly across the Site. Although widespread in Hampshire, barbastelle are nationally rare and noted for their susceptibility to disturbance by artificial light. The Site is anticipated to be used as part of a wider territory, with no indication of habitual/regular use by the species.

7.4.29 Full methods and results of these surveys are provided in Appendix 7.1.

7.4.30 Determination of importance of bat species recorded at the Site is based upon the surveys undertaken as detailed above, with regard to the scoring system published in updated guidance by Reason and Wray (2023), which review the bat assemblage at the Site in relation to its diversity and the rarity of the species present. Based on the species recorded on-site throughout the surveys, a combined score of 20 is reached, on the assumption that *Myotis* bat activity most likely comprised of two widespread species, such as Daubenton's bat and Natterer's bat. This total score is indicative of a bat assemblage of up to **County importance**. The full valuation table is provided in Appendix 7.1.

Reptiles

- 7.4.31 A total of nine records of three reptile species were returned from within the search area, dating from 1999-2021. These included slow worm *Anguis fragilis*, grass snake *Natrix helvetica* and adder *Vipera berus*. The closest record to the Site is of six slow worm associated with a residential garden (c. 470m south-east), dating from 1999. Suitable reptile habitat on-site is limited to the narrow arable field margins and hedgerow bases, as well as the areas of tussocky neutral grassland and scrub.
- 7.4.32 Surveys undertaken by CSA in 2021 determined slow worm present at the Site, in particular along the northern boundary which adjoins the St Mary's Churchyard, with a peak adult count of 69 individual slow worm found along this boundary during one survey. This species was found across the wider Site, albeit in much lower densities than were found along the northern boundary. No other reptile species were recorded on-site during the surveys.
- 7.4.33 Update reptile surveys comprised seven survey visits undertaken between May and July 2024, which resulted in peak counts of 39 adult slow worm and 22 juvenile slow worm. The species were recorded in all locations where refugia were present, with the greatest number recorded within the neutral grassland present within the eastern portion of the Site. No other reptile species were recorded within the Site. The Site is believed to support a moderate population of slow worm. Full methods and results of these surveys are provided in Appendix 7.1.
- 7.4.34 Slow worm are a S41 species of principal importance and are afforded protection against killing and injury under the Wildlife and Countryside Act 1981. The population of slow worm present at the Site is considered to be important at the **Local level**. With reference to the presence of local records for grass snake and the presence of suitable habitat on-site, it is possible that individual grass snake may make use of the Site as part of a wider home range. On this basis, grass snake are also included within further assessment on the basis of their legal protection. Habitats at the Site are less suitable for adder and they are scoped out of further assessment on this basis. Full details of the reptile surveys are provided in Appendix 7.1.

Future Baseline

7.4.35 The Site is presently under active arable management, including the periodic cutting of field margins and hedgerows. Notwithstanding the rotation of crop-type, these management interventions maintain the majority of on-site conditions in a relatively stable state. There is no known intention to cease this management, other than to accommodate the Proposed Development should planning permission be granted. While the peripheral areas of grassland and scrub do not appear to be routinely managed, leading to a natural state of succession and encroachment, the habitats themselves have remained consistent over the intervening time period between the 2021 and 2024 field surveys. As such, the future baseline status of important ecological features is not anticipated to vary substantially from that at present.

7.4.36 Notwithstanding the above, it will be important for any future reserved matters application to be informed by an up to date understanding of baseline ecological conditions (see Assumptions below).

Sensitive Receptors

7.4.37 The baseline ecological conditions are fully described in Appendix 7.1 (Ecological Impact Assessment). The importance of each ecological feature potentially exposed to significant effects, akin to their sensitivity in EIA terms, is summarised as follows:

- Chichester and Langstone Harbours SPA and Ramsar are important at the **International level**;
- Solent Maritime SAC is important at the **International level**;
- Solent and Dorset Coast SPA is important at the **International level**;
- Solent and Isle of Wight Lagoons SAC is important at the **International level**;
- Portsmouth Harbour SPA and Ramsar are important at the **International level**;
- South Wight Maritime SAC is important at the **International level**;
- Solent and Southampton Water SPA and Ramsar are important at the **International level**;
- Sinah Common SSSI is important at the **National level**;
- Chichester Harbour SSSI is important at the **National level**;
- Langstone Harbour SSSI is important at the **National level**;
- On-site native hedgerows B2, B4 and B5 are important at the **Local level**;
- The on-site ditches are important at the **Local level**;
- The on-site pond is important at the **Local level**;

- Bat populations using the Site are important at the **County level**; and
- Common reptile populations using the Site are important at the **Local level**.

Limitations

7.4.38 Methodological limitations to baseline ecological data collection are set out in Appendix 7.1. However, in each case the stated limitations are not considered to materially undermine the validity or reliability of conclusions set out here-in.

7.4.39 The update site walkover (2024) was undertaken outside of the optimum flowering time for the habitats present within the Site, however, this was supplemented by in-season Habitat Condition Assessments of the on-site habitats, which was used to confirm habitat type classifications. Limitations to specific surveys are addressed within Appendices G-J of the EclA report (in Appendix 7.1 of this ES).

7.5 Assessment of Effects

Design Solutions and Assumptions

Assumptions

7.5.1 The following assumptions have been made during the assessment of potential effects of the Proposed Development on important ecological features. Although 'assumed' and therefore taken as part of the pre-mitigation scenario, these measures may be referenced in the proceeding sections where integral to the mitigation strategy.

7.5.2 In accordance with BS42020:2013, it is assumed that a Construction Environmental Management Plan (CEMP) will be secured by planning condition and prepared at the detailed design stage for each phase (where relevant) of development. In addition to the construction phase impact avoidance and mitigation measures identified in the following sections, the CEMP will detail standard environmental control measures, including though not limited to the following:

- Implementation of strict protection measures for the root protection areas of retained hedgerows and trees, in accordance with BS5837:2012;
- Standard best practice construction phase pollution prevention and control measures, including measures for dust suppression;
- Sensitive working methods and timing to avoid direct impacts to nesting birds (generally vegetation removal outside nesting season of March through August); and

- Updated ecological surveys, where necessary, to identify shifts in the baseline ecological condition so that revised impact avoidance and mitigation measures can be adopted as required (e.g. creation of new badger setts).

7.5.3 In accordance with BS42020:2013, it is assumed that a Landscape and Ecology Management Plan (LEMP) will be secured by planning condition and prepared at the detailed design stage for each phase (where relevant) of development. The LEMP will set out measures for the establishment and long-term management of newly created and retained habitats to maximise benefits for biodiversity while also providing amenity for new residents.

7.5.4 It should be noted that the impact assessment for European Sites herein has been completed in-line with the Habitats Regulations Assessment process. Potential impact pathways are considered on the basis of the development as proposed, i.e. including any facets which, in addition/secondary to their primary purpose, may act to mitigate effects that might otherwise occur on European sites. However, in accordance with the 'People Over Wind' ruling of the Court of Justice for the European Union (CJEU; Case C-323/17), screening for likely significant effects takes place in the absence of measures specifically adopted to avoid or reduce harmful effects on European sites (see Appendix 7.2 for details).

Design Solutions

7.5.5 It is an established principle (CIEEM, 2018) that, wherever possible, potential negative effects should be avoided through 'Mitigation by Design', as this gives greater certainty over deliverability, demonstrates a well-designed scheme and ensures the correct application of the 'Mitigation Hierarchy' (as advocated by BS42020:2013, Defra 2019 and CIEEM, CIRIA & IEMA 2016).

7.5.6 As demonstrated by the Parameters Plan (Appendix 1.2), the Proposed Development can retain existing native species hedgerows as well as incorporate new planting within strategic Green Infrastructure to enhance connectivity within the Site and to the surrounding landscape. Green Infrastructure will be designed at a later stage of planning, but will incorporate varying habitats including grassland and scrub, as well as new planted trees and hedgerows. These features will provide habitats for a variety

of species, as well as providing areas of connectivity for wildlife through the Site to the surrounding landscape.

- 7.5.7 In relation to reptile habitat, while much of the existing on-site suitable reptile habitat will be removed to accommodate construction, the Parameters Plan (Appendix 1.2) provides ample space for an overall increase in suitable reptile habitat, subject to detailed design. New green space in the north-west of the Site will feature structural landscape planting, addressing the present lack of connective features, which is likely the cause of the reduced baseline bat activity in this part of the Site. Existing features of value such as the hedgerows and pond will be retained, as set out above, in accordance with the mitigation hierarchy.

Assessment of Effects

European sites

- 7.5.8 An assessment of potential effects of the Proposed Development on European Sites, both alone and in combination with other plans and projects, is presented separately as Information to Inform Habitats Regulations Assessment (Appendix 7.2). The assessment is not repeated here, however the identified potential impact pathways in the absence of mitigation are summarised below.
- 7.5.9 The qualifying habitats and species of the Chichester and Langstone Harbours SPA and Ramsar site (which are shared with the special interests of the overlapping SSSI designations) are known to be vulnerable to recreation pressure. The Proposed Development will result in an increase in the local population, so potential impacts on the SPA/Ramsar were screened in for further assessment. No likely significant effect is anticipated as a result of the Proposed Development in isolation (as any such increase will be negligible as a proportion of the existing population within the recreational catchment of the designation) however in-combination impacts are discussed below (section 7.8).
- 7.5.10 The Site's importance for feeding waterfowl associated with the SPA and Ramsar designations of Chichester and Langstone Harbours, Portsmouth Harbour and the Solent and Southampton Water is recognised through its adoption as a Core Area under the Solent Wader and Brent Goose Strategy. Even beyond the spatial extent of

a designation, any damage, deterioration or loss of supporting habitat has the potential to undermine conservation objectives.

7.5.11 Dark-bellied brent geese have previously been recorded at the Site, with a peak count of 1100 individuals feeding during the winter of 2016/2017. Updated winter bird surveys undertaken in 2021/2022 recorded a peak count of 600 individuals within the Site, with brent geese present during three of the eight surveys. The arable land dominating the Site undergoes regular management changes, including crops planted and management regimes associated with each crop across different years. This leads to fluctuations in the numbers of brent geese using the Site in a given year. Previous winter bird surveys undertaken at the Site in the winter of 2017/18, and update surveys undertaken in the winter of 2023/2024 recorded no brent geese, suggesting that the Site was under unfavourable management for the species at these times.

7.5.12 Under favourable management, the Site is capable of fulfilling an important role as supporting habitat for the SPA and Ramsar (and SSSI) birds, and its loss to accommodate development has the potential to undermine the conservation objectives of the corresponding designations. In the absence of mitigation the Proposed Development may result in a **moderate adverse effect** on the Chichester and Langstone Harbours SPA and Ramsar site (and overlapping SSSIs), Portsmouth Harbour SPA and Ramsar site and the Solent and Southampton Water SPA and Ramsar site. This effect would be **significant**, prior to the implementation of mitigation measures.

7.5.13 In respect of the remaining European sites of the East Solent system scoped into assessment (Solent and Dorset Coast SPA, Solent Maritime SAC, Solent and Isle of Wight Lagoons SAC and South Wight Maritime SAC) **no significant adverse effects** of the Proposed Development in isolation are anticipated (see Appendix 7.2).

7.5.14 No likely significant effects on European sites are anticipated to arise in relation to recreational pressure, eutrophication of the water environment linked to foul water discharges or air quality impacts from vehicular emissions, as a result of the Proposed Development in isolation. In-combination effects with other plans and projects have been addressed within section 7.8.

Sinah Common SSSI

- 7.5.15 The Sinah Common SSSI comprises a large stretch of the west side of Hayling Beach and neighbouring leisure grounds, including Hayling Golf Club and Hayling Ferry Sailing Club. One potential impact pathway has been identified in the form of recreational pressure.
- 7.5.16 The SSSI is made up of two units. Unit 2 supports the Hayling Golf Club in the west of the SSSI, and the East Winner Sandbank to its south. Unit 1 to the east includes Hayling Island Beach, a popular tourist location which is likely to face the greatest recreational pressure.
- 7.5.17 Both Units were most recently assessed by Natural England, in 2010, as being in unfavourable but recovering condition. In respect of Unit 2 it is remarked that the, *“shingle bank in the southern part of the unit is remarkably species-rich despite the high visitor pressure.”* Concern is raised over heavy trampling in Unit 1, however this is limited to a discrete area where visitor pressure is channelled by fencing. Overall, there is no indication that visitor pressure is having a limiting effect on the special interests of the designation, and a minor increase in the local population brought about by the Proposed Development is therefore **unlikely to result in a significant adverse effect** via this pathway.
- 7.5.18 Chichester Harbour SSSI and Langstone Harbour SSSIs are included above under the discussion of the Chichester and Langstone Harbours SPA/Ramsar.

Hedgerows

- 7.5.19 The native species hedgerows on-site provide connectivity for wildlife both within the Site and the wider landscape. The Parameters Plan (Appendix 1.2) provides for the retention of these features alongside development, with their incorporation within strategic Green Infrastructure. With good construction management practises (see ‘Assumptions’ above), **no significant adverse effects** upon the existing hedgerows are anticipated to result from the Proposed Development.

Ditches

- 7.5.20 The on-site ditches are to be retained in their entirety alongside development and will benefit from the cessation of arable production as they will no longer receive run-off

from agricultural inputs such as fertilizers and insecticides. Moreover, enhancement opportunities are available through targeted management practices. **No significant adverse effect** upon the on-site ditches is anticipated as a result of the Proposed Development.

Pond

- 7.5.21 The on-site pond is to be retained as an integrated component of the Green Infrastructure of the Proposed Development, as illustrated within the Parameter Plan. **No significant adverse effect** on the local pond habitat resource will result from the Proposed Development; rather an opportunity is created to increase the biodiversity value of the feature through introduction of appropriate management, as well as new aquatic and seasonally wet habitat creation as part of the drainage strategy (subject to detailed design).

Bats

- 7.5.22 The Site supports a moderate assemblage of predominantly common and widespread species which utilise the area for foraging and general dispersal. The majority of bat activity is concentrated to features of connectivity, such as boundary vegetation, and to areas of increased foraging opportunities, including the on-site pond, which are all to be retained within strategic Green Infrastructure as shown on the Parameter Plan. The creation of new areas of habitat suitable for bats may be delivered, subject to detailed design, such as tree lines extending through the centre of the Site, connecting the off-site woodland west of the Site to the central retained pond and the area of proposed greenspace to the north of the Site. The two proposed attenuation basins, if appropriately landscaped and managed, will provide an increase in aquatic invertebrate habitat, which will, in turn, deliver greater foraging opportunities to bats within the Site.
- 7.5.23 Negative effects on bats could in principle be encountered as a result of the increase in artificial lighting within the residential area, which is situated near the Site's main hotspots in the southern and western boundaries of Field F1 (see Appendix 7.1). However, on balance of the fact that baseline activity at the Site is heavily dominated by species which adapt readily to the suburban environment (exemplified here by the concentrations of their activity at the residential interfaces in the south of the Site), the cessation of arable cultivation and opportunities created within new Green

Infrastructure, **no significant adverse effects** on local bat populations are anticipated to result from the Proposed Development.

Reptiles

7.5.24 The majority of the Site is unsuitable for reptiles, supporting homogenous arable cultivation. The narrow field margins and area of grassland and scrub in the east however provides foraging, basking and refuge opportunities for reptiles and surveys have confirmed these habitats to support a concentrated population of slow worms. Grass snake, if present, are expected to occur in very low numbers.

7.5.25 Much of these habitats will be lost to accommodate the Proposed Development. However, the Parameters Plan allocates a minimum of 4.21ha of the 11.77ha site for Green Infrastructure which, subject to suitable habitat creation and management and in combination with the new residential gardens, has the potential to result in a significant increase in suitable slow worm habitat at the Site level. New habitat creation within public open space and its future management will be determined at the detailed design stage.

7.5.26 Notwithstanding this, site preparation works will directly impact upon slow worm habitats and could, in the absence of mitigation, result in the killing and injury of individual slow worms and grass snakes. While such an impact would be unlikely to undermine local population viability, and the Proposed Development is anticipated to have **no significant adverse effect** on local reptile populations, it would constitute an offence under the Wildlife and Countryside Act 1981.

7.6 Mitigation

7.6.1 The following mitigation measures to address likely significant adverse effects on European sites and potential negative impacts on slow worms are in addition to the mitigation by design (or 'embedded mitigation') as set out at paragraph 7.5.5 et seq. No additional mitigation is required for other ecological receptors.

European sites

7.6.2 It has been ascertained within the accompanying Information to Inform Habitats Regulations Assessment (Appendix 7.2) that, in the absence of mitigation, the Proposed Development has the potential to result in significant adverse effects on

European site designations (as well as two overlapping SSSIs) as a result of the loss of supporting habitat used by dark bellied brent geese. In summary, it is proposed that a permanent bird refuge be created, and its management funded by the Applicant for the specific purpose of supporting wintering brent geese. Full details are provided in Appendix 7.4.

Reptiles

- 7.6.3 A large portion of existing suitable slow worm habitat within the Site will be lost to the Proposed Development during the construction phase; primarily the large area of semi-improved grassland to the east. It is illegal to recklessly kill or injure a reptile under the Wildlife and Countryside Act 1981, therefore a Reptile Mitigation Strategy will be required.
- 7.6.4 The Reptile Mitigation Strategy will be prepared at the detailed design stage, however, broadly, it is envisaged that this will entail a capture, exclusion and translocation exercise to an on-site receptor area. The receptor area will need to be created in advance and enhanced to suitable condition such that its carrying capacity will not be exceeded by the donor population. It is envisaged that the receptor area will be located within informal open space in the north-west of the Site, which shares connectivity with suitable off-site habitats. Exclusion fencing will be maintained in-situ for the duration of construction activities for each phase of development (where relevant).
- 7.6.5 The Reptile Mitigation Strategy will need to operate in tandem with the LEMP, to ensure that high quality habitat is maintained on-site such that reptiles are not displaced, and the carrying capacity of adjacent land exceeded.

7.7 Residual Effects

- 7.7.1 Subject to the proposed creation of a permanent bird refuge as detailed within Appendix 7.4, it can be concluded that the Proposed Development will have **no significant residual adverse effect** on the Chichester and Langstone Harbours SPA and Ramsar Site, Portsmouth Harbour SPA and Ramsar site or Solent and Southampton Water SPA and Ramsar site as a result of impacts associated with loss of supporting habitat.

- 7.7.2 Subject to the preparation of a Reptile Mitigation Strategy at the detailed design stage and its implementation during construction, centred around a capture, exclusion and translocation exercise and the provision of new habitat opportunities within detailed soft landscaping, it is anticipated that the Proposed Development will have **no significant residual adverse effect** on reptile species.
- 7.7.3 Following assessment, **no significant residual effects** on any other important ecological features are anticipated to result from the construction or operation of the Proposed Development when considered in isolation.
- 7.7.4 A summary of the likely residual effects of the Proposed Development during the construction and operational phases are set out in Table 7.1.

Table 7.1 Summary of Residual Effects (Proposed Development in isolation)									
Ecological Feature	Importance (Local, County, Regional, National, International)	Impact	Secondary Mitigation Proposed?	Magnitude of Impact (Neg / Small / Medium / Large / Very Large)	Nature of Effect (Direct / Indirect)	Temporal Scale (Short / Medium / Long)	Permanence of Effect (Temporary / Permanent)	Type of Effect (Adverse / Beneficial)	Residual Significance (Neg / Minor / Moderate / Major)
Construction Phase									
Chichester and Langstone Harbours SPA and Ramsar, Portsmouth Harbour SPA and Ramsar, Solent and Southampton Water SPA and Ramsar	International	Loss of functionally linked land supporting dark bellied brent geese	Delivery of permanent refuge site under Brent Goose Mitigation Strategy	Small	Indirect	Long-term	Permanent	Adverse	Negligible (not significant)
Portsmouth Harbour SPA and Ramsar, Solent Maritime SAC, Solent and Dorset Coast SPA, Solent and Southampton Water SPA and Ramsar, Solent and Isle of Wight Lagoons SAC, Solent and Dorset Coast SPA, South Wight Maritime SAC	International	None	N/A	N/A	N/A	N/A	N/A	N/A	Negligible (not significant)

Table 7.1 Summary of Residual Effects (Proposed Development in isolation)									
Chichester Harbour SSSI, Langstone Harbour SSSI, Sinah Common SSSI	National	None	N/A	N/A	N/A	N/A	N/A	N/A	Negligible (not significant)
On-site hedgerows, ditches and pond	Local	None	N/A	N/A	N/A	N/A	N/A	N/A	Negligible (not significant)
Bat populations	County	None	N/A	N/A	N/A	N/A	N/A	N/A	Negligible (not significant)
Reptile populations	Local	Killing or injury of individuals during site preparation	Reptile mitigation strategy, likely to include translocation to an on-site receptor	Small	Direct	Short-term	Temporary	Adverse	Negligible (not significant)
Operational Phase									
Chichester and Langstone Harbours SPA and Ramsar	International	Increased recreation pressure	Financial contribution to Solent Recreation Mitigation Strategy	Small	Indirect	Long-term	Permanent	Adverse	Negligible (not significant)
Chichester Harbour SSSI, Langstone Harbour SSSI	National								
Chichester and Langstone Harbours SPA and Ramsar, Portsmouth Harbour SPA and Ramsar, Solent Maritime SAC, Solent and Dorset	International	None	N/A	N/A	N/A	N/A	N/A	N/A	Negligible (not significant)

Table 7.1 Summary of Residual Effects (Proposed Development in isolation)									
Coast SPA, Solent and Southampton Water SPA and Ramsar, Solent and Isle of Wight Lagoons SAC, South Wight Maritime SAC									
Sinah Common SSSI	National	None	N/A	N/A	N/A	N/A	N/A	N/A	Negligible (not significant)
On-site hedgerows, ditches and pond	Local	None	N/A	N/A	N/A	N/A	N/A	N/A	Negligible (not significant)
Bat populations	County	None	N/A	N/A	N/A	N/A	N/A	N/A	Negligible (not significant)
Reptile populations	Local	None	N/A	N/A	N/A	N/A	N/A	N/A	Negligible (not significant)

7.8 Assessment of Cumulative Effects

7.8.1 Cumulative effects arise when collectively significant impacts (even when considered individually insignificant) occur over time or are concentrated at a given location. The assessment of potential cumulative effects is based on the post-mitigation scenario (i.e. residual effects) of the Proposed Development. Effects may be inter-cumulative (in combination with other developments) or intra-cumulative (in combination with other environmental effects on a common receptor) and may be additive or synergistic. The potential for intra-cumulative effects is considered in Table 7.2 below.

Table 7.2 Summary of potential intra-cumulative effects		
Important Ecological Feature	Identified potential impacts, in the absence of mitigation	Potential for significant intra-cumulative effect?
Solent European Sites	- Recreation pressure (increased population) - Loss of supporting habitat / functionally linked land (a Core Area)	No, as recreation pressures will be fully mitigated by funded measures under the Solent Recreation Mitigation Strategy, and the loss of supporting habitat will be compensated (see Brent Goose Mitigation Strategy)
Bats	- Habitat loss - Disturbance to foraging and dispersing bats through artificial lighting	No, as key habitat features will be retained and enhanced alongside new habitat creation, and bat species present are not notably light-averse
Reptiles	- Loss of existing habitats used by reptiles - Killing or injury of individuals during construction	No, as the Proposed Development will deliver a net increase in habitat availability, and construction phase measures will be implemented to avoid killing and injury

7.8.2 Assessment of the Proposed Development when considered in isolation has identified no likely significant residual adverse effects on important ecological features, following the consideration of both mitigation by design and additional mitigation that may be secured by planning condition. Table 7.3 below summarises the plans/projects to be considered within the inter-cumulative effects and considers the potential for cumulative effects on the ecological features assessed above.

Table 7.3 Summary of potential inter-cumulative effects		
Reference, distance from Site and materials reviewed	Potential impact/effect of plan or project in isolation	Potential for significant cumulative effect?
APP/20/01093 c. 800m west Land at Sinah Lane, Hayling Island	<i>Winter birds</i> – site is designated as a Core Area within the SWBGS, the southern part of which will be lost as a result of development	Yes, though will not be realised as negative effects of both developments will be fully compensated
Extended Phase 1 Habitat Survey – WYG, November 2020	<i>Solent European Sites</i> – likely increases in recreational pressure and eutrophication	Yes – see assessment set out below. Subject to financial contributions toward the Solent Recreation Mitigation Strategy, and adherence to nutrient neutrality, no significant negative cumulative effects
Reptile Survey Report – WYG, November 2020		
Bat Survey Report – WYG, November 2020		
Winter Bird Mitigation Strategy – WYG, February 2021	<i>Reptiles</i> - the site supports a low population of slow-worm which would be impacted upon in the absence of mitigation	No, as both schemes are to be subject to mitigation anticipated to avoid negative impacts, therefore there will be no cumulative effects
Habitats Regulations Assessment: Screening & Appropriate Assessment – Havant Borough Council, March 2021	<i>Bats</i> - site considered important at the local level for foraging and dispersing bats. Disruption via lighting may have negative effects upon local populations	No, as both schemes are to be subject to mitigation anticipated to avoid negative impacts, therefore there will be no cumulative effects
APP/22/00001 adjoins the south-west of the Site 49-71 Fathoms Reach, Hayling Island	<i>Winter birds</i> – site adjacent to Core Area within the SWBGS. Increases in residents using footpaths will lead to disturbance to dark-bellied brent geese using parcel of land	The loss of H46B as a Core Area as part of the current proposed development removes the potential impact pathway, therefore no cumulative effect will occur
Preliminary Ecological Appraisal – Ecosupport, November 2021	<i>Solent European Sites</i> – likely increases in recreational pressure and eutrophication	Yes – see assessment set out below. Subject to financial contributions toward the Solent Recreation Mitigation Strategy, and adherence to nutrient neutrality, no significant negative cumulative effects
Reptile Survey & Mitigation Report – Ecosupport, June 2022		
Bat Activity Survey Report – Ecosupport. June 2022		

Table 7.3 Summary of potential inter-cumulative effects		
Reference, distance from Site and materials reviewed	Potential impact/effect of plan or project in isolation	Potential for significant cumulative effect?
	<i>Reptiles</i> – site found to support low numbers of slow worm important at the local level which would be impacted upon in the absence of mitigation at the construction and operational phases	No, as both schemes are to be subject to mitigation anticipated to avoid negative impacts, therefore there will no cumulative effects
	<i>Bats</i> – site found to support a foraging and commuting bat assemblage important at the County/Regional level, which would be impacted upon in the absence of mitigation	No, as both schemes are to be subject to mitigation anticipated to avoid negative impacts, therefore there will no cumulative effects
APP/21/01351 c. 480m north-west Saltmarsh Lane, Hayling Island EcIA – Tyler Grange, October 2021	<i>Winter birds</i> – site is designated as a Low Use Site within the SWBGS which will be lost to facilitate development	Yes, though will not be realised as negative effects of both developments will be fully mitigated
	<i>Solent European Sites</i> – likely increases in recreational pressure and eutrophication	Yes – see assessment set out below. Subject to financial contributions toward the Solent Recreation Mitigation Strategy, and adherence to nutrient neutrality, no significant negative cumulative effects
	<i>Bats</i> – site found to support an assemblage of foraging and commuting bats of local importance, which would be impacted in the absence of mitigation	No, as both schemes are to be subject to mitigation anticipated to avoid negative impacts, therefore there will no cumulative effects
	<i>Reptiles</i> – site found to support a population of slow worm important at the local level which would be impacted in the absence of mitigation	No, as both schemes are to be subject to mitigation anticipated to avoid negative impacts, therefore there will no cumulative effects
APP/21/01350 c. 570m west North of Oysters, Hayling Island EcIA – Tyler Grange, October 2021	<i>Winter birds</i> – site is designated as a Secondary Support Area within the SWBGS which will be lost to facilitate development	Yes, though will not be realised as negative effects of both developments will be fully mitigated
	<i>Solent European Sites</i> – likely increases in recreational pressure and eutrophication	Yes – see assessment set out below. Subject to financial contributions toward the Solent Recreation Mitigation Strategy, and adherence to nutrient neutrality, no significant negative cumulative effects
	<i>Bats</i> – site found to support assemblage of foraging and commuting bats important at the	No, as both schemes are to be subject to mitigation anticipated to avoid negative

Table 7.3 Summary of potential inter-cumulative effects		
Reference, distance from Site and materials reviewed	Potential impact/effect of plan or project in isolation	Potential for significant cumulative effect?
	local level which will be affected by the development in the absence of mitigation	impacts, therefore there will no cumulative effects
	<i>Reptiles</i> – site found to support an assemblage of reptiles important at the local level which will be impacted by the development in the absence of mitigation	No, as both schemes are to be subject to mitigation anticipated to avoid negative impacts, therefore there will no cumulative effects
APP/22/00669 c. 6.2km north-west Kingscroft Farm, Havant Preliminary Ecological Appraisal – Ecosupport, June 2022	<i>Solent European Sites</i> – likely increases in recreational pressure and eutrophication	Yes – see assessment set out below. Subject to financial contributions toward the Solent Recreation Mitigation Strategy, and adherence to nutrient neutrality, no significant negative cumulative effects
APP/22/01231 c. 6.5km north-west Palk Road, Havant EcIA – ACD Environmental, November 2022	<i>Solent European Sites</i> – likely increases in recreational pressure and eutrophication	Yes – see assessment set out below. Subject to financial contributions toward the Solent Recreation Mitigation Strategy, and adherence to nutrient neutrality, no significant negative cumulative effects
APP/22/01039 c. 7km north 26 New Lane, Havant Preliminary Ecological Appraisal – Delta-Simons Ltd, September 2022	No potential impacts for this project in isolation were determined	As no impacts have been identified, there is no basis for a cumulative effect
APP/23/00076 c. 810m west Tournerbury Lane Shadow Habitat Regulations Assessment – Hampshire Ecological Services Ltd, April 2020 EcIA – Hampshire Ecological Services Ltd, June 2020 Shadow Appropriate Assessment – Holbury Consultancy Services, November 2021	<i>Solent European Sites</i> – likely increases in recreational pressure and eutrophication	Yes – see assessment set out below. Subject to financial contributions toward the Solent Recreation Mitigation Strategy, and adherence to nutrient neutrality, no significant negative cumulative effects

Table 7.3 Summary of potential inter-cumulative effects		
Reference, distance from Site and materials reviewed	Potential impact/effect of plan or project in isolation	Potential for significant cumulative effect?
APP/24/00968 c. 860m north-east Beachlands, Hayling Island Preliminary Ecological Appraisal – Arbtech, September 2024	No potential impacts for this project in isolation were determined	As no impacts have been identified, there is no basis for a cumulative effect
APP/22/00669 c. 6.2km north Land at Kingscroft Farm adjacent to Ridgway and Marples Way, Havant Preliminary Ecological Appraisal – Ecosupport, 2022	<i>Solent European Sites</i> – likely increases in recreational pressure and eutrophication	Yes – see assessment set out below. Subject to financial contributions toward the Solent Recreation Mitigation Strategy, and adherence to nutrient neutrality, no significant negative cumulative effects
Reptile Mitigation Strategy – Ecosupport, 2023 Solent Nutrient Budget Calculator – N.A, n.d. Biodiversity, Enhancement & Management Strategy – Ecosupport, 2023	<i>Reptiles</i> – site found to support an assemblage of reptiles important at the local level which will be impacted by the development in the absence of mitigation	No, as both schemes are to be subject to mitigation anticipated to avoid negative impacts, therefore there will no cumulative effects
APP/22/00172 c. 5.9km north Langstone Technology Park, Langstone Road, Havant Preliminary Ecological Appraisal – Phlorum, 2022	No potential impacts for this project in isolation were determined	As no impacts have been identified, there is no basis for a cumulative effect
APP/20/00533 c. 6.3km north B.M. Scaffolding, Brockhampton Road, Havant	No potential impacts for this project in isolation were determined	As no impacts have been identified, there is no basis for a cumulative effect
Havant Local Plan Policy HB2 Havant & Bedhampton Employment Allocations – Site Ref: BD10 c. 6km north Land north of Regional Business Centre	<i>Solent European Sites</i> – likely increases in recreational pressure and eutrophication	Yes – see assessment set out below. Subject to financial contributions toward the Solent Recreation Mitigation Strategy, and adherence to nutrient neutrality, no significant negative cumulative effects

- 7.8.3 Potential cumulative impact pathways have been identified in the case of bats and reptile species, however in each case it has been determined that this will have **no significant positive/negative cumulative adverse effects**, given that in each case appropriate impact mitigations are proposed.
- 7.8.4 A detailed assessment of potential effects of the Proposed Development in combination with other plans and projects on European sites is presented separately as Information to Inform Habitats Regulations Assessment (Appendix 7.2). The assessment is not repeated here, however the identified potential effects and proposed mitigation are summarised below.
- 7.8.5 The qualifying habitats and species of the Chichester and Langstone Harbours SPA and Ramsar site (which are shared with the special interests of the overlapping SSSI designations) are known to be vulnerable to recreation pressure. The Proposed Development will contribute to an increase in the local population and therefore has the potential to act in combination with the projected increase in housing within Havant and adjacent districts to increase recreation pressure at these sites. However, subject to payment of the applicable financial contribution to the Solent Recreation Mitigation Strategy prior to occupation of the Proposed Development, which will be used to fund strategic measures, it can be concluded that there will be **no significant positive/negative cumulative adverse effects** on the Chichester and Langstone Harbours SPA, Ramsar site or SSSIs as a result of impacts associated with recreation pressure.
- 7.8.6 Foul water discharges from the Site will be treated at the Budds Farm Waste Water Treatment Works (WWTW), which itself returns treated effluent to the water environment of the East Solent system and its associated European site designations. The qualifying features of these designations are known to be sensitive to and already suffering from eutrophication. Nutrient (principally nitrogen) loading within treated foul effluent resulting directly from the Proposed Development is unlikely to have a significant effect on the qualifying habitats and species in isolation, however may act in combination with wider projected housing growth to undermine conservation objectives. A full Nitrogen Budget for the Proposed Development is provided in Appendix 7.2. Establishment of the proposed bird refuge site (see above in respect of mitigating the loss of brent goose supporting habitat) and its management in

perpetuity, which will involve land take from present arable cultivation, will additionally ensure that the proposal as a whole is 'nitrogen-negative' (i.e. a betterment on neutrality), and will therefore have **no significant positive/negative cumulative adverse effect** on the European sites of the East Solent system (Chichester and Langstone Harbours SPA and Ramsar site, Portsmouth Harbour SPA and Ramsar site, Solent Maritime SAC, Solent and Dorset Coast SPA, Solent and Southampton Water SPA and Ramsar site or Solent and Isle of Wight Lagoons SAC) as a result of eutrophication linked to foul drainage impacts to water quality.

7.8.7 The assessment presented in full within the Information to Inform Habitats Regulations Assessment (Appendix 7.2) determined that no significant adverse effect on the designated sites would likely result from traffic-derived air quality impacts or hydrological changes brought about by increased water abstraction. Increased traffic flows resulting from the scale and location of the Proposed Development and wider projected housing growth are capable of giving rise to localised air quality impacts. Areas of each of the Chichester and Langstone Harbours SPA and Ramsar site (and SSSIs), Solent Maritime SAC and Portsmouth Harbour SPA and Ramsar site exist within 200m of a major road (A-road or motorway), and could therefore experience localised increases in atmospheric and deposited pollutants. However, the effects of increased traffic resulting from the Proposed Development in isolation are unlikely to be appreciable, given the intervening distances and diffusion of traffic. Furthermore, findings of air quality dispersion modelling (see Chapter 6 of this ES) found that potentially significant increases in pollutant nitrogen resulting from the Proposed Development, in combination with other committed development, would be limited to a single modelled location within Emsworth Harbour, adjacent to Langstone Road. At this location, however, the habitat is intertidal and regularly inundated with tidal water, with the result that air pollutants are unlikely to be capable of adversely affecting the habitats present and will therefore result in **no significant positive/negative cumulative adverse effect**.

7.8.8 Residential growth drives increases in water consumption and waste water production, which are associated with adverse environmental effects. Increased abstraction could, in principle, impact fresh water inputs to European sites, with corresponding effects on salinity gradients, water circulation, vegetation communities and the waterfowl they support. However, in their 2017 Draft Water Resources

Management Plan, Portsmouth Water confirm that there is currently a surplus of supply for the period to 2044, therefore impacts on site features arising from increases in water abstraction will have **no significant positive/negative cumulative adverse effect**.

7.9 Compensation

7.9.1 As illustrated in Appendix 7.3 (Biodiversity Net Gain Assessment: Design Stage), application of the Statutory Biodiversity Metric indicates that to accommodate the Proposed Development c. 6.04 Habitat Units will be lost on-site.

7.9.2 As detailed above in 'Design Solutions' the Proposed Development will, however, provide an opportunity to secure the following elements of habitat creation. Although designs are at this stage illustrative, it is assessed that alongside development the Site can accommodate (among other land uses):

- Informal grassland (c. 0.8ha equating to 5.53 Biodiversity Units)
- Formal grassland (c. 2.33ha equating to 8.06 Biodiversity Units)
- Scrub (c. 0.36ha equating to 2.44 Biodiversity Units)
- New tree planting (c. 90 small trees equating to 0.8 Biodiversity Units).

7.9.3 The above measures will contribute to an overall net gain of 0.77 Watercourse Units (+32.21%) and 3.51 Hedgerow Units (+321.30%), however the on-site habitat creation is not sufficient to achieve an on-site net gain.

7.9.4 In order to deliver the statutory requirement of Biodiversity Net Gain, including in Habitat Units, targeted enhancements will be delivered within the proposed winter bird refuge site at Land West of West Lane. These enhancements are additional to what would be required to replace the lost brent goose winter foraging/roosting habitat at the Site. Factoring in the off-site habitat creation, the proposals will deliver an overall net gain of 23.54 Habitat Units (+75.84%). Further detail is provided at Appendix 7.3.

7.9.5 It should be noted that, like the proposed layout and landscaping, the above projections are illustrative at this stage. Nevertheless, it can be determined that biodiversity net gain requirements can be met as part of the Proposed Development.

7.9.6 Full details on the establishment and long-term management of these habitats will be set out in the LEMP / Habitat Management and Monitoring Plan at the detailed design stage. Such details will include (for off-site and significant on-site creation) a description of the proposed habitats, their target condition, timescales over which condition will be achieved, management prescriptions, implementation responsibilities and funding mechanisms.

7.10 Enhancement

7.10.1 New habitat creation within Green Infrastructure, as shown on the Parameters Plan, will provide opportunities for species confirmed to be present on-site at baseline, such as nesting birds and slow worm. In addition to these enhancements which are embedded into development proposals, a range of additional ecological enhancement measures will be delivered as part of the Proposed Development, as identified below. Further details will be set out in a LEMP at the detailed design stage, however as an indicative guide:

- Improvement of a stretch of on-site ditch running centrally through the Site, incorporating aquatic and marginal planting, removal of smothering vegetation and engineering of the ditch to allow for water retention for the majority of the year;
- Native species rich hedge planting along the periphery of the residential parcels, incorporating standard trees along the length to provide connectivity across the Site;
- Inclusion of plant species of known wildlife value within the landscaping scheme, including night-scented varieties to benefit bats;
- Provision of new bat roosting opportunities: Bat boxes will be erected on mature trees or new builds. These will be a purpose-built, durable and long-lasting variety such as available from Schwegler or Habitat. Where possible, these will be incorporated into the fabric of new builds;
- Provision of new bird nesting opportunities: Bird nesting boxes will be provided in new/retained planting to benefit generalist bird species;
- Creation of log piles: Timber generated from any scrub or tree clearance works at the Site will be used to make log piles for wildlife benefit. These will be sited within boundary vegetation where they will be least disturbed. New material can be added as required following any future management works; and

- Provision of hedgehog gaps: Hedgehogs have been scoped out of detailed assessment and no specific mitigation is proposed, however it is important that opportunities for hedgehogs to move through the landscape are preserved. Although not strictly an 'enhancement' measure, provision of hedgehog-friendly gravel boards or equivalent, providing a minimum 5 x 5 inch gap, will be used to maintain permeability for hedgehogs across the development and associated gardens. The number and location of hedgehog gaps will be determined at the detailed design stage and set out within the LEMP.

7.10.2 There will be ongoing monitoring of newly established and enhanced habitats as part of POS. This commitment will be made, and further detail provided, within the LEMP to be prepared at the detailed design stage.

7.10.3 To monitor the effectiveness of the proposed refuge site for brent geese mitigation, wintering bird surveys will be completed from the first winter following establishment and will continue until year 10 post-establishment. Details of the monitoring programme are provided within the Brent Goose Mitigation Strategy (Appendix 7.4).

7.11 Summary

7.11.1 In the absence of any mitigation measures, the Proposed Development would have the potential to result in significant adverse effects on the European site designations of the East Solent system, including but not limited to the Chichester and Langstone and Portsmouth Harbours SPAs and Ramsar sites, and the Solent Maritime SAC. Potential impact pathways include the loss of functionally linked supporting habitats for wintering birds, increased recreational pressure at coastal sites and eutrophication of the water environment.

7.11.2 The Site is, however, dominated by arable cultivation and other common and widespread habitats of limited ecological value. Baseline ecological surveys have indicated that populations of bats and slow worms using the Site are restricted in their spatial distribution owing to the limited availability of suitable habitats.

7.11.3 Mitigation for the potential effects on European sites are addressed in the accompanying Information to Inform Habitats Regulations Assessment and will include the establishment of a permanent off-site brent goose refuge and financial

contributions toward the Solent Recreation Mitigation Strategy (Appendices 7.2 & 7.4).

7.11.4 The Proposed Development is not anticipated to result in any significant adverse effects on local species populations; however construction phase measures will be required to avoid the killing and injury of reptiles. The Parameters Plan demonstrates the potential to deliver net benefits for wildlife in the form of additional habitats, with the opportunity to provide additional enhancement measures alongside the new housing, resulting in a measurable biodiversity net gain (>10%).

7.11.5 The measures set out herein can be secured through appropriate conditions attached to any planning consent, and the development can therefore be delivered without harm to nature conservation interests. Specifically, it is anticipated that planning conditions would be used to secure:

- Construction Environmental Management Plan (CEMP): In addition to wider environmental controls and best practice construction management, the CEMP will set out construction-phase impact avoidance measures with respect to nesting birds and reptiles.
- Landscape and Ecology Management Plan (LEMP): The LEMP will detail the establishment and long-term management of retained and newly created habitats to maximise benefits for wildlife. It will include a graphical Ecological Enhancement Plan, setting out the number, type and position of enhancement features.
- Brent Goose Mitigation Plan: Building upon the framework provided in the appended Brent Goose Mitigation Strategy, a fully detailed and costed implementation, management and monitoring plan for the creation of the proposed permanent bird refuge prior to commencement of development.
- Both the LEMP and Brent Goose Mitigation Strategy will need to be consistent with a Biodiversity Gain Plan and Habitat Management and Monitoring Plan, demonstrating that the detailed proposals will deliver a net gain in biodiversity of at least 10%.
- Reptile Mitigation Strategy: A mitigation strategy will be prepared at the detailed design stage, which is anticipated to be centred around a capture, exclusion and translocation exercise to an on-site receptor area(s).

7.11.6 Based on the successful implementation of avoidance, mitigation and enhancement measures set out herein, the scheme is considered to accord with all relevant nature conservation legislation, as well as with all relevant policy provisions of the adopted Havant Borough Development Plan.

8 TRANSPORT

8.1 Introduction

- 8.1.1 This Chapter reports the likely significant effects of the Proposed Development in terms of transport in the context of the Site and surrounding area.
- 8.1.2 In particular, this Chapter considers the likely significant effects of traffic related to: severance of communities; road vehicle driver delay and passenger delay; non-motorised user delay; non-motorised user amenity; fear and intimidation on and by road users; road user and pedestrian safety; and public transport users.
- 8.1.3 This assessment needs to consider the impact on sensitive receptors with the most sensitive locally being: schools and colleges; retirement apartments; roads without footways used by pedestrians, and at the request of HBC, residential properties close to the A3023 carriageway.
- 8.1.4 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 5), as well as the final chapter, 'Summary of Residual and Cumulative Effects' (Chapter 13).
- 8.1.5 This Chapter should also be read in conjunction with Revision A of the Transport Assessment (TA) included as Appendix 8.1 and Revision A the Travel Plan (TP) included as Appendix 8.2.

8.2 Legislation, Policy and Guidance

- 8.2.1 The relevant legislation, policy and guidance are listed below, with details provided in the TA (Appendix 8.1) and TP (Appendix 8.2).

Legislative Framework

- 8.2.2 There is no applicable legislative framework in regard to transport.

Planning Policy

- 8.2.3 The applicable planning policy is summarised as follows:
- National Planning Policy Framework (NPPF) (December 2024);

- Department for Transport (DfT) Circular 01/2022 Strategic Road Network and the Delivery of Sustainable Development (2022);
- Hampshire Local Transport Plan 4 (2024) (LTP4); and
- Havant Borough Council Core Strategy (2011-2026).

Guidance

8.2.4 The applicable guidance is summarised as follows:

- IEMA Guidelines: Environmental Assessment of Traffic and Movement (2023) (hereon referred to as the '2023 IEMA Guidelines');
- IEMA Guidelines for the Environmental Assessment of Road Traffic (1993) (hereon referred to as the '1993 IEMA Guidelines');
- Planning Practice Guidance (PPG);
- Manual for Streets (2007) (MfS) and Manual for Streets 2 (2010) (MfS2);
- Havant Borough Parking Supplementary Planning Document (2016);
- Hampshire County Council Technical Guidance Notes (live);
- DfT Transport Analysis Guidance (TAG) Unit M1.2 Data Sources and Surveys (2024);
- Active Travel England Standing Advice Note: Active Travel and Sustainable Development (2023);
- DfT LTN 1/20 Cycle Infrastructure Design (2020);
- Building Research Establishment (BRE) report Construction Site Traffic, The Next Big Thing (2003); and
- Havant Local Cycling and Walking Infrastructure Plan (2023).

8.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

8.3.1 The scope of this ES chapter follows the methodology presented in the Scoping Report (Appendix 2.1) and includes additional elements requested by HBC in the Scoping Opinion (Appendix 2.2), specifically the consideration of the environmental impact on properties 68, 80 and 85 Havant Road given their proximity to the road and on the West Lane/Havant Road junction.

8.3.2 A key input to this assessment is HBC's Hayling Island microsimulation model first constructed to inform the Council's now withdrawn emerging Local Plan, and since

updated, taking account of comments made by the Inspectors during the Examination in Public of this document. The Applicant utilised the services of HBC's modelling consultant for their own forecast runs of this model to inform both the core assessment and the cumulative assessment. HBC are owners of the base model used to inform existing baseline conditions.

- 8.3.3 The microsimulation model has also been used as a key input to Revision A of the TA (Appendix 8.1). The scope of the TA follows that agreed with Hampshire County Council (HCC) as part of the previous planning application for the development (planning ref: APP/17/00007). An updated scoping exercise took place with HCC in 2018 with further discussions taking place during 2019 and 2020 as the previous emerging Local Plan was evolving. Further discussions took place with HCC and National Highways (NH) post-submission of the planning application, up to as recently as September 2025 to the update of this chapter.
- 8.3.4 The microsimulation model is an accurate representation of traffic conditions in 2022, the base year in which it was created, following a calibration and validation exercise in line with DfT TAG guidelines. The level of calibration and validation was agreed with both HCC and NH (see TA (Appendix 8.1) for further details). The base model is therefore a suitable tool to consider the impact of the development traffic, both on its own in the core assessment, and cumulatively with three other live planning applications on the Island as listed in Table 6.1 of the TA (Appendix 8.1). The model is also an appropriate tool to consider the need for, and the design of, any highway capacity based mitigation required to ensure that the Proposed Development will not have an unacceptable impact on highway safety or a severe cumulative impact on the road network in line with paragraph 116 of NPPF, and within the recommendations of the 2023 IEMA Guidelines.
- 8.3.5 The extent of the model includes the majority of roads on Hayling Island and a section on the mainland which includes parts of Havant town. Further details of this are provided in the TA (Appendix 8.1).
- 8.3.6 The model is able to consider the complex interaction of traffic on the highway network, including along links and at junctions. It considers link and junction capacity,

link speeds, journey times and side friction such as on-street parked vehicles and loading/servicing.

Effects Not Considered within the Scope

- 8.3.7 With reference to the 2023 IEMA Guidelines, noise, vibration, landscape and visual impact, air quality, dust and fine particulate matter, biodiversity and cultural heritage are considered to be outside the scope of this Transport Chapter, and as such are considered in specialist chapters of this ES or separate standalone reports submitted in support of the planning application, as appropriate.
- 8.3.8 The Guidelines note that many potential impacts will not be relevant to many kinds of development. As such, 'hazardous loads' has not been subject to assessment as such loads are not anticipated during the construction or operational phase of the Proposed Development.

Extent of the Study Area

- 8.3.9 The study area extent includes the highway links shown in Table 8.1. Compass directions have been abbreviated to N, S, E, W with B abbreviating 'bound' e.g. NB = northbound.

Table 8.1: Extent of Study Area			
Link	Description	Link	Description
1	St Mary's Rd W of Elm Grove	21	Langstone Tech Park Access E of A3023
2	Church Rd N of St Mary's Rd	22	A3023 S of A27
3	Tournerbury Ln E of Elm Grove	23	A27 WB on-slip
		24	A27 EB off-slip
4	Elm Grove S of St Mary's Rd	25	Park Rd South N of A27
5	Elm Grove N of Cherrywood Gardens	26	A27 EB on-slip
		27	A27 WB off-slip
6	Elm Grove S of Cherrywood Gardens	28	Langstone Bridge
7	Cherrywood Gardens W of Elm Grove	29	A27 EB west of Langstone Rd slips
		30	A27 WB west of Langstone Rd slips
8	Cherrywood Gardens E of St Mary's Rd	31	A27 EB east of Langstone Rd slips
		32	A27 WB east of Langstone Rd slips
9	St Mary's Rd W of Cherrywood Gardens	33	Proposed Site Access
10	St Mary's Rd N of Cherrywood Gardens	34	St Mary's Rd S of Proposed Site Access

Table 8.1: Extent of Study Area			
Link	Description	Link	Description
11	St Mary's Rd E of A3023	35	A3023 Havant Rd S of Castlemans Ln
12	A3023 S of St Mary's Rd	36	A3023 Havant Rd S of West Ln
13	Station Rd W of A3023	37	West Ln W of A3023 Havant Rd
14	A3023 N of St Mary's Rd	38	A3023 Havant Rd N of West Ln
15	A3023 W of Church Rd	39	Newtown Ln E of West Ln
16	A3023 E of Church Rd	40	West Ln N of Newtown Ln
17	Church Rd S of A3023	41	West Ln W of Newtown Ln
18	A3023 N of Langstone Tech Park	42	Station Rd E of West Ln
19	Woodbury Av E of A3023	43	West Ln NE of Station Rd
20	A3023 S of Langstone Tech Park	44	Station Rd W of West Ln

8.3.10 The collision data study area is detailed in Section 8.4.

Consultation Undertaken to Date

8.3.11 Table 8.2 provides a summary of the consultation activities undertaken in support of the preparation of this Chapter. Note that discussions with HCC focussed on the access arrangement and the TA rather than this Chapter directly, however these form important aspects of this Chapter. Copies of relevant correspondence are provided in Appendix A of the TA (Appendix 8.1).

Table 8.2: Summary of Consultation Undertaken to Date			
Organisation	Individual(s)	Meeting Date and other forms of Consultation	Summary of Outcome of Discussion
Hampshire County Council (HCC)	Holly Drury, Chris Hirst, Graham Redman et al.	Various meetings & email based discussions between 2019 and 2025	Evolvement of proposed access design and traffic modelling
Havant Borough Council (HBC)	Simon Jenkins	Scoping Opinion 29 th September 2021	ES scope clearly defined

Assessment Methodology

8.3.12 The baseline data used in this assessment is from HBC's own base microsimulation model which is detailed further in the TA (Appendix 8.1). The model was calibrated

and validated to adhere with the criteria in the DfT's TAG guidance which also represents industry best practice. Full details are provided in the Model Development Report included in Appendix I of the TA. The data for the various links and junctions was originally acquired by HBC's modelling consultants using a variety of traffic survey methods and approved data sources.

8.3.13 The following assessment has been undertaken in line with the 2023 IEMA guidelines which, at paragraph 3.3 of the document, provide a recommended list of potential environmental impacts that should be considered as part of an ES. These are:

- Severance of communities;
- Road vehicle driver delay and passenger delay;
- Non-motorised user delay;
- Non-motorised user amenity;
- Fear and intimidation on and by road users on and by road users;
- Road user and pedestrian safety; and
- Hazardous/large loads.

8.3.14 These categories superseded those of similar names in the 1993 IEMA Guidelines.

8.3.15 The effects on public transport users have also been considered given the presence of regular and frequent bus services on the Island that run in proximity to the Site.

8.3.16 The 2023 (and 1993) IEMA Guidelines set out two alternative rules to identify locations at which transport impacts should be considered. As such, the assessment should:

*'Include highway links where traffic flows will increase by more than 30%
(or the number of heavy goods vehicles will increase by more than 30%)'
(Rule 1); and*

*'Include highway links of high sensitivity where traffic flows have increased
by 10% or more' (Rule 2).*

8.3.17 The 30% threshold traditionally relates to a level at which people may perceive change and there may therefore be an effect, although increases above this level do not necessarily mean that there is a significant effect, only that further consideration is required.

- 8.3.18 Increases in traffic flows of less than 10% are accepted within the IEMA Guidelines as having negligible impact as daily variance in traffic flows can be of equal magnitude, unless there are sensitive geographic locations adjacent to links within the study area. Examples of such sensitive geographic locations given within the 2023 IEMA Guidelines include locations with concentrations of sensitive and/or vulnerable users or groups like hospitals, places of worship and schools, along with retail areas, recreational areas, tourist attractions, roads or junctions with road safety concerns or collision clusters and roads or junctions that are at or over capacity. People at home and people at work are also listed as sensitive geographic locations but clearly many roads in urban and semi-urban areas will pass people's homes and workplace so we will consider such impact more subjectively.
- 8.3.19 The Guidelines also note that it would not normally be appropriate to consider links where flows have changed by less than 10%, unless there are '*significant changes in the composition of traffic*', such as a substantial increase in the number of heavy vehicles.
- 8.3.20 Whilst it will become evident that few links in the study area meet the above two rules, the effects on each link in the study area have been considered for completeness.
- 8.3.21 Sensitive geographic locations treated as 'sensitive receptors' are detailed later in this chapter.
- 8.3.22 The 2023 IEMA Guidelines also make reference to '*sensitive areas*' with reference to EIA Regulation 2. Examples of such sensitive areas include Sites of Special Scientific Interest (SSSI) and Areas of Outstanding Natural Beauty (AONB). An assessment has, therefore, been undertaken within Chapters 6 (Air Quality) and 7 (Ecology) to consider the potential effects on nitrogen pollution due to the increased traffic flow on roads within 200m of the Chichester and Langstone Harbours Ramsar and SPA, Solent Maritime SAC, Langstone Harbour SSSI and Chichester Harbour SSSI designated habitat complex (collectively referred to hereafter as the "Chichester and Langstone Harbours complex"). The assessment is not repeated here.

Environmental Value and Receptor Sensitivity

8.3.23 The 2023 IEMA Guidelines provide examples of sensitive receptors as mentioned above, however they do not attempt to classify the sensitivity of the receptors. It is stated in the document that the *'Guidelines are intended to complement professional judgement and the experience of trained and competent assessors'*, as such there is scope for the assessor to tailor their methodology appropriately. We have therefore referenced the receptor sensitivity classifications from the 1993 IEMA Guidelines for use in this assessment as summarised in Table 8.3 below. It should be noted that the 'negligible', 'minor', 'moderate' and 'substantial' receptor value terminology from the 1993 IEMA Guidelines has been replaced with 'very low', 'low', 'medium' and 'high' respectively based on the 2023 IEMA Guidelines.

Table 8.3: Receptor Sensitivity	
Receptor Sensitivity	Receptor Type
High	Receptors of greatest sensitivity to traffic flows: schools, colleges, playgrounds, accident black spots, retirement homes, roads without footways that are used by pedestrians.
Medium	Traffic flow sensitivity receptors: congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, recreation facilities, workplaces, level crossings and bus routes.
Low	Receptors with some sensitivity to traffic flow: places of worship, public open space, listed buildings, tourist attractions and residential areas with adequate footway provision.
Very Low	Receptors with low sensitivity to traffic flows: undeveloped land, agricultural land, strategic roads including trunk roads and motorways with little or no pedestrian activity.

8.3.24 The type of sensitive receptors that are accessed from or lie adjacent to links in the study area will determine the sensitivity of the link. Where more than one sensitive receptor in the Study Area is accessed from, or lies adjacent to, a single link, the receptor of the highest value will determine the sensitivity of the link.

8.3.25 The 2023 IEMA Guidelines state that the magnitude of each impact should be determined as the predicted deviation from the baseline conditions. Table 8.4 summarises the criteria that have been used to determine magnitude of impacts. HGV stands for 'heavy goods vehicles'.

Table 8.4: Magnitude of Impact Criteria				
Impact	Magnitudes of Impact			
	Very Low	Low	Medium	High
Severance of communities	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of >60-90%	Change in total traffic or HGV flows over 90%
Road vehicle driver delay and passenger delay	Change in journey time of less than 30 secs	Change in journey time of 30secs-1min	Change in journey time of >1min-2mins	Change in journey time of more than 2mins
Non-motorised user delay	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of >60-90%	Change in total traffic or HGV flows over 90%
Non-motorised user amenity	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of >60-90%	Change in total traffic or HGV flows over 90%
Fear & intimidation on & by road users	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of >60-90%	Change in total traffic or HGV flows over 90%
Road user & pedestrian safety	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of >60-90%	Change in total traffic or HGV flows over 90%

8.3.26 Professional judgement will be applied to consider impact on public transport users informed by a combination of delay to their journeys and any severance effects as a result of additional traffic on the links that need to be crossed to access stops and stations.

Significance Criteria

8.3.27 The significance of the effect is judged on the relationship of the magnitude of impact to the assessed sensitivity of the receptor and the associated link in line with the matrix of significance shown in Table 8.5.

Table 8.5: Level of Effects				
Sensitivity of Receptor	Magnitudes of Impact			
	Very Low	Low	Medium	High
Very Low	Negligible	Negligible	Negligible	Minor
Low	Negligible	Negligible	Minor	Moderate
Medium	Negligible	Minor	Moderate	Major
High	Minor	Moderate	Major	Major

8.3.28 Potential effects are therefore concluded to be negligible, minor, moderate or major. Effects that are deemed to be significant for the purposes of this assessment are those that are described as being of a moderate or major beneficial or adverse level. The application of the criteria has been based on professional judgement, both in terms of the extent of the impact, which has been quantified where possible, and the sensitivity of the receptor.

8.4 Baseline Conditions

Local Highway Network

- 8.4.1 St Mary's Road provides the Site's frontage with the local highway network. It is a residential local access collector road effectively connecting Church Road to Manor Road as well as providing access to a number of side roads, along with many properties which have driveway frontage with it. The road is best described in two sections, with the north-eastern section running diagonally from a priority-controlled junction with ghost island right turn with Church Road in the north-east, to Cherrywood Gardens where it forms a split priority junction. The western section then continues west from this junction to a priority-controlled junction with minor arm flare with Manor Road.
- 8.4.2 St Mary's Road is two-way with a single lane in each direction. It is subject to a 30mph speed limit. The road also provides access to Mengham Infant School, a public car park and a retirement home. A central reserve is present in the vicinity of the school access which includes an uncontrolled crossing. A school bus stop with layby is also present at this location. Double yellow lines restrict parking between the Church Road junction and the school while some on-street parking is permitted between the school and Cherrywood Gardens. Parking restrictions are largely not present along the western section. Continuous footway is present along the southern side of the western section while the footways along the eastern section are present but also absent in some places, safe contiguous walking routes are available by crossing over the road. Traffic calming features are not present on St Mary's Road.
- 8.4.3 Church Road runs south from the A3023 roundabout becoming Elm Grove south of St Mary's Road then Sea Grove as it approaches Sea Front, the coast road. The road is one of the two distributor roads in the southern half of the island. It collects traffic from numerous side roads with many residential and commercial properties also taking access from it. Several bus stops can be found along Church Road within a

reasonable walking distance of St Mary's Road. Between Gable Head and South Hayling it acts as the local high street with shops and other businesses forming the majority of the frontage and wide footways being present. It is subject to a 30mph speed limit.

- 8.4.4 The A3023 is the primary distributor road that connects the island with the mainland. It runs south from a grade separated traffic signal-controlled roundabout with the A27 and Park Road South to the south of Havant where it is named Langstone Road. It then bridges over Chichester and Langstone Harbours with the structure commonly known as Langstone Bridge. The bridge itself has a single lane in each direction and shared cycleways on each side of the carriageway. Continuing onto the island, the A3023 is named Havant Road and passes through the Stoke area where the speed limit reduces from 40mph to 30mph and provides access to side roads and driveway access to residential and commercial properties. This characteristic continues further south although driveway frontage becomes more prevalent as the surrounding areas become more urban. To the west of the roundabout with Church Road, the A3023 continues west then south running parallel to Church Road/Elm Grove/Sea Grove Avenue to Sea Front passing through a district centre in the vicinity of St Mary's Road.

Highway Safety

- 8.4.5 Personal injury collision data has been purchased from Hampshire Constabulary to cover the five-year period of 1st August 2019 to 31st July 2024 i.e. 60 months. The collision study area includes the A3023 from its junction with the A27 and Park Road South in Havant to the north, to its junction with Sea Front (Beachlands roundabout) to the south. Also included is Church Road from its junction with the A3023 and Sea Front to the north and south respectively, as well as St Mary's Road and Cherrywood Gardens. The total length of the roads included in the collision study area is circa 12.5km.
- 8.4.6 In total there were 86 collisions within the study area, comprising of 26 serious and 60 slight injury collisions. No fatal collisions occurred. The annual number of collisions varied between 13 and 25 per year.

8.4.7 The 86 collisions resulted in 122 casualties, with 63% being vehicle drivers or passengers, 22% being motorcycle riders, 10% cyclists and 5% pedestrians. The highest proportion of serious injuries occurred to motorcyclists and pedestrians, with 52% and 50% of injuries to these road users respectively resulting in serious injury.

8.4.8 A number of key statistics from the collision reports are as follows:

- 52.6% of collisions occurred at or within 20m of a junction;
- Vehicle types: 88% of collisions involved cars and 6% involved vans, no accidents involved lorries, other goods vehicles or buses;
- Vulnerable road users: 33% of collisions involved a motorcyclist, 28% involved cyclists and 14% involved pedestrians;
- 14% of collisions occurred on a wet carriageway surface;
- 6% occurred when it was raining;
- 50% involved elderly or inexperienced drivers;
- 15% involved alcohol or drugs;
- Main causation factors: Driver error was listed at the first factor in 75% of collisions, alcohol or drugs in 10%, illness or disability in 7%, road condition (surface deposit/slippy surface) in 4% and isolated incidents of sun dazzle and vehicle condition/layout.

8.4.9 The collisions were generally dispersed across the study area with only small clusters at a number of junctions. The frequency and severity of collisions is not to an extent that we would consider there to be any collision blackspots.

8.4.10 Further analysis is provided in the TA (Appendix 8.1).

Site Visit Observations

8.4.11 Numerous site visits have been undertaken during different times of the year and at different times of the day between 2016 and 2022. During the site visits, it was observed that traffic flowed freely on Hayling Island itself and over the bridge with traffic travelling at typical free flow speeds. Some queues have been observed on the A3023 approach to the junction with the A27, which we understand have improved as part of an improvement scheme in late 2023, and at the merge point travelling southbound from the junction, but these queues tended to clear fairly quickly, particularly at the merge point with drivers showing courtesy to others to allow the

merge to happen smoothly. From more recent site visits, several changes to kerb lines, foot/cycleways, side roads and bus stops appear to have improved the merge arrangement.

8.4.12 Some slight delays have been observed on the minor arms of junctions with the A3023 when traffic was gap-seeking but again, many drivers drove with courtesy and often allowed traffic out of the side roads. Traffic was also able to turn in between platoons. No notable queues were observed on the island itself.

8.4.13 It was noted that bus services appeared to be frequent and popular. Many pedestrians and cyclists were also observed, particularly in the district centres. Many parents/guardians appear to travel on foot to/from Mengham Infant School, and those that choose to drive appear to park with a reasonable degree of courtesy, with school peak times tending to last for around 20-30 minutes in the morning and late afternoon.

Base Traffic Data

8.4.14 Traffic data from HBC's Hayling Island microsimulation model has been obtained with permission via their modelling consultant. This was taken from model runs which HBC commissioned. Further details of the data sources used in the traffic model and the calibration/validation process are provided in the Model Development Report in Appendix I of the TA (Appendix 8.1).

8.4.15 The base year of the microsimulation model is 2022. 12-hour (7am to 7pm) traffic data was provided by HBC's modelling consultant. This data has been factored to 24 hour annual average daily traffic (AADT) using the flow profiles recorded via an automatic traffic counter on the A3032 Havant Road to the north of Mill Rythe Junior School. The counter was installed by an independent traffic survey company for 7-days from 28th September 2022. The associated AADT values and HGV proportions for the links in the study area is provided in Table 8.6.

Table 8.6: 2022 Base Flows			
Link	Description	AADT	HGV%
1	St Mary's Rd W of Elm Grove	2150	0.7%
2	Church Rd N of St Mary's Rd	13966	2.1%
3	Tournerbury Ln E of Elm Grove	1191	0.3%
4	Elm Grove S of St Mary's Rd	12126	2.3%
5	Elm Grove N of Cherrywood Gardens	12085	2.3%
6	Elm Grove S of Cherrywood Gardens	12203	2.2%
7	Cherrywood Gardens W of Elm Grove	1379	1.1%
8	Cherrywood Gardens E of St Mary's Rd	1330	1.0%
9	St Mary's Rd W of Cherrywood Gardens	2403	0.6%
10	St Mary's Rd N of Cherrywood Gardens	1766	0.3%
11	St Mary's Rd E of A3023	2300	0.8%
12	A3023 S of St Mary's Rd	6091	1.6%
13	Station Rd W of A3023	3627	3.9%
14	A3023 N of St Mary's Rd	5960	3.9%
15	A3023 W of Church Rd	6803	4.2%
16	A3023 E of Church Rd	18740	3.2%
17	Church Rd S of A3023	13727	2.2%
18	A3023 N of Langstone Tech Park	12372	3.0%
19	Woodbury Av E of A3023	805	0.1%
20	A3023 S of Langstone Tech Park	23022	3.1%
21	Langstone Tech Park Access E of A3023	1917	0.9%
22	A3023 S of A27	24394	3.0%
23	A27 WB on-slip	10899	3.8%
24	A27 EB off-slip	12311	3.2%
25	Park Rd South N of A27	23922	3.4%
26	A27 EB on-slip	4439	3.0%
27	A27 WB off-slip	4381	3.3%
28	Langstone Bridge	21972	3.1%
29	A27 EB west of Langstone Rd slips	39298	7.0%
30	A27 WB west of Langstone Rd slips	39087	5.5%
31	A27 EB east of Langstone Rd slips	31424	7.9%
32	A27 WB east of Langstone Rd slips	32563	5.8%
33	Proposed Site Access	-	-
34	St Mary's Rd S of Proposed Site Access	-	-
35	A3023 Havant Rd S of Castlemans Ln	17980	3.4%
36	A3023 Havant Rd S of West Ln	17838	3.4%
37	West Ln W of A3023 Havant Rd	1831	0.7%
38	A3023 Havant Rd N of West Ln	19671	3.2%
39	Newtown Ln E of West Ln	1614	1.6%
40	West Ln N of Newtown Ln	2533	0.6%
41	West Ln W of Newtown Ln	2144	1.2%
42	Station Rd E of West Ln	3115	4.3%
43	West Ln NE of Station Rd	2213	0.8%
44	Station Rd W of West Ln	4275	3.5%

Forecast Traffic Data

8.4.16 The Applicant and the developers behind three other major applications on the Island commissioned HBC's modelling consultant to undertake forecast model runs using the base model as the starting point.

8.4.17 Forecast traffic flows were provided by HBC's modelling consultant for the following five scenarios:

- Reference Case (2022 Base plus traffic growth and committed developments – also referred to as 'Without Development');
- Scenario 1 – Rook Farm Site only (the Proposed Development – also referred to as 'With Development');
- Scenario 2 – Fathoms Reach Site only (APP/22/00001);
- Scenario 3 – 2 x Hayling Island Builders Sites only (APP/21/01350 & APP/21/01351); and
- Scenario 4 – All Development Sites (Scenarios 1+2+3 – also referred to as the 'Cumulative' scenario).

8.4.18 The four development scenarios were based on the Reference Case (RC) with the respective development traffic added. Forecast years of 2025 and 2035 were assessed by the microsimulation model. Only the RC ('Without Development'), Scenario 1 (hereon referred to as the 'Rook Farm' assessment or 'With Development') and Scenario 4 (hereon referred to as the 'Cumulative' assessment) will be assessed as part of this EIA, with the other developers responsible for their own assessments. The RC has been treated as the Future Baseline.

8.4.19 Given the delays with the model, it is accepted that 2025 is now somewhat hypothetical as the year of opening, therefore 2035 has been used for assessment purposes.

8.4.20 DfT software TEMPro (Trip End Model Presentation Program) version 8.1 (the latest at the time of assessment) has been chosen as a suitable method to forecast traffic growth for light vehicles (cars and light goods vehicles) with the DfT's National Road Traffic Projections (NRTP) growth factors a suitable method for heavy vehicles (HGVs, buses and coaches). This growth has been applied to island to A27 trips and A27 to A27 trips. The live applications will account for all island to island and island to local

(non-A27) mainland roads. This method for the application of traffic growth was agreed with HCC and NH prior to instructing the forecast model runs. The growth factors are provided in Table 2.1 and 2.2 of the Modelling Brief (Appendix H) of the TA (Appendix 8.1).

8.4.21 The application of 13-years of TEMPro and NRTP growth, along with traffic from committed developments, forms the 2035 RC traffic flows.

8.4.22 Lists of residential and commercial consented planning applications and allocations was provided to HBC's modelling consultant; this being supplied by HBC.

8.4.23 The AADT flows and HGV proportions for each scenario are shown in Tables 8.7, 8.8 and 8.9.

8.4.24 Note that links 33 and 34 only exist in the 2035 Rook Farm scenario and the 2035 Cumulative scenario. However, for comparison purposes, link 1 flows have been applied to link 34 in the RC scenario as the flows on both sections of the link will be virtually the same.

Table 8.7: 2035 Reference Case Flows			
Link	Description	AADT	HGV%
1	St Mary's Rd W of Elm Grove	2150	0.7%
2	Church Rd N of St Mary's Rd	13950	2.1%
3	Tournerbury Ln E of Elm Grove	1194	0.3%
4	Elm Grove S of St Mary's Rd	12112	2.3%
5	Elm Grove N of Cherrywood Gardens	12076	2.3%
6	Elm Grove S of Cherrywood Gardens	12167	2.2%
7	Cherrywood Gardens W of Elm Grove	1371	1.0%
8	Cherrywood Gardens E of St Mary's Rd	1321	0.9%
9	St Mary's Rd W of Cherrywood Gardens	2394	0.7%
10	St Mary's Rd N of Cherrywood Gardens	1759	0.3%
11	St Mary's Rd E of A3023	2279	0.8%
12	A3023 S of St Mary's Rd	6083	1.6%
13	Station Rd W of A3023	3610	3.9%
14	A3023 N of St Mary's Rd	5974	3.8%
15	A3023 W of Church Rd	6839	4.1%
16	A3023 E of Church Rd	18756	3.2%
17	Church Rd S of A3023	13724	2.2%
18	A3023 N of Langstone Tech Park	12353	3.0%
19	Woodbury Av E of A3023	806	0.2%
20	A3023 S of Langstone Tech Park	23007	3.1%
21	Langstone Tech Park Access E of A3023	1918	0.9%

Table 8.7: 2035 Reference Case Flows			
Link	Description	AADT	HGV%
22	A3023 S of A27	24378	3.0%
23	A27 WB on-slip	11379	3.7%
24	A27 EB off-slip	13008	3.2%
25	Park Rd South N of A27	25661	3.3%
26	A27 EB on-slip	4732	3.0%
27	A27 WB off-slip	4655	3.3%
28	Langstone Bridge	21954	3.1%
29	A27 EB west of Langstone Rd slips	43706	6.7%
30	A27 WB west of Langstone Rd slips	43510	5.2%
31	A27 EB east of Langstone Rd slips	35431	7.5%
32	A27 WB east of Langstone Rd slips	36781	5.4%
33	Proposed Site Access	-	-
34	St Mary's Rd S of Proposed Site Access	-	-
35	A3023 Havant Rd S of Castlemans Ln	17999	3.4%
36	A3023 Havant Rd S of West Ln	17853	3.4%
37	West Ln W of A3023 Havant Rd	1797	0.6%
38	A3023 Havant Rd N of West Ln	19649	3.2%
39	Newtown Ln E of West Ln	1595	1.7%
40	West Ln N of Newtown Ln	2516	0.7%
41	West Ln W of Newtown Ln	2130	1.1%
42	Station Rd E of West Ln	3097	4.3%
43	West Ln NE of Station Rd	2208	0.7%
44	Station Rd W of West Ln	4271	3.5%

Table 8.8: 2035 Rook Farm			
Link	Description	AADT	HGV%
1	St Mary's Rd W of Elm Grove	3375	0.4%
2	Church Rd N of St Mary's Rd	14787	2.0%
3	Tournerbury Ln E of Elm Grove	1212	0.2%
4	Elm Grove S of St Mary's Rd	12471	2.2%
5	Elm Grove N of Cherrywood Gardens	12413	2.2%
6	Elm Grove S of Cherrywood Gardens	12549	2.1%
7	Cherrywood Gardens W of Elm Grove	1405	1.1%
8	Cherrywood Gardens E of St Mary's Rd	1358	0.9%
9	St Mary's Rd W of Cherrywood Gardens	2710	0.6%
10	St Mary's Rd N of Cherrywood Gardens	2136	0.2%
11	St Mary's Rd E of A3023	2594	0.7%
12	A3023 S of St Mary's Rd	6194	1.6%
13	Station Rd W of A3023	3778	3.7%
14	A3023 N of St Mary's Rd	6081	3.7%
15	A3023 W of Church Rd	7064	4.0%
16	A3023 E of Church Rd	19335	3.1%
17	Church Rd S of A3023	14472	2.1%
18	A3023 N of Langstone Tech Park	12604	3.0%
19	Woodbury Av E of A3023	803	0.1%
20	A3023 S of Langstone Tech Park	23438	3.1%
21	Langstone Tech Park Access E of A3023	1923	0.8%
22	A3023 S of A27	24796	2.9%

Table 8.8: 2035 Rook Farm			
Link	Description	AADT	HGV%
23	A27 WB on-slip	11519	3.7%
24	A27 EB off-slip	13101	3.2%
25	Park Rd South N of A27	25782	3.3%
26	A27 EB on-slip	4765	2.9%
27	A27 WB off-slip	4679	3.3%
28	Langstone Bridge	22439	3.0%
29	A27 EB west of Langstone Rd slips	43770	6.7%
30	A27 WB west of Langstone Rd slips	43655	5.2%
31	A27 EB east of Langstone Rd slips	35428	7.4%
32	A27 WB east of Langstone Rd slips	36803	5.4%
33	Proposed Site Access	1676	0.0%
34	St Mary's Rd S of Proposed Site Access	2548	0.6%
35	A3023 Havant Rd S of Castlemans Ln	18499	3.3%
36	A3023 Havant Rd S of West Ln	18348	3.3%
37	West Ln W of A3023 Havant Rd	1815	0.7%
38	A3023 Havant Rd N of West Ln	20160	3.1%
39	Newtown Ln E of West Ln	1640	1.7%
40	West Ln N of Newtown Ln	2569	0.8%
41	West Ln W of Newtown Ln	2138	1.2%
42	Station Rd E of West Ln	3244	4.1%
43	West Ln NE of Station Rd	2244	0.8%
44	Station Rd W of West Ln	4393	3.4%

Table 8.9: 2035 Cumulative Flows			
Link	Description	AADT	HGV%
1	St Mary's Rd W of Elm Grove	3363	0.4%
2	Church Rd N of St Mary's Rd	14782	2.0%
3	Tournerbury Ln E of Elm Grove	1221	0.2%
4	Elm Grove S of St Mary's Rd	12472	2.2%
5	Elm Grove N of Cherrywood Gardens	12418	2.2%
6	Elm Grove S of Cherrywood Gardens	12550	2.1%
7	Cherrywood Gardens W of Elm Grove	1439	0.9%
8	Cherrywood Gardens E of St Mary's Rd	1389	0.9%
9	St Mary's Rd W of Cherrywood Gardens	2773	0.5%
10	St Mary's Rd N of Cherrywood Gardens	2142	0.3%
11	St Mary's Rd E of A3023	2651	0.6%
12	A3023 S of St Mary's Rd	6402	1.6%
13	Station Rd W of A3023	3908	3.6%
14	A3023 N of St Mary's Rd	6373	3.7%
15	A3023 W of Church Rd	7259	4.0%
16	A3023 E of Church Rd	19502	3.1%
17	Church Rd S of A3023	14476	2.1%
18	A3023 N of Langstone Tech Park	12773	2.9%
19	Woodbury Av E of A3023	807	0.2%
20	A3023 S of Langstone Tech Park	23723	3.0%
21	Langstone Tech Park Access E of A3023	1934	0.9%
22	A3023 S of A27	25082	2.9%
23	A27 WB on-slip	11616	3.7%

Table 8.9: 2035 Cumulative Flows			
Link	Description	AADT	HGV%
24	A27 EB off-slip	13189	3.1%
25	Park Rd South N of A27	25856	3.3%
26	A27 EB on-slip	4795	2.9%
27	A27 WB off-slip	4691	3.3%
28	Langstone Bridge	22757	3.0%
29	A27 EB west of Langstone Rd slips	43888	6.6%
30	A27 WB west of Langstone Rd slips	43749	5.2%
31	A27 EB east of Langstone Rd slips	35488	7.4%
32	A27 WB east of Langstone Rd slips	36817	5.4%
33	Proposed Site Access	1681	0.0%
34	St Mary's Rd S of Proposed Site Access	2542	0.6%
35	A3023 Havant Rd S of Castlemans Ln	18700	3.3%
36	A3023 Havant Rd S of West Ln	18552	3.3%
37	West Ln W of A3023 Havant Rd	1937	0.6%
38	A3023 Havant Rd N of West Ln	20490	3.1%
39	Newtown Ln E of West Ln	1832	1.6%
40	West Ln N of Newtown Ln	2819	0.6%
41	West Ln W of Newtown Ln	2228	1.1%
42	Station Rd E of West Ln	3359	4.0%
43	West Ln NE of Station Rd	2331	0.8%
44	Station Rd W of West Ln	4596	3.2%

Future Baseline

8.4.25 The RC has been treated as the Future Baseline. Reference should be made to paragraph 8.4.18.

Sensitive Receptors

8.4.26 The 44 links in the study area have been classified based on the receptor sensitivity descriptions provided in Table 8.3. This link sensitivity classification is provided in Table 8.10 with a plan provided as Appendix 8.3.

Table 8.10: Study Area Link Sensitivity			
Site	Description	Sensitivity	Main Reasons
1	St Mary's Rd W of Elm Grove	Low	Residential with adequate footway
2	Church Rd N of St Mary's Rd	High	The Hayling College
3	Tournerbury Ln E of Elm Grove	Medium	Shops & at HBC's request (Scoping Opinion (Appendix 2.2))
4	Elm Grove S of St Mary's Rd	High	Care home, property c. 3m from road, at HBC's request (Scoping Opinion (Appendix 2.2))& bus route
5	Elm Grove N of Cherrywood Gardens	Medium	Bus route
6	Elm Grove S of Cherrywood Gardens	Medium	Shops with roadside frontage & bus route
7	Cherrywood Gardens W of Elm Grove	Low	Residential with adequate footway

Table 8.10: Study Area Link Sensitivity			
Site	Description	Sensitivity	Main Reasons
8	Cherrywood Gardens E of St Mary's Rd	Low	Residential with adequate footway
9	St Mary's Rd W of Cherrywood Gardens	Low	Residential with adequate footway
10	St Mary's Rd N of Cherrywood Gardens	High	Mengham Infant School, Nursery & retirement home
11	St Mary's Rd E of A3023	Low	Residential with adequate footway
12	A3023 S of St Mary's Rd	Low	Residential with adequate footway
13	Station Rd W of A3023	Medium	Shops with roadside frontage & bus route
14	A3023 N of St Mary's Rd	Medium	Bus route
15	A3023 W of Church Rd	Medium	Bus route
16	A3023 E of Church Rd	High	Mill Rytte schools
17	Church Rd S of A3023	Medium	Bus route
18	A3023 N of Langstone Tech Park	Medium	Bus route
19	Woodbury Av E of A3023	Low	Residential with adequate footway
20	A3023 S of Langstone Tech Park	Medium	Bus route
21	Langstone Tech Park Access E of A3023	Low	Adjacent restaurant, hotel & technology park
22	A3023 S of A27	Medium	Bus route
23	A27 WB on-slip	Very Low	No frontage
24	A27 EB off-slip	Very Low	No frontage
25	Park Rd South N of A27	Medium	Bus route
26	A27 EB on-slip	Very Low	No frontage
27	A27 WB off-slip	Very Low	No frontage
28	Langstone Bridge	Medium	Bus route
29	A27 EB west of Langstone Rd slips	Very Low	No frontage
30	A27 WB west of Langstone Rd slips	Very Low	No frontage
31	A27 EB east of Langstone Rd slips	Very Low	No frontage
32	A27 WB east of Langstone Rd slips	Very Low	No frontage
33	Proposed Site Access	N/A	Not existing
34	St Mary's Rd S of Proposed Site Access	High	Mengham Infant School, Nursery & retirement home
35	A3023 Havant Rd S of Castlemans Ln	Medium	Properties c. 2m from road, at HBC's request (Scoping Opinion (Appendix 2.2)) & bus route
36	A3023 Havant Rd S of West Ln	Medium	Bus route
37	West Ln W of A3023 Havant Rd	Low	Residential with adequate footway
38	A3023 Havant Rd N of West Ln	Medium	Property c. 3m from road, at HBC's request (Scoping Opinion (Appendix 2.2))& bus route
39	Newtown Ln E of West Ln	Low	Residential with adequate footway
40	West Ln N of Newtown Ln	High	Residential with no footways
41	West Ln W of Newtown Ln	Low	Residential with adequate footway
42	Station Rd E of West Ln	Medium	Shops with roadside frontage & bus route
43	West Ln NE of Station Rd	Low	Residential with adequate footway
44	Station Rd W of West Ln	Medium	Shops with roadside frontage & bus route

8.4.27 The majority of links have been identified as having very low, low or medium sensitivity. The six links that have been classed as having high sensitivity are as follows:

- Link 2 – passes The Hayling College;
- Link 4 – passes side entrance to Limewood retirement home;
- Links 10 and 34 – passes Mengham Infant School, CherryHarbour Nursery and car park entrance to Limewood retirement home;
- Link 16 – passes Mill Rythe Infant and Junior Schools; and
- Link 40 – has residential frontage but no footways.

8.4.28 There are 18 links which have medium sensitivity for reasons including shops with roadside frontage, on bus routes and residential properties identified as being close to the A3023 carriageway/back of footway by HBC in the Scoping Opinion.

8.4.29 Specially sensitive areas, such as Areas of Outstanding Natural Beauty, Sites of Special Scientific Interest, World Heritage sites etc. are located away from the study area but are considered in Chapter 6 (Air Quality) and Chapter 7 (Ecology).

Limitations

8.4.30 Limitations of the assessment relate to the use of the Hayling Island microsimulation model as set out below. However, HCC and NH have accepted the model for use and we believe that it is an appropriate tool to assess the impact of the Proposed Development and to derive suitable mitigation measures, where required.

8.4.31 The main limitation is that this assessment uses traffic data from the microsimulation model. Whilst it is agreed that the model is a suitable tool to assess the impact of the Proposed Development, full control of the model is not available and as such only data available from it in the public domain and traffic flow data provided to the Applicant by the modelling consultant can be used. The data provided is limited to traffic flows only.

8.4.32 A second limitation of the assessment is that traffic flows from the Hayling Island microsimulation model are based on data recorded in September 2022. This, like the data used in many models, is a 'snapshot of time' rather than a range of days and different times of the year. A summertime model has been produced alongside this neutral month model, however, it has not been used in this assessment directly as its

data was recorded during Bank Holiday weekend in August 2022 when the Island is typically at its busiest. The summertime model was produced in response to issues raised by the Planning Inspectorate during the Examination in Public stage of the previous iteration of the emerging Local Plan. We consider the summertime model to be an unreasonable worst-case and an alternative summer weekend should have been modelled, though the summertime model has been used in the assessment presented in the TA (Appendix 8.1).

8.4.33 A third limitation is that the RC scenario, which forms the future baseline, includes traffic from committed developments, not just background traffic growth. The 2023 IEMA Guidelines state that committed developments should be included in the cumulative scenario, rather than the future baseline. However, this methodology follows that of the previous assessment which was agreed prior to the publication of the 2023 IEMA Guidelines which made this differentiation. More significantly, the level of traffic in the study area generated by these committed developments is fairly minimal and unlikely to make a material difference to the results.

8.4.34 A package of potential sustainable transport enhancement measures has been developed, which could provide mitigation, if this is required. However the model does not fully take into account potential levels of uptake of sustainable modes and potential modal shift, this does however mean that the assessment is particularly robust.

8.5 Assessment of Effects

Design Solutions and Assumptions

8.5.1 The development proposals include embedded mitigation which refers to the immediate measures required to make the Site accessible for all modes of transportation.

Construction Phase

8.5.2 It has also been assumed that all of the construction traffic will travel from/to the north of the Site via the A3023 and Church Road from the mainland. There may however be scope to use more local materials and workers based on the island.

8.5.3 A construction Traffic Management Plan (CTMP) will be required at the reserved matters stage following a planning condition to be expected as part of this outline application. The CTMP will be prepared by the housebuilder/contractor who will have a greater degree of certainty over the likely number of construction trips and phasing of the build-out and will include measures to reduce the impact of such traffic on the local highway and PRow networks. These measures are likely to include, but not limited to, hours of Site operation/access, provision of wheel washing facilities, parking strategies for construction workers and measures to protect road and PRow users during construction.

8.5.4 It is important to consider the working hours, routing, noise, vibration, dust, odour and debris or mud on the highway. The ways these will be monitored and mitigated by the housebuilder/contractor are, but not limited to, the following:

- Working Hours and Routing
 - Ensuring that traffic to/from the Site adheres to the agreed routes to ensure traffic nuisance is not inadvertently caused;
 - HGV traffic to be scheduled to reduce the number of vehicles waiting to gain access to the Site at any one time, while reasonable space will be provided on Site to minimise the queuing or waiting of HGVs outside the Site boundary;
 - All deliveries will be undertaken within approved hours with no deliveries or Site operations to occur on a Sunday, public or Bank Holiday without the prior written consent of the planning authority; and
 - All deliveries can be undertaken outside of the drop-off and pick-up times of Mengham Infant School.
- Noise and Vibration
 - Use of well-maintained vehicles and equipment; and
 - Enforcement of the designated Site access point(s) and travel routes.
- Dust, Odour, Debris and Mud
 - Loading and unloading of materials to be undertaken within the enclosed Site boundary;
 - Wheel-washing of all vehicles egressing the Site;
 - Cleaning of the highway local to the Site; and
 - Minimise mud, litter and debris in general.

- 8.5.5 The CTMP will be updated by the housebuilder and/or their principal contractor and provided to HCC and HBC for review at appropriate intervals. Should any issues occur, the document will be amended as necessary.

Operational Phase

- 8.5.6 The main vehicular access will be provided from St Mary's Road via a simple priority-controlled junction. The geometry used is appropriate to accommodate the limited number of large vehicles, such as refuse collection and bulky goods deliveries, that will access the Site per day during the operational phase. The access will also be able to safely accommodate construction traffic. This has been demonstrated in the swept path analysis included in Appendix E of the TA (Appendix 8.1).
- 8.5.7 An appropriate level of visibility is achievable from the access based on recorded 85th percentile speeds as detailed further in Section 4 of the TA (Appendix 8.1).
- 8.5.8 Footways will be provided at the Site access to connect with the existing provision on the northern side of St Mary's Road.
- 8.5.9 All possible pedestrian connections to the local public right of way network, where the footpaths abut the Site, will be made, maximising pedestrian connectivity for the residents of the Site. This includes potential pedestrian and/or cycle connections to public rights of way to the west of the Site, which would also provide onward connectivity to the proposed Fathom's Reach development. A potential connection is also proposed up to the Site's northern boundary.
- 8.5.10 Emergency access only can be provided from Rook Farm Way which the landowner has access rights to.
- 8.5.11 A number of pedestrian improvements will be made which will not only be of benefit to residents of the Site, but also offer benefit to existing residents and road users. These improvements include:
- A new footway on the southern side of St Mary's Road outside Limewood retirement apartments;
 - Uncontrolled pedestrian crossing over St Mary's Road south-west of Site access;
 - Uncontrolled crossing on St Mary's Road over public car park access;

- Uncontrolled crossing over St Mary's Road at Elm Grove junction;
- Uncontrolled crossings with pedestrian refuge islands over Elm Grove and Church Road at junction with St Mary's Road and Tournerbury Lane; and
- Footway widening on northern side of St Mary's Road between proposed site access and Church Road to facilitate shared cycle use.

8.5.12 The above improvements are localised in nature and were not included in the microsimulation model.

8.5.13 A Travel Plan (Appendix 8.2) has been prepared which presents a number of measures to promote and encourage travel by sustainable modes to help further reduce the impact of the Proposed Development.

Assessment of Effects

Construction Phase

8.5.14 The TRICS *Construction Traffic Research Report* (2008) notes how, in recent years, the UK construction industry has been reducing the costs and increasing the efficiency associated with construction traffic as it has moved toward competitive tendering procurement creating pressure to optimise the supply chain. There has been further acceleration in efficiency more recently, with many construction companies and developers adopting initiatives to reduce carbon emissions, with many such initiatives further increasing efficiency.

8.5.15 Efficiencies have been created by developing and enhancing techniques and working practices including:

- Supply chain optimisation;
- Load optimisation;
- Consolidation centres;
- Just in Time deliveries;
- 4th party logistics (outsourcing); and
- Delivery booking (deliveries by pre-arranged time slots).

8.5.16 In addition to the above, modern methods of sustainable construction will mean that much of the existing material on the Site will be reused which will minimise the need for additional fill materials to be brought to Site by HGVs.

8.5.17 These efficiencies reduce the number of vehicles generated during the construction phase, and to some extent, the distance travelled by them. Nevertheless, the construction phase of the Site will result in a temporary increase of HGVs, light goods vehicles (LGV) and cars carrying construction workers, materials and equipment on roads surrounding the Site.

8.5.18 The TRICS report groups the typical vehicle types associated with construction, these being:

- Car/pick up/3.5 ton van;
- 7.5 ton box van/panel van;
- Low loader and articulated Heavy Goods Vehicle (HGV);
- Ready mix concrete truck;
- Mobile crane;
- Skip lorry; and
- Tipper truck (up to 32 ton).

8.5.19 It is difficult to predict the precise number of construction vehicles at this outline application stage due to the varying work practices of different housebuilders/construction companies, with the end builder not likely to be known until post-determination. Similarly, the volume of earth moving equipment, particularly tipper trucks removing or delivering material from/to the Site, will be dependent on the existing and builder's desired levels on the Site. This is reflected in the TRICS report which states that:

'...at outline application stage, the degree of certainty required for such calculations (related to the variables of materials, speed and type of construction and site logistics) is frequently not available as the construction methods and programme may not be finalised and contractors not appointed.'

8.5.20 Construction traffic will vary per phase with the initial stages generally requiring greater use of HGVs for excavation, site clearance and ground level remodelling, such as tipper trucks and excavators with the latter generally transported on low loader articulated vehicles. Later stages will generate more HGVs used to transport construction materials, such as low loaders carrying bricks, prefabricated timber

structures (roof supports) etc. and a greater number of site staff. Excavating equipment tends to remain on sites until the need for it ceases. It is useful to note that undeveloped sites such as this tend to require less remedial works and less material to be removed from site, limiting the need for high numbers of HGVs during the initial stages of construction.

8.5.21 It is anticipated that construction will commence in 2027 and the Site will be fully built-out by 2035 with circa 40 dwellings built per year. The typical hours of construction operation are expected to be between 0700-1900 Monday to Friday and 0700-1300 on Saturdays although the precise hours will be determined in the CTMP to be submitted at the reserved matters stage.

8.5.22 Construction traffic will be spread across these time periods which start and end outside of the local network peak hours minimising the impact in terms of traffic flow volume and highway network capacity. The TRICS report notes:

'...in general, construction traffic will have minimal impact on traffic, except where temporary road closures or re-routing is required.

Construction traffic normally generates less vehicle movements than the agreed use of a new development.'

8.5.23 The strategic nature of the access to Hayling Island, specifically from the A27, then along the A3023 for much of the journey length, will be conducive to the safe movement of construction traffic minimising the impact on local settlements, with Church Road leading to St Mary's Road which will provide direct access to the Site.

8.5.24 The TRICS Research Report 25/1 *Construction Traffic at Residential SAM Developments* (2025) undertook construction trip generation surveys at residential developments between 2021 and 2023 in edge of town and neighbourhood centre (village) locations.

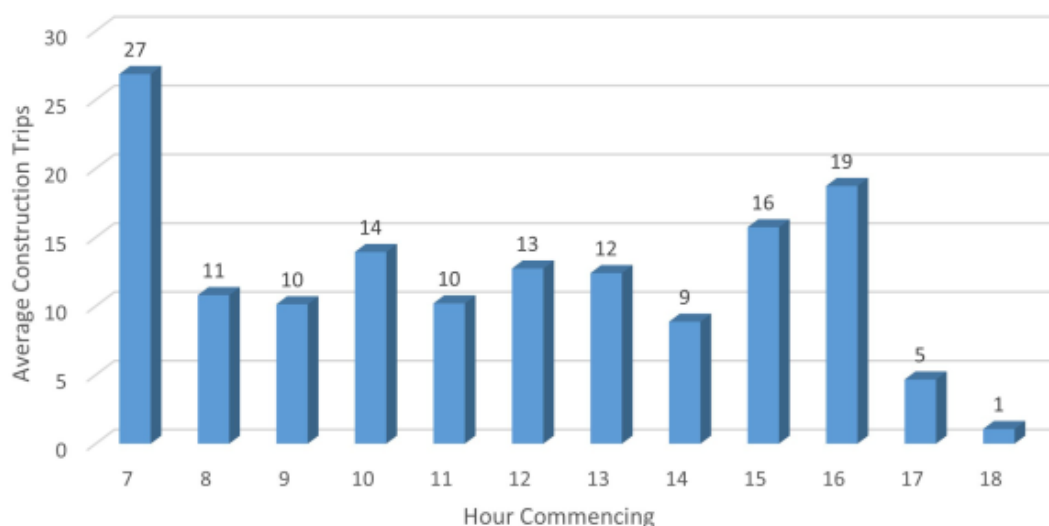
8.5.25 The report presents the following proportionate split of construction vehicle types for the sites in edge of town locations:

- LGVs = 60%;
- Cars (including taxis, motorcycles, pedal cycles and scooters) = 25%; and
- HGVs = 15%.

8.5.26 The report also calculated an average 12-hour (0700-1900) construction vehicle trip rate per dwelling of 0.397 for edge of town locations. A lower trip rate was calculated for developments in neighbourhood centres. Whilst the Site location could fall into either locational category, for assessment purposes, the higher trip rate has been used.

8.5.27 The TRICS report also presents the hourly profile of construction traffic based on the surveyed sites, with Figure 8.1 below showing the average inbound plus outbound construction trips per hourly period for houses privately owned in edge of town locations.

Figure 8.1: Average Construction Traffic Profile



8.5.28 Figure 8.1 shows that the peak hour of construction trips was 0700-0800, this being the hour prior to the local AM peak hour. Similarly, the PM construction peak occurs at 1600-1700, the hour prior to the local network PM peak hour. The number of trips during the local inter peak hour (1500-1600) is less than both the construction AM and PM peak hours.

8.5.29 Based on the above construction traffic trip rate, the Proposed Development is forecast to generate 119 daily two-way trips between 0700 and 1900. The maximum number trips forecast in any one hour will be 22 trips in AM construction peak of 0700-0800, with the average number of trips per hour being 9.92, with the average number of HGV trips per hour being 1.42. The number of trips forecast in the network AM,

inter peak and PM peak hours are 9, 13 and 4. Of the 119 12-hour trips, 71 are forecast to be LGVs, 30 cars and 18 HGVs.

8.5.30 The expected routing will be agreed in the CTMP.

Severance of Communities

8.5.31 The IEMA Guidelines advise that severance occurs when there is difficulty experienced in crossing a heavily trafficked road. As set out previously, construction traffic flows including HGVs represent a small proportion of the total traffic, less than 10 trips per hour.

8.5.32 The increase in construction traffic is therefore considered to have a very low impact on severance of communities and therefore a temporary negligible adverse effect on severance of communities which is **not significant**.

Road Vehicle Driver Delay and Passenger Delay

8.5.33 Construction traffic is likely to represent a small increase, but a considerable volume of traffic would be required to increase journey times by more than 30 seconds. This has been assessed as a very low impact.

8.5.34 Therefore, a temporary negligible adverse effect on road vehicle driver delay and passenger delay is determined which is **not significant**.

Non-motorised User Delay

8.5.35 As above, an increase in traffic of less than 10 construction trips per hour represents a very small proportionate increase in total traffic which is likely to represent a very low impact.

8.5.36 Therefore, a temporary negligible adverse effect on non-motorised user delay is determined which is **not significant**.

Non-motorised User Amenity

8.5.37 The IEMA Guidelines suggest that a tentative threshold for judging the significance of changes in pedestrian and cyclist amenity would be where the traffic flow (or its lorry

component) is doubled. It is however important to recognise that doubling low figures, such as single digits, will still only result in a low number of HGVs.

8.5.38 As stated above, at less than 2 trips per hour, HGV traffic flows as a result of the construction of the Proposed Development will have a very low impact, resulting in a temporary negligible adverse effect on non-motorised user amenity which is **not significant**.

Fear and Intimidation on and by Road Users

8.5.39 The pedestrian's level of fear and intimidation on and by road users can be established by volume of traffic as shown in Table 8.6.

8.5.40 As stated in the paragraphs above, less than 10 construction traffic trips per hour on average represents a very small proportion of the total existing traffic, much less than the 30% minor impact threshold, and any increase in HGV traffic, as a result of the construction traffic, is likely to represent a very low impact.

8.5.41 When considering the sensitivity of the receptors there is a temporary negligible effect for fear and intimidation on and by road users which is **not significant**.

Road User and Pedestrian Safety

8.5.42 Whilst we understand that HBC has concerns with the frequency of accidents on Hayling Island, from our review of accidents in the study area over the recent 5-year period presented in Section 7 of the TA (Appendix 8.1), there does not appear to be a pattern or common cause to the accidents that have taken place both locally to the Site and in the study area as a whole.

8.5.43 Multiple causation factors have been noted with driver error being the main factor in the vast majority of accidents. The number of accidents is not unusually high given the extent of this study area and the volume of traffic.

8.5.44 Analysis of the overall accident data indicates that the design and layout of the local highway network would not in itself appear to be an overriding factor in the cause of the accidents. The construction traffic associated with the development proposals

would result in less than a 30% increase in traffic or HGV proportions (very low) and is therefore unlikely to have a detrimental impact on the accident rate in the area.

8.5.45 Therefore, a temporary negligible adverse effect on road user and pedestrian safety is determined which is **not significant**.

Public Transport Users

8.5.46 It is not expected that construction traffic will prevent bus users from accessing bus services, nor is it expected that construction traffic will affect the routing or journey time reliability of bus services given the volumes presented above.

8.5.47 A temporary negligible adverse effect on public transport users is therefore determined which is **not significant**.

Operational Phase

Severance of communities; non-motorised user delay; non-motorised user amenity, fear and intimidation on and by road users; road user and pedestrian safety

8.5.48 Table 8.11 below shows the percentage increase as a result of the Proposed Development when comparing the 2035 Rook Farm (With Development) to the 2035 RC (Without Development) flows.

8.5.49 We believe that the negative increases (decreases) are as a result of what is commonly termed model 'noise' which can be defined as minor variations between model runs as a result of the complex algorithms in the modelling software and potentially some rounding. Such variations are common in microsimulation and to what we consider to be within a reasonable range. Furthermore, these decreases are associated with very small numbers and are insignificant, for example, the -50% value for HGV percentage increase on link 19 is a result of the loss of just one HGV on the link (2 minus 1).



Table 8.11: 2035 Rook Farm % Increase

Link	Description	AADT %	HGV %	Sensitivity
1	St Mary's Rd W of Elm Grove	57.0%	-6.3%	Low
2	Church Rd N of St Mary's Rd	6.0%	0.0%	High
3	Tournerbury Ln E of Elm Grove	1.5%	0.0%	Medium
4	Elm Grove S of St Mary's Rd	3.0%	0.0%	High
5	Elm Grove N of Cherrywood Gardens	2.8%	0.4%	Medium
6	Elm Grove S of Cherrywood Gardens	3.1%	0.4%	Medium
7	Cherrywood Gardens W of Elm Grove	2.5%	7.1%	Low
8	Cherrywood Gardens E of St Mary's Rd	2.8%	0.0%	Low
9	St Mary's Rd W of Cherrywood Gardens	13.2%	-6.3%	Low
10	St Mary's Rd N of Cherrywood Gardens	21.4%	-16.7%	High
11	St Mary's Rd E of A3023	13.8%	0.0%	Low
12	A3023 S of St Mary's Rd	1.8%	0.0%	Low
13	Station Rd W of A3023	4.7%	0.0%	Medium
14	A3023 N of St Mary's Rd	1.8%	-0.9%	Medium
15	A3023 W of Church Rd	3.3%	0.0%	Medium
16	A3023 E of Church Rd	3.1%	0.0%	High
17	Church Rd S of A3023	5.5%	0.0%	Medium
18	A3023 N of Langstone Tech Park	2.0%	0.3%	Medium
19	Woodbury Av E of A3023	-0.4%	-50.0%	Low
20	A3023 S of Langstone Tech Park	1.9%	0.1%	Medium
21	Langstone Tech Park Access E of A3023	0.3%	-5.9%	Low
22	A3023 S of A27	1.7%	-0.1%	Medium
23	A27 WB on-slip	1.2%	0.7%	Very Low
24	A27 EB off-slip	0.7%	0.0%	Very Low
25	Park Rd South N of A27	0.5%	0.1%	Medium
26	A27 EB on-slip	0.7%	0.0%	Very Low
27	A27 WB off-slip	0.5%	0.7%	Very Low
28	Langstone Bridge	2.2%	0.1%	Medium
29	A27 EB west of Langstone Rd slips	0.1%	-0.1%	Very Low
30	A27 WB west of Langstone Rd slips	0.3%	0.1%	Very Low
31	A27 EB east of Langstone Rd slips	0.0%	-0.1%	Very Low
32	A27 WB east of Langstone Rd slips	0.1%	0.0%	Very Low
33	Proposed Site Access	N/A	N/A	N/A
34	St Mary's Rd S of Proposed Site Access	18.5%	-6.3%	High
35	A3023 Havant Rd S of Castlemans Ln	2.8%	-0.2%	Medium
36	A3023 Havant Rd S of West Ln	2.8%	0.0%	Medium
37	West Ln W of A3023 Havant Rd	1.0%	9.1%	Low
38	A3023 Havant Rd N of West Ln	2.6%	0.2%	Medium
39	Newtown Ln E of West Ln	2.8%	3.7%	Low
40	West Ln N of Newtown Ln	2.1%	16.7%	High
41	West Ln W of Newtown Ln	0.4%	8.3%	Low
42	Station Rd E of West Ln	4.7%	0.0%	Medium
43	West Ln NE of Station Rd	1.6%	18.8%	Low
44	Station Rd W of West Ln	2.9%	0.7%	Medium

8.5.50 With reference to Table 8.11, there are no links where the increase in traffic flow exceeds the threshold that would constitute a moderate or major magnitude of impact. The highest percentage increase in AADT flow on any single link is 57.0%, this being link 1: St Mary's Road west of Elm Grove which is to the immediate east of the proposed Site access and therefore is naturally the link that will be subject to the greatest increase in traffic. This constitutes a low magnitude of impact and therefore a negligible adverse impact in all aspects other than road vehicle driver delay and passenger delay which is measured in minutes and will be discussed separately. The sensitivity of the receptors on this link was judged to be low.

8.5.51 As the magnitude of impact on all other links is less than 30%, a very low magnitude of impact is forecast. On links with high sensitivity (links 2, 4, 10, 16, 34 and 40) this results in a minor adverse effect, with a negligible adverse effect on all other links, both effects are **not significant**.

8.5.52 The embedded mitigation, to be delivered by the Applicant, includes a new section of footway on St Mary's Road, uncontrolled crossing over St Mary's Road near the public car park, uncontrolled crossings with pedestrian refuge island over the St Mary's Road, Elm Grove and Church Road junction with Tournurbury Lane, connection to the local PRow network from inside the Site and widening of the footway between the proposed site access and Church Road to allow shared cycle use. These measures will reduce the impact on the links local to the embedded mitigation, particularly links 1, 10 and 34.

8.5.53 In addition to this, there are a number of measures in the Travel Plan (Appendix 8.2) which will further encourage walking trips.

8.5.54 The Site access has been designed in accordance with current national and local design standards so there is no reason to suggest that accidents will increase or safety will be compromised as a result of the development proposals. It has also been subject to an independent Stage 1 Road Safety Audit (see Appendix F of the TA (Appendix 8.1)).

Road Vehicle Driver Delay and Passenger Delay

8.5.55 A series of journey time runs have been undertaken for the 2022 Base, 2035 RC and the 2035 Rook Farm scenarios. These have been undertaken for the following peak hours:

- AM peak (08:00-09:00);
- Inter peak (school PM peak) (15:00-16:00); and
- PM peak (17:00-18:00).

8.5.56 The journey time runs were undertaken along the following 5 routes:

- Route 1: A3023 Langstone Road (Havant Road) from Langstone Roundabout (A27) to West Lane;
- Route 2: A3023 Havant Road from West Lane to Mill Rythe Roundabout (Church Road/Manor Road);
- Route 3: West Lane from A3023 Havant Road to Brights Lane;
- Route 4: A3023 Manor Road between Mill Rythe Roundabout to Station Road; and
- Route 5: Church Road and St Mary's Road from Mill Rythe Roundabout to A3023 Manor Road.

8.5.57 Further details of these runs are provided in the TA (Appendix 8.1). Absolute journey times (JT) for each scenario along with the difference in JTs between the RC and the Rook Farm scenarios are shown in Table 8.12.

Table 8.12: Journey Time Results - Rook Farm					
08:00				Absolute (mm:ss)	Difference
Route	Direction	Base	RC	Rook Farm	Rook Farm
JT Route 1	NB	05:48	05:38	05:56	00:18
JT Route 1	SB	05:06	05:00	05:13	00:13
JT Route 2	NB	02:41	02:41	02:42	00:01
JT Route 2	SB	02:47	02:47	02:47	00:00
JT Route 3	NB	03:49	03:48	03:49	00:01
JT Route 3	SB	03:42	03:41	03:41	00:00
JT Route 4	NB	02:35	02:32	02:36	00:04
JT Route 4	SB	02:27	02:27	02:28	00:01
JT Route 5	NB	02:32	02:30	02:29	-00:01
JT Route 5	SB	02:32	02:31	02:32	00:01
15:00				Absolute (mm:ss)	Difference
Route	Direction	Base	RC	Rook Farm	Rook Farm
JT Route 1	NB	05:13	05:11	05:15	00:04
JT Route 1	SB	04:46	04:45	04:46	00:01

Table 8.12: Journey Time Results - Rook Farm					
JT Route 2	NB	02:42	02:42	02:42	00:00
JT Route 2	SB	02:53	02:52	02:54	00:02
JT Route 3	NB	03:46	03:46	03:46	00:00
JT Route 3	SB	03:42	03:41	03:41	00:00
JT Route 4	NB	02:32	02:32	02:32	00:00
JT Route 4	SB	02:29	02:31	02:31	00:00
JT Route 5	NB	02:32	02:29	02:30	00:01
JT Route 5	SB	02:36	02:35	02:35	00:00
17:00				Absolute (mm:ss)	Difference
Route	Direction	Base	RC	Rook Farm	Rook Farm
JT Route 1	NB	05:04	05:06	05:04	-00:02
JT Route 1	SB	04:52	04:51	04:52	00:01
JT Route 2	NB	02:36	02:37	02:37	00:00
JT Route 2	SB	02:48	02:48	02:50	00:02
JT Route 3	NB	03:44	03:44	03:44	00:00
JT Route 3	SB	03:41	03:41	03:41	00:00
JT Route 4	NB	02:30	02:28	02:28	00:00
JT Route 4	SB	02:28	02:25	02:25	00:00
JT Route 5	NB	02:29	02:29	02:30	00:01
JT Route 5	SB	02:33	02:33	02:36	00:03

8.5.58 Consideration of the change in journey time magnitudes of impact shown in Table 8.12, suggests that as the impact on the JT routes is less than 30 seconds, a very low magnitude of impact is forecast.

8.5.59 The above suggests that the Proposed Development will have a negligible to minor adverse effect on the routes in the study area which is **not significant**.

Public Transport Users

8.5.60 The Site's Travel Plan (Appendix 8.2) includes a number of measures to help encourage public transport use. It is anticipated that free bus passes for a period of time will be provided as part of the Travel Plan.

8.5.61 When adding together the JTs for each route by direction, in the AM peak hour the Proposed Development results in a 23 second increase northbound and 15 seconds southbound. The equivalent figures for the inter peak are 5 and 3 seconds, while for the PM peak they are 0 and 6 seconds. Considering the 25 second increase northbound in the AM peak as the highest increase in journey times, this remains a very low magnitude of impact and a level unlikely to impact bus timetables. It is

therefore considered that this is a negligible to minor adverse impact to public transport users, which is **not significant**.

8.6 Mitigation

Construction Phase

- 8.6.1 No mitigation in addition to the aforementioned CTMP is required. The CTMP will be a live document that can be regularly updated to address any unforeseen issues that may arise.

Operational Phase

- 8.6.2 Whilst the above assessment and the assessment provided in the TA suggests that traditional highway capacity mitigation is not required, following dialogue with HCC, the applicant has reviewed the potential to deliver active travel enhancements in the vicinity of the Proposed Development, in the context of the vision-led approach to transport planning contained in the NPPF, Circular 01/22 and HCC's aspirations in LTP4. Noting that the Site already benefits from access to a good active travel network, the delivery of these enhancements in connection with the Proposed Development would be subject to meeting planning tests of necessity and detailed design. The proposed enhancements include the following potential measures which are in addition to the embedded mitigation detailed above:

- New cycleways on Church Road between St Mary's Road and Mill Rythe Roundabout including puffin crossing upgrade to toucan and pedestrian and cycle-friendly side road crossing treatments. These improvements will notably enhance connectivity with The Hayling College;
- St Mary's Road upgrade to on-road cycling route including reduction in speed limit to 20mph and carriageway narrowings along with an upgrade of the zebra crossing on Beach Road to a parallel crossing. This will enhance east-west connectivity and provide a safe route to Mengham Infant School. It will also provide connectivity with the cycle route that passes through Hayling Park towards the Hayling Billy Trail along with the various amenities on Station Road;
- Upgrade of secondary cycle route between Church Road and Manor Road north of the Site including surfacing improvements, replacement of modal filter barriers, reduction of speed limit on Higworth Lane to 20mph and provision of parallel crossing over Manor Road. This will enhance connectivity with the Hayling Billy Trail; and

- Elm Grove between St Mary's Road and Selsmore Road upgrade to meet aspirations of LCWIP, including a reduction in speed limit to 20mph, pedestrian and cycle-friendly side road treatments and cycle route priority through Seagrove Road/Selsmore Road junction. This will enhance connectivity towards Sea Front and numerous day-to-day amenities.

8.6.3 Many of the active travel improvements also offer benefit to bus users as they have to walk between their origin/destination and the bus stops.

8.7 Residual Effects

Construction Phase

8.7.1 Whilst the construction period is likely to be circa 7-years, this should be considered to be in the short-term considering that each dwelling will exist for many years to come.

8.7.2 No specific additional construction phase mitigation is included in the assessment, therefore the temporary negligible adverse effect forecast in the main assessment remains applicable. The effect is therefore **not significant**. Whilst additional mitigation is not required, the embedded CTMP will manage and reduce the impact and effects of the construction traffic.

Operational Phase

Severance of communities; non-motorised user delay; non-motorised user amenity, fear and intimidation on and by road users; road user and pedestrian safety; road vehicle driver delay and passenger delay; public transport users

8.7.3 As the microsimulation model is a highway model, it cannot be used as a tool to consider the benefits of the above active travel improvement scheme, however, it is reasonable to predict that the eventual trip rates of the Proposed Development will likely be lower than those modelled, so the impact of the Proposed Development will likely be notably lower than the figures presented. It should also be noted that the uptake of active travel modes has health benefits.

8.7.4 Despite the benefits of the active travel improvement package, the magnitude of impacts of the Proposed Development will remain as per the full assessment which will result in negligible to minor adverse effects which are **not significant**.

Summary

8.7.5 A summary of the residual effects is provided in Table 8.13.

Table 8.13: Summary of Effects			
Link	Level of Effect (pre addition mitigation)	Additional Mitigation	Residual Effect
Construction Phase - Temporary			
All	Negligible adverse (not significant)	None (CTMP is embedded)	Negligible adverse (not significant)
Operational Phase – Permanent			
Severance of communities; non-motorised user delay; non-motorised user amenity, fear and intimidation on and by road users; road user and pedestrian safety			
2	Minor adverse (not significant)	Active travel package: Pedestrian and cycle crossings, footway/cycleway upgrades, new footway/cycleway provision, speed limit reduction & traffic calming	Minor adverse (not significant)
4	Minor adverse (not significant)		Minor adverse (not significant)
10	Minor adverse (not significant)		Minor adverse (not significant)
16	Minor adverse (not significant)		Minor adverse (not significant)
34	Minor adverse (not significant)		Minor adverse (not significant)
40	Minor adverse (not significant)		Minor adverse (not significant)
All others	Negligible adverse (not significant)		Negligible adverse (not significant)
Road vehicle driver delay and passenger delay			
All	Negligible adverse (not significant)	Active travel package	Negligible adverse (not significant)
Public transport users			
All	Negligible adverse (not significant)	None	Negligible adverse (not significant)

8.8 Assessment of Cumulative Effects

Intra-cumulative Effects

8.8.1 The same traffic data used in this assessment has been provided to the Air Quality consultants for use in Chapter 6. The relevant increases in traffic have been assessed accordingly in this chapter. Chapter 6 (Air Quality) did not however identify any significant effects from road traffic in relation to air quality.

- 8.8.2 No Intra-Cumulative Effects are identified because the traffic and access effects are negligible and Not Significant.

Inter-cumulative Effects

Construction Phase

- 8.8.3 The live applications are located away from the Proposed Development. As such, it is not anticipated construction traffic from those developments will travel along Church Road or St Mary's Road. There is the potential that construction traffic from these developments will travel along the A3023 at the same time as that of the Proposed Development, however, these other three schemes are smaller and will likely be completed much sooner than the Proposed Development.

- 8.8.4 The other three live applications total up to 140 dwellings which is 47% of the Proposed Development quantum. Rounding this up to 50% and adding 50% to the forecast construction traffic of the Proposed Development, and assuming a worst case of the construction phases of all four developments occurring at the same time, up to just 150 light vehicle and 26 heavy vehicles are forecast per day which would remain a very low impact resulting in a negligible effect which is **not significant**. The CTMP, however, will be implemented to minimise the residual environmental impact which could include coordination of construction traffic deliveries with the other developers. Regardless of any coordination with other developers, said developers will have their own CTMPs to mitigate their impact.

Operational Phase

Severance of communities; non-motorised user delay; non-motorised user amenity, fear and intimidation on and by road users; road user and pedestrian safety

- 8.8.5 The cumulative impact of the development with the other three live applications can be quantified as shown in Table 8.14 below.



Table 8.14: 2035 Cumulative % Increase

Link	Description	AADT %	HGV %	Sensitivity
1	St Mary's Rd W of Elm Grove	56.4%	-6.3%	Low
2	Church Rd N of St Mary's Rd	6.0%	0.0%	High
3	Tournerbury Ln E of Elm Grove	2.3%	0.0%	Medium
4	Elm Grove S of St Mary's Rd	3.0%	0.0%	High
5	Elm Grove N of Cherrywood Gardens	2.8%	-0.4%	Medium
6	Elm Grove S of Cherrywood Gardens	3.1%	0.0%	Medium
7	Cherrywood Gardens W of Elm Grove	5.0%	-7.1%	Low
8	Cherrywood Gardens E of St Mary's Rd	5.1%	0.0%	Low
9	St Mary's Rd W of Cherrywood Gardens	15.8%	-6.3%	Low
10	St Mary's Rd N of Cherrywood Gardens	21.8%	0.0%	High
11	St Mary's Rd E of A3023	16.3%	-5.6%	Low
12	A3023 S of St Mary's Rd	5.2%	2.0%	Low
13	Station Rd W of A3023	8.3%	0.0%	Medium
14	A3023 N of St Mary's Rd	6.7%	2.2%	Medium
15	A3023 W of Church Rd	6.1%	1.8%	Medium
16	A3023 E of Church Rd	4.0%	0.7%	High
17	Church Rd S of A3023	5.5%	0.0%	Medium
18	A3023 N of Langstone Tech Park	3.4%	0.3%	Medium
19	Woodbury Av E of A3023	0.1%	0.0%	Low
20	A3023 S of Langstone Tech Park	3.1%	0.1%	Medium
21	Langstone Tech Park Access E of A3023	0.8%	0.0%	Low
22	A3023 S of A27	2.9%	0.4%	Medium
23	A27 WB on-slip	2.1%	0.7%	Very Low
24	A27 EB off-slip	1.4%	0.2%	Very Low
25	Park Rd South N of A27	0.8%	0.0%	Medium
26	A27 EB on-slip	1.3%	0.0%	Very Low
27	A27 WB off-slip	0.8%	0.7%	Very Low
28	Langstone Bridge	3.7%	0.4%	Medium
29	A27 EB west of Langstone Rd slips	0.4%	0.0%	Very Low
30	A27 WB west of Langstone Rd slips	0.5%	0.1%	Very Low
31	A27 EB east of Langstone Rd slips	0.2%	0.0%	Very Low
32	A27 WB east of Langstone Rd slips	0.1%	0.0%	Very Low
33	Proposed Site Access	N/A	N/A	N/A
34	St Mary's Rd S of Proposed Site Access	18.2%	-6.3%	High
35	A3023 Havant Rd S of Castlemans Ln	3.9%	0.5%	Medium
36	A3023 Havant Rd S of West Ln	3.9%	0.7%	Medium
37	West Ln W of A3023 Havant Rd	7.8%	0.0%	Low
38	A3023 Havant Rd N of West Ln	4.3%	0.6%	Medium
39	Newtown Ln E of West Ln	14.9%	7.4%	Low
40	West Ln N of Newtown Ln	12.0%	0.0%	High
41	West Ln W of Newtown Ln	4.6%	4.2%	Low
42	Station Rd E of West Ln	8.5%	0.0%	Medium
43	West Ln NE of Station Rd	5.6%	12.5%	Low
44	Station Rd W of West Ln	7.6%	0.0%	Medium

8.8.6 When considered cumulatively, the impact on link 1 reduces very slightly to 56.4%, equivalent to a reduction of 12 AADT trips compared to the Rook Farm scenario, which is most likely as a result of model ‘noise’ rather than a reassignment of traffic. This still constitutes a low magnitude of impact.

8.8.7 The cumulative impact increases on some links, most notably links 37, 39 and 40 as these are in close proximity to two of the three other live applications, however, the impact on all links other than link 1 is less than 30%, therefore a very low magnitude of impact is forecast, resulting in a minor adverse effect on links of high sensitivity (links 2, 4, 10, 16, 34 and 40) and a negligible adverse effect on all other links. This negligible to minor adverse effect is **not significant**.

Road Vehicle Driver Delay and Passenger Delay

8.8.8 The cumulative impact of the development with the other three live applications based on journey time impacts can be quantified as shown in Table 8.15 below.

Table 8.15: Journey Time Results - Cumulative					
08:00				Absolute (mm:ss)	Difference
Route	Direction	Base	RC	Cumulative	Cumulative
JT Route 1	NB	05:48	05:38	05:56	00:18
JT Route 1	SB	05:06	05:00	05:26	00:26
JT Route 2	NB	02:41	02:41	02:41	00:00
JT Route 2	SB	02:47	02:47	02:47	00:00
JT Route 3	NB	03:49	03:48	03:49	00:01
JT Route 3	SB	03:42	03:41	03:42	00:01
JT Route 4	NB	02:35	02:32	02:35	00:03
JT Route 4	SB	02:27	02:27	02:28	00:01
JT Route 5	NB	02:32	02:30	02:29	-00:01
JT Route 5	SB	02:32	02:31	02:33	00:02
15:00				Absolute (mm:ss)	Difference
Route	Direction	Base	RC	Cumulative	Cumulative
JT Route 1	NB	05:13	05:11	05:13	00:02
JT Route 1	SB	04:46	04:45	04:46	00:01
JT Route 2	NB	02:42	02:42	02:42	00:00
JT Route 2	SB	02:53	02:52	02:53	00:01
JT Route 3	NB	03:46	03:46	03:46	00:00
JT Route 3	SB	03:42	03:41	03:41	00:00
JT Route 4	NB	02:32	02:32	02:32	00:00
JT Route 4	SB	02:29	02:31	02:31	00:00

Table 8.15: Journey Time Results - Cumulative					
JT Route 5	NB	02:32	02:29	02:28	-00:01
JT Route 5	SB	02:36	02:35	02:39	00:04
17:00				Absolute (mm:ss)	Difference
Route	Direction	Base	RC	Cumulative	Cumulative
JT Route 1	NB	05:04	05:06	05:11	00:05
JT Route 1	SB	04:52	04:51	04:55	00:04
JT Route 2	NB	02:36	02:37	02:38	00:01
JT Route 2	SB	02:48	02:48	02:50	00:02
JT Route 3	NB	03:44	03:44	03:44	00:00
JT Route 3	SB	03:41	03:41	03:41	00:00
JT Route 4	NB	02:30	02:28	02:30	00:02
JT Route 4	SB	02:28	02:25	02:27	00:02
JT Route 5	NB	02:29	02:29	02:25	-00:04
JT Route 5	SB	02:33	02:33	02:35	00:02

8.8.9 Consideration of the change in journey time magnitudes of impact for the cumulative scenario shown in Table 8.15, suggests that the impact on the JT routes is less than 30 seconds in both directions in all three peak hours, therefore a very low magnitude of impact is forecast on these routes.

8.8.10 The above suggests that the cumulative development will have a negligible to minor adverse effect on the routes in the study area which is **not significant**

Public Transport Users

8.8.11 There is the potential for a degree of integration between the Travel Plans of all four live applications which can help to reduce the cumulative impact.

8.8.12 When adding together the JTs for each route by direction, in the AM peak hour the Proposed Development results in a 21 second increase northbound and 30 seconds southbound. The equivalent figures for the inter peak are 1 and 6 seconds, while for the PM peak they are 0 and 10 seconds. Considering the 30 second increase southbound in the AM peak as the highest increase in journey times, this a low magnitude of impact and a level unlikely to impact bus timetables, with 26 seconds of this increase occurring on Route 1, the longest of the five journey time routes. It is therefore considered that this would result in a negligible to minor adverse effect to public transport users, which is **not significant**.

8.9 Conclusion

- 8.9.1 A detailed impact assessment on transport has been undertaken in this Chapter considering the impact on a study area consisting of 44 highway links. HBC's microsimulation model prepared as part of the evidence base for the emerging Local Plan has been used as a key tool to quantify the impact of the Proposed Development and the cumulative impact of the proposals with three other live planning applications on the island.
- 8.9.2 The embedded mitigation designed specifically to facilitate the development at Rook Farm will help to minimise the environmental impact of the development in the vicinity of the Site.
- 8.9.3 The forecast traffic modelling has shown that the Proposed Development and the cumulative developments can be accommodated on the local highway network without the need for highway mitigation.
- 8.9.4 The Applicant is, however, willing to contribute to a number of local active travel schemes which will further reduce the traffic impact of the Proposed Development and encourage healthy lifestyles.
- 8.9.5 Through our quantitative and qualitative analysis presented in this Chapter, we believe that the impact of the Proposed Development during the construction stage will result in a temporary negligible adverse effect which is **not significant**, while the impact during the operational phase, will be of a negligible to minor adverse effect which is **not significant**. The residual effects of the Proposed Development remain as per the full assessment.

9 SOILS AND AGRICULTURAL LAND

9.1 Introduction

9.1.1 This Chapter has been prepared by Land Research Associates and reports the likely significant effects of the Proposed Development in terms of soil resource and agricultural land in the context of the Site and surrounding area. In particular it considers the likely significant effects of construction of the Proposed Development on soil resource and agricultural land.

9.1.2 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 5), as well as the final chapter, 'Summary of Residual and Cumulative Effects' (Chapter 13).

9.2 Legislation, Policy and Guidance

9.2.1 The relevant legislation, policy and guidance are listed below.

Legislative Framework

9.2.2 There is no legislation of specific relevance to a soil resource and agricultural land assessment.

9.2.3 The applicable legislative framework is summarised as follows:

Planning Policy

9.2.4 The applicable planning policy is summarised as follows:

- National Planning Policy Framework (2024):
 - Paragraph 187 a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and **soils** (in a manner commensurate with their statutory status or identified quality in the development plan)
- Havant Borough Local Plan (Core Strategy) March 2011:
 - Policy CS11: Protecting and Enhancing the Special Environment and Heritage of Havant Borough
 - DM8: Conservation, Protection and Enhancement of Existing Natural Features
 - DM10: Pollution

Guidance

9.2.5 The applicable guidance is summarised as follows:

- Planning Practice Guidance: Natural Environment (2025): sets out the need to protect soils as an '*essential natural capital asset*' highlighting the use of Defra's *Code of practice for the sustainable use of soils on construction sites*. It also highlights how planning can take account of the quality of agricultural land.
- Natural England (2021): *Technical Guide to assessing development proposals on agricultural land* sets out further details on how the system of land grading should be applied to development sites.
- IEMA (2022) A New Perspective on Land and Soil in Environmental Impact Assessment.

9.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

Effects Not Considered within the Scope

9.3.1 Development of the Site would result in the loss of all agricultural land within the Site, either through built development or a change from agricultural to non-agricultural use. As there would be no potential for further loss of agricultural land after the development has been completed, the assessment of impacts during the operational phase is scoped out.

9.3.2 Similarly, all soil disturbance is expected to be completed during the construction phase. Accordingly, the assessment of impacts during the operational phase is scoped out.

9.3.3 The scoping opinion (September 2021) highlights that mitigation should be considered for adverse impacts on soils, specifically those which may affect the provision of community food growing provisions. However, this was based upon Policy E9 of the 2036 Local Plan which has now been withdrawn and is therefore no longer relevant to the Proposed Development.

Extent of the Study Area

9.3.4 The study area is limited to the confines of the Site development area (i.e. the redline shown at Appendix 1.1).

Consultation Undertaken to Date

- 9.3.5 The assessment methodology followed in the chapter is as described in the Scoping Report (Appendix 2.1); and the associated survey which followed the standard ALC methodology set out in Natural England's Technical Guide. No additional consultation has been carried out.

Assessment Methodology

- 9.3.6 The methodology used by LRA in this Chapter to assess the potential impacts of the Scheme has been developed over a number of years using professional judgement, and with reference to the following:
- The IEMA document 'A New Perspective on Land and Soil in Environmental Impact Assessment' (2022)
 - DEFRA (2009), Construction Code of Practice for the Sustainable Use of Soils on Construction Sites
 - British Society of Soil Science (BSSS) (2022) Working with Soil Guidance Note on 'Benefitting from Soil Management in Development and Construction'.
- 9.3.7 The method of baseline data collection and assessment has been undertaken in accordance with current guidance and industry best practice, as provided by Natural England's *Technical Guide to assessing development proposals on agricultural land (2021)*. Full details are provided within the technical site report included as Appendix 9.1 to this chapter.
- 9.3.8 Impacts of a project can be: adverse, causing negative impacts on a receptor; beneficial, resulting in advantageous or positive impacts on a receptor; or negligible. They are further explained in the sections below.

Sensitivity of Receptors

- 9.3.9 *Best and most versatile* agricultural land (i.e. Grades 1, 2 and 3a on Ministry of Agriculture, Fisheries and Food's (MAFF) 1988 Agricultural Land Classification (ALC) system) is considered to be a finite national resource, is given special consideration in national policy, and can be considered to be of higher sensitivity than land in Grades 3b, 4 and 5. In areas of the country where best and most versatile land is common, such as the Havant area, the best land (Grades 1 and 2) is considered of higher

sensitivity than Subgrade 3a. The loss of lower quality land is considered of lower importance under the planning system of England and Wales.

- 9.3.10 The assessment of impacts on soil follows a soil functions approach as recommended in the IEMA 2022 Guidance. This approach assesses the effect on one or more soil functions that soils are required to perform. The initial primary function for agricultural land is regarded as food and agricultural production, with secondary functions including mitigating flood risk and supporting soil biodiversity. Following land use change as part of a development, the primary soil functions would be expected to change. The nature of these post-development functions is dependent on the type of the development. In this instance it is determined that soil would primarily be required to support plant growth and soil biodiversity (landscaping, gardens, allotments and habitat areas) and to mitigate surface water flooding risk. All natural soils are finite resources, but where sites are to be developed, their quality as a resource for reuse varies. Medium and coarse loamy soils are regarded as of higher value for reuse and so of the highest sensitivity, since these soils are most effective at mitigating the effects of flooding and are of highest quality for reuse in gardens and planting schemes (also the most likely to meet British Standards criteria for use at other sites). Lower quality soils such as sandy or clayey topsoils are susceptible to damage and less valuable if soil function is lost in this context.
- 9.3.11 Permeable coarse or medium textured subsoils are reusable for planting schemes (e.g. to support tree growth) and have a greater function in mitigating the effects of flooding than heavy and slowly permeable subsoils. In some instances, soils have important properties which make them able to support rare habitats (e.g. species diverse calcareous grassland or lowland heath habitats).
- 9.3.12 The sensitivity criteria used in the assessment of effects on the two receptors are summarised in Table 9.1.

Table 9.1: Sensitivity of Receptors		
Sensitivity	Agricultural Land (Havant)	Soil Resource
Very high	Grades 1, 2	Permeable coarse loamy and medium loamy soils, or other soils capable of supporting valuable habitats.
High	Subgrade 3a	Fine textured or sandy topsoils not capable of supporting valuable habitats
Medium	Subgrade 3b	Slowly permeable soils
Low	Grades 4 and 5	Damaged or contaminated soils.
Negligible	Other land	No natural soils

Magnitude of Impacts

9.3.13 The magnitude of impact on *best and most versatile* land will depend on the amount to be taken by the development. Article 18, Schedule 4 of the Town and Country Planning (Development Management Procedure) (England) Order 2015 only requires Natural England to be consulted on development that involves the loss of not less than 20 hectares (ha) of grades 1, 2 or 3a agricultural land. Consequently, losses above this threshold are regarded as large magnitude. The judgment-based classification is given in Table 9.2.

9.3.14 The magnitude of impact on topsoil resources makes the assumption that, as a valuable finite resource, the requirement should be to protect topsoils from damage. However, since built developments often generate large surpluses of topsoil, the primary requirement is considered to be that sufficient topsoil should be protected to complete all on-site landscaping/greenspace requirements (provided the baseline resource is suitable for the proposed uses). Failure to do so is regarded as a large magnitude impact. If all topsoil is protected from damage, the impact is regarded as negligible. As few built developments are likely to require more than 50% of topsoil for reuse, losses below this figure are regarded as small.

9.3.15 Subsoil compaction under greenspace areas increases runoff (and is not typically accounted for in SuDS design). Severe compaction is also likely to adversely affect the success of landscaping/ecological planting schemes. Magnitude is considered as a percentage of the development scheme. Compaction of greater than 10% of the Site

is considered as high magnitude as it is likely to result in tangible increases in runoff volumes, of a magnitude which could affect the efficacy of SuDS design capacity.

Table 9.2: Magnitude of Impacts on Agricultural Land & Soil Resource		
Magnitude	Agricultural Land	Soil Resource
Large	Irreversible loss of >20 ha of agricultural land	Loss of >80% of topsoil resources and insufficient topsoil protected for on-site uses. Subsoil compaction of >10% of Site.
Medium	Irreversible loss of 5-20 ha of agricultural land	Loss or irreversible damage to 50-80% of topsoil resources. Compaction of 5-10% of subsoils.
Small	Irreversible loss of 1-5 ha of agricultural land	Loss or irreversible damage to <50% of topsoil resources. Compaction of <5% of subsoils.
Negligible	Irreversible loss of <1 ha of agricultural land	Only minor disturbance of soils within the Site.

Significance of Effects

9.3.16 The level of any beneficial or adverse effect can be assessed as either 'major' or 'moderate' (i.e. significant), 'minor' or 'negligible' according to the magnitude of the impact of the Proposed Development and the sensitivity of the receptor, as set out in Table 9.3 below.

Table 9.3: Significance of Effects					
Magnitude	Sensitivity				
	Very high	High	Medium	Low	Negligible
Large	Major	Major	Moderate	Minor	Minor
Medium	Major	Major	Moderate	Minor	Minor
Small	Moderate	Minor	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

Significance Criteria

9.3.17 Effects that are deemed to be significant for the purposes of this assessment are those that are described as being of a moderate or major beneficial or adverse level.

9.4 Baseline Conditions

- 9.4.1 A detailed report on the baseline soil and agricultural land quality data for the Site is provided in Appendix 9.1. The baseline conditions are summarised below.

Soils

- 9.4.2 The soils of the Site comprise medium loamy topsoils and upper subsoils, over slowly permeable lower subsoil layers.

Agricultural land

- 9.4.3 Land quality varies between Grade 2 (7.2 ha) in the north and Subgrade 3a (4.3 ha) in the south (see MAP 2 in Appendix 9.1), both limited for agriculture by wetness.

Future Baseline

- 9.4.4 The future baseline is not expected to change if the Proposed Development does not proceed.

Sensitive Receptors

Soils

- 9.4.5 The loamy topsoils are a high quality resource for reuse, and therefore, in reference to Table 9.1, are considered to be of **very high sensitivity** to potential loss or damage.

Agricultural land

- 9.4.6 All of the agricultural land within the Site (11.5 ha) is of *Best and Most Versatile* quality and therefore considered sensitive receptors. The remaining land within the Site (0.4 ha) comprises an area of scrub and an existing building in the centre of the site, a second area of scrub in the north-east comprising the access track from St Marys Road, and a mature hedgerow in the south-west; and is therefore considered non-agricultural.
- 9.4.7 Land of Subgrade 3a is relatively common in Havant District, and is therefore considered to be of **high sensitivity**; Grade 2 land is considered to be of **very high sensitivity**.

Limitations

- 9.4.8 There are not regarded to be any limitations to the data collection.

9.5 Assessment of Effects

Design Solutions and Assumptions

- 9.5.1 The assumption is that no changes have been made to the Site since the soil resource and agricultural quality survey was undertaken (January 2017).
- 9.5.2 There are not considered to be any further relevant solutions or assumptions.

Assessment of Effects

Soil Resource

- 9.5.3 Without mitigation, construction could result in the permanent loss of or damage to greater than 80% of the soil resource, resulting in a shortfall for the proposed final development with regard to landscaping. In accordance with the assessment criteria set out in this chapter, this is considered a large magnitude impact on a very high sensitivity resource, which would result in a **major adverse effect (significant)**.

Agricultural land

- 9.5.4 Construction would result in the irreversible loss of 7.2 ha of Grade 2 land and 4.3 ha of Subgrade 3a land. In accordance with the assessment criteria set out in this chapter, this is considered a medium magnitude impact on a very high sensitivity resource, and a small magnitude impact on a high sensitivity resource. This would result in a **major adverse effect (significant)**.

9.6 Mitigation

Soils

- 9.6.1 Mitigation for loss or damage of soil resources requires the adoption of a site-specific Soil Management Plan, undertaken by a suitably qualified practitioner in accordance with the principals outlined in the Defra (2009) Construction Code of Practice for Sustainable Use of Soils on Construction Sites, which will detail:
- Depth and method of topsoil stripping and stockpiling;
 - Identification of landscaping soil requirements and assessment of suitability and availability of on-site resources; and

- Means of subsoil protection from compaction damage and remedial measures (such as ripping/subsoiling) to remove damage.

9.6.2 Adoption of these measures should be fully effective in protecting soil resources for reuse.

Agricultural land

9.6.3 Built development involves the permanent loss of commercial agricultural land. However, the conservation of parts of the Site for community food production is regarded as partial mitigation. Accordance with the mitigation measures described in paragraph 9.6.1 will ensure soils and land are maintained in condition conducive to production of foodstuffs.

9.7 Residual Effects

Soils

9.7.1 Following the adoption of the mitigation measures described above, the residual effects on soils are regarded as **negligible (not significant)**.

Agricultural land

9.7.2 The residual effect on the loss of agricultural land is regarded as remaining **major adverse effect (significant)**.

9.7.3 A summary of the likely residual effects of the Proposed Development during the construction and operational phases are set out in Table 9.4.

Table 9.4 Summary of Residual Effects									
Receptor	Sensitivity (Neg / Low / Medium / High / Very High)	Likely Effect	Secondary Mitigation Proposed?	Magnitude of Impact (Neg / Small / Medium / Large / Very Large)	Nature of Effect (Direct / Indirect)	Temporal Scale (Short / Medium / Long)	Permanence of Effect (Temporary / Permanent)	Type of Effect (Adverse / Beneficial)	Residual Significance (Neg / Minor / Moderate / Major)
Construction Phase									
Soils	Very High	Loss or damage to soil resource	Soil Management Plan	Negligible	Direct	Long-term	Permanent	Adverse	Negligible (not significant)
Agricultural Land (Grade 2)	Very High	Loss of agricultural land	None	Medium	Direct	Long-term	Permanent	Adverse	Major (significant)
Agricultural Land (Grade 3a)	High	Loss of agricultural land	None	Small	Direct	Long-term	Permanent	Adverse	

9.8 Assessment of Cumulative Effects

Intra-cumulative effects

9.8.1 There are not regarded to be any intra-cumulative effects.

Inter-cumulative effects

9.8.2 There are not considered to be any relevant cumulative effects on soil resources given the residual effect after mitigation at the Site is regarded as negligible. There are potential cumulative effects of loss of agricultural land.

9.8.3 The development sites considered relevant for cumulative assessment are:

- Land at Sinah Lane, Hayling Island (APP/20/01093) This is an agricultural site containing 4.6 ha of grade 2 quality land and 2.6 ha of subgrade 3a quality land.
- 49-71 Fathoms Reach, Hayling Island (APP/22/00001) This is a non-agricultural site (no effect).
- Saltmarsh Lane, Hayling Island (APP/21/01351) No agricultural land grading is available
- North of Oysters, Hayling Island (APP/21/01350) No agricultural land grading is available
- Kingscroft Farm, (Havant APP/22/00669) No agricultural land grading is available.
- Park Road, Havant (APP/22/01231) This is a non-agricultural site (no effect)
- New Lane, Havant (APP/22/01039) This is a non-agricultural site (no effect)
- Tournurbury Lane, Hayling Island (APP/23/00076:) This is a non-agricultural site (no effect)
- Beachlands, 5 Sea Front, Hayling Island (APP/24/00968) This is a non-agricultural site (no effect)
- Langstone Technology Park, 2B Langstone Road, Havant (APP/22/00172) This is a non-agricultural site (no effect)
- B.M Scaffolding, Brockhampton Road, Havant, PO9 1JU This is a non-agricultural site (no effect)
- Land North of the Regional Business Centre (Havant Local Plan Policy HB2 Havant & Bedhampton Employment Allocations – Site Ref: BD10) This is a non-agricultural site (no effect).

9.8.4 Most of the sites above do not have Agricultural Land Classification information to the current classification system Guidelines, either conducted by government surveyors, or via original surveys submitted with the applications. Of the sites with information, the cumulative total agricultural land losses are as follows:

- 11.8 ha of grade 2 land
- 6.9 ha of subgrade 3a agricultural land.

9.8.5 Agricultural land is an important finite resource. However, an agreed methodology for the cumulative effects of their loss has not yet been established. It is proposed in the IEMA 2022 Guidelines that the loss of BMV land is compared to the change in national and regional average land loss over a set period of time. The guidance proposes that contribution to more than 1% of the average five year national land loss would be significant, however there is not a database for this yet. The total cumulative losses outlined in paragraph 9.8.3 will not equate to more than 1% of national losses and is therefore not significant in a national context. The loss of 11.8 ha of Grade 2 and 6.9 ha of Subgrade 3a quality agricultural land in a local context remain a **major adverse effect (significant)**.

9.9 Conclusion

9.9.1 The Site contains high quality soil resources for reuse and best and most versatile agricultural land. Following adoption of mitigation there would be negligible adverse effect on soils. The medium magnitude of loss of *best and most versatile* agricultural land means there is considered to be a significant adverse effect on the agricultural land resource.

10 WATER ENVIRONMENT

10.1 Introduction

- 10.1.1 This Chapter reports the likely significant effects of the Proposed Development in terms of Water Environment in the context of the Site and surrounding area during demolition, construction, and operation.
- 10.1.2 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 5), as well as the final chapter, 'Summary of Residual and Cumulative Effects' (Chapter 13).

10.2 Legislation, Policy and Guidance

- 10.2.1 The relevant legislation, policy and guidance are listed below, with full details provided in Appendix 10.1.

Legislative Framework

- 10.2.2 The applicable legislative framework is summarised as follows:
- The Water Framework Directive (WFD), 2000/60/EC.
 - Land Drainage Act 1991.
 - Water Resources Act 1991.
 - Flood Water Management Act 2010.
 - Water Research Centre (WRC) (2012) Sewers for Adoption, 7th Edition.
 - Office of the Deputy Prime Minister, The Building Regulations, 2010, Part H, as amended.
 - Water Act 2003.
 - Environment Act 2021.
 - UK Climate Change Projections 2009 (UKCP09).

Planning Policy

- 10.2.3 The applicable planning policy is summarised as follows:
- National Planning Policy Framework (NPPF) (2024).
 - Havant Borough Council Local Plan (Core Strategy) (2011)
 - Policy CS15: Flood and Erosion Risk
 - Policy DM9: Development in the Coastal Zone
 - Havant Borough Local Plan (Allocations) (2014)
 - Policy AL4: Coastal Change Management Areas

- Havant Borough Council Hayling Island Coastal Management Strategy (2023).
- Hampshire County Council Local Flood Risk Management Strategy (2020).
- Hampshire County Council Lavant Catchment Flood Management Plan (2023).
- Hampshire County Council Groundwater Management Plan (2013).
- Hampshire County Council Preliminary Flood Risk Assessment (PFRA) and associated mapping (2011).
- Partnership for South Hampshire Level 1 Strategic Flood Risk Assessment (2024).

Guidance

10.2.4 The applicable guidance is summarised as follows:

- Planning Practice Guidance ID: 7, Flood Risk and Coastal Change 2022.
- Making Space for Water, July 2004.
- CIRIA (2004a) Interim Code of Practice for Sustainable Drainage Systems.
- CIRIA (2004b) Report C609B, Sustainable Drainage Systems – Hydraulic, Structural and Water Quality Advice.
- CIRIA (2004c) Funders Report CP/102 Development and Flood Risk – Guidance for the Construction Industry.
- CIRIA (2015) Report C753, The SuDS Manual (Appendix 10.5).
- CIRIA C624 Development and Flood Risk – Guidance for the Construction Industry.
- CIRIA (1999) C502 Environmental Good Practice on Site.
- CIRIA (2001) C532 Control of Water Pollution from Construction Sites.
- BRE DG 365 (2016) Soakaway Design.
- BS 8582 (2013). Code of practice for surface water management for development sites.
- BS EN 752 (2008) Drain and Sewer Systems Outside Buildings.
- Building Regulations (2010). Drainage and Waste Disposal – Part H.
- British Water Code of Practice (2013). Flows and Loads – 4, 2013.
- Environment Agency Pollution Prevention Guidelines.
- DEFRA (2015). Non-Statutory Technical Standards for Sustainable Drainage Systems. Department for Environment, Food & Rural Affairs.
- Design Manual for Roads and Bridges (DMRB 2020) CD 530 Design of Soakaways.
- Design Manual for Roads and Bridges (DMRB 2019) LA 104 Revision 1. Environmental Assessment and Monitoring.

- Environment Agency (2016). Flood risk assessments: climate change allowances.
<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>
- Environment Agency (2017). Protect Groundwater & Prevent Groundwater Pollution.
- Environment Agency Pollution Prevention Guidelines.
- Local Authority SuDS Officer Organisation [LASOO] (2016). Non-Statutory technical Standards for Sustainable Drainage – Practice Guidance Local Authority SuDS Officer Organisation.
- UKSuDS.com (2015). Sustainable Drainage Guidance.
<http://www.uksuds.com/drainagecalculation-tools/greenfield-runoff-rate>
- WRC (2012). Sewers for Adoption (7th Edition).
- A Better Quality of Life – A Strategy for Sustainable Development for the United Kingdom (1999).

10.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

- 10.3.1 This Chapter describes the policy context, input data and methods used to assess the Proposed Development in terms of the baseline hydrology and flood risk at the Site, and the potential impacts of the Proposed Development; accounting for the measures that will be adopted to prevent, reduce, mitigate (inclusive of embedded mitigation) or offset the identified impacts. Potential impacts relate primarily to flood risk and to the management of surface water, which (in turn) requires consideration of water quality.
- 10.3.2 The assessment covers the construction and ongoing operation of the Proposed Development and identifies those aspects of the proposals that have the potential to affect the existing baseline conditions. It does not consider end-of-life decommissioning /demolition, since for most developments some more localised redevelopment / rebuilding within the Site is likely beyond the 75-year life of a typical commercial / residential development.
- 10.3.3 It must be noted that this assessment includes an assessment on the impacts of the decommissioning/demolition of an onsite agricultural buildings. This is due to the

presence of a small agricultural building within the Site which shall be removed as part of the development.

10.3.4 The assessment addresses the following:

- Changes to natural drainage patterns.
- Effects on runoff rates and volumes.
- Effects on erosion and sedimentation.
- Effects on surface and groundwater water quality.
- Effects on water resources (both private and public water supplies).
- Effects on flooding and impediments to flow.
- Pollution risk.

10.3.5 This Chapter:

- Establishes the existing flood risk and drainage baseline from desk studies, dedicated surveys and consultation.
- Identifies the assumptions used and limitations encountered in compiling the environmental information.
- Identifies the potential direct and indirect environmental effects arising from the development on both onsite and offsite flood risk, drainage and the water environment.
- Identifies the mitigation measures required to prevent, reduce, or offset the resulting potential impacts.
- Assesses the residual impacts following mitigation, and the potential cumulative impacts with other developments; and
- Highlights any necessary monitoring required.

10.3.6 The assessment comprises the following:

- Consultation with statutory bodies on existing hydrological conditions of the Site and surrounding areas.
- Detailed desk study and Site visits to establish the existing baseline conditions.
- Evaluation of the significance of effects by consideration of the Site, the potential magnitude of the impact (i.e. magnitude of change) and the probability of these effects occurring.

Effects not considered within the Scope.

- 10.3.7 This assessment covers the construction and operation of the Proposed Development and identifies those aspects of the proposals which have the potential to affect the existing baseline situation. It does not consider decommissioning/demolition since for such developments, some more localised redevelopment and rebuilding within the Site is likely beyond the 75-year life of this type of development. It does however, consider the decommissioning/demolition of any existing onsite structures such as the existing agricultural building.

Extent of the Study Area

- 10.3.8 The Site comprises two agricultural fields, hereafter referred to as the 'Northern Parcel' and 'Southern Parcel', and an area of grassland with an agricultural building. A Site description can be found in Chapter 3.
- 10.3.9 The wider study area includes Chichester and Langstone Harbours Ramsar & SPA (c. 750m east of the Site), Solent Maritime SAC (c. 860m south-east of the Site) and Solent and Dorset Coast SPA (c. 880m south of the Site). The study area includes the immediate receiving watercourse / drainage network from Hayling Island to the Solent.
- Consultation Undertaken to Date***
- 10.3.10 Table 10.1 provides a summary of the consultation activities undertaken in support of the preparation of this Chapter. Copies of relevant correspondence are provided in Appendix 10.2.

Table 10.1: Summary of Consultation Undertaken to Date			
Organisation	Individual(s)	Meeting Date and other forms of Consultation	Summary of Outcome of Discussion
Environment Agency	Aimee Etheridge – Partnership and Strategic Overview Team – Hampshire and Isle of Wight	Consultation Email: sent 18 th January 2024. Received Response: 24 th January 2024	Provided the Hayling Island 2018 – East Solent Model, including historic flooding and flood defences
Hampshire County Council	Tom Callaway – Senior Flood and Water	Consultation Email: sent 18 th January 2024. Received Response: 18 th January 2024	Correspondence in 2018 reported various historic records of flooding across Hayling Island but none

Table 10.1: Summary of Consultation Undertaken to Date			
Organisation	Individual(s)	Meeting Date and other forms of Consultation	Summary of Outcome of Discussion
	Management Project Officer		within the Site boundary. Tournerbury Farm Site of Importance for Nature Conservation (SINC) is an environmentally designated site (east of the Proposed Development). 2024 correspondence confirmed that there has been no additional flooding since.
Southern Water	Roopa Giriappa – Technical Delivery – Developer Services	Application Sent: 18 th January 2024. Response Received: 9 th February 2024	Asset Plans and Pre-Development Enquiry. Confirmed capacity within their systems.

Obtained Data

10.3.11 Flood risk and drainage infrastructure data was obtained from the organisations listed in Table 10.2.

Table 10.2: Environmental Data Sources		
Organisation	Data Source	Summary of Data or Discussion
Gov.UK	East Hampshire Management Catchment	Climate change allowances
Environment Agency (Hampshire and Isle of Wight)	Product 4 flooding data (January 2024)	- Flood map for planning - Risk of flooding from surface water map
Hampshire County Council	Preliminary Flood Risk Assessment (PFRA) – April 2011	PFRA flood mapping
	LLFA Correspondence (January 2024)	Pre-App response
Southern Water	Drainage & Water Enquiry (February 2024)	- Sewer Asset Plans - Sewer flooding history

Table 10.2: Environmental Data Sources		
Organisation	Data Source	Summary of Data or Discussion
Havant Borough Council	Strategic Flood Risk Assessment - February 2025	SFRA Mapping
Ordnance Survey	1:25,000 mapping	Explorer 197: Chichester & the South Downs (Bognor Regis & Arundel)).
Landmark's Promap	Flood Data package (January 2024)	- British Geological Survey (BGS) Groundwater Susceptibility - JBA Surface Water Flooding - Environment Agency Flood Zones - BGS Geological Indicators of Flooding - Environment Agency Complex Surface Water Flood Mapping
Geosmart	Groundwater flood mapping (January 2024)	1 in 100-year groundwater flood risk map
DEFRA	Magic Map – online mapping	Land based designations
BGS	Geology of Britain online map	Superficial and bedrock geology
Cranfield University	Soilscapes online mapping	Soils mapping
Gladman Developments Ltd	Survey Data	Detailed topographic survey (May 2016)

Assessment Methodology

10.3.12 The method of baseline data collection and assessment is in accordance with current guidance and industry best practice.

10.3.13 Baseline surveys have been undertaken, including a site walkover to confirm land use, topography, and existing drainage networks (including the presence of watercourses). In addition, desktop studies have been undertaken to establish sewer constraints, and statutory surface water and river flood mapping have been obtained.

Significance Criteria

10.3.14 Level of effect is a function of receptor sensitivity and magnitude of change (impact). The criteria for sensitivity, magnitude and effect are included in Appendix 10.3; Tables 1, 2, and 3, respectively.

- 10.3.15 The value or sensitivity of a receptor is largely determined by its quality, rarity, and the scale at which the attribute is deemed important. This can be at a local level (e.g. on the Proposed Development Site or immediately adjacent); district level (beyond the Application Site boundary but within the district); county level; regional/national level; or international level.
- 10.3.16 The sensitivity of the receptor depends on its capacity to accommodate the potential form of change and to recover if it is affected.
- 10.3.17 The magnitude of impact can range from Major to no change and can be adverse or beneficial.
- 10.3.18 Several potential impacts could have a direct or indirect effect on flood risk and water quality. These effects may be transitional but could also be more permanent.
- 10.3.19 Short to medium-term impacts are normally associated with the physical construction phase of a development, whereas long-term impacts are normally associated with a fully occupied and post-development scheme.
- 10.3.20 Effects that are deemed to be significant for the purposes of this assessment are those that are described as being of a large or very large beneficial or adverse level on the following factors:
- Geographical extent.
 - Rate of change.
 - Reversibility of the effect.
 - Probability of the effect.
 - Duration of the effect.
 - Size and magnitude of the effect.
 - Sensitivity/importance/substitutability of the receptor.
- 10.3.21 Any effect that is assessed as Large or Very Large Adverse or Beneficial is significant in terms of EIA regulations and so should be considered during the decision-making process.

10.3.22 The assessment concludes whether, following mitigation, the residual magnitude of the mitigated impacts of the operation and construction of the development will be major, moderate, minor, negligible adverse or beneficial, or whether there will be no change. A residual level of effect and significance is then determined. This assessment relies on professional judgement.

10.4 Baseline Conditions

10.4.1 The following describes the baseline conditions of the Site and surrounding area with regards to the Water Environment. In addition, it describes potential receptors.

10.4.2 The Proposed Development is bound by the following features. The Site consists of a 'Northern Parcel' and a 'Southern Parcel' bisected east to west by a watercourse. The Site is generally bound by grassed fields with residential developments beyond to the west, grassed fields with Hayling Island Holiday Park beyond to the north, and residential developments to the east and south (for further information please see Chapter 3).

10.4.3 Beyond these bounding features a number of sensitive receptors have been identified that may be directly and/or indirectly affected by the Proposed Development. These are included in the wider study area.

10.4.4 The factors that may affect the sensitive receptors are outlined below:

Topography

10.4.5 The northern parcel falls southwest and south. To the south it falls from 8.57 m AOD located along the northern central boundary to 7.84m AOD along the centre of the split between the two land parcels. The fall of 0.73m over 203m gives a gradient of 1:278.

10.4.6 To the southwest it falls from 8.57m AOD to 7.57m AOD along the centre of the western boundary. The fall of 1m over 234m gives a gradient of 1:234.

10.4.7 The southern parcel of the Site falls in a southeast direction from 7.77m AOD, along the central split of the two land parcels, to 6.51m AOD located in the southeast corner. The fall of 1.26m over 184m gives a gradient of 1:146.

Rainfall

- 10.4.8 HR Wallingford's 'Greenfield Runoff Rate Estimation Tool' indicates that the Standard Annual Average Rainfall (SAAR) for the Site is 686mm/year.

Soils and Geology

- 10.4.9 The Site is underlain by loamy soils with naturally high groundwater. There are superficial deposits of River Terrace Deposits – sand, silt and clay beneath the entire Site. The bedrock beneath the Site is London Clay Formation – clay, silt, sand.

Hydrogeology

- 10.4.10 SuDS infiltration Potential Mapping shows the Proposed Development is in the mapped extent of moderate potential for infiltration, likely due to the superficial deposits beneath the Site.
- 10.4.11 BGS online borehole records show groundwater was encountered in ten nearby boreholes (north, east and south of the Site, in the same mapped geology) between depths of 0.9m and 3m below ground level (bgl).
- 10.4.12 Soakaway testing encountered groundwater in two out of three trial pits, that were excavated across the Site, at depths of 2.56m and 2.7m bgl.
- 10.4.13 Shallow groundwater means disposal of surface water via infiltration would not be feasible.
- 10.4.14 The Proposed Development is not located above a groundwater Source Protection Zone (SPZ).
- 10.4.15 The Proposed Development is located above a Secondary A Aquifer (superficial drift).

Watercourses

- 10.4.16 OS mapping and a Site walkover identified four land drains within and bounding the Site. Drain 1 flows west bisecting the Site and possibly outfalling to a surface water sewer within Manor Road. Drain 2 flows north along the southwestern boundary and connects into Drain 1. Drain 3 flows south along the southeastern boundary of the Site

and outfalls to the surface water sewer within St. Mary's Road. Drain 4 is along the northeastern boundary and has no onward connectivity.

10.4.17 There is also a pond in the centre of the Site which Drain 1 flows into and out of.

10.4.18 The Environment Agency online river map identifies Mill Rithe conveying flows east approximately 350m north of the Site and Langstone Channel flows south approximately 1.1km west of the Site. Mill Rithe is a tributary of the Emsworth Channel.

Sewerage

10.4.19 Southern Water asset plans show a Ø525mm public foul sewer flowing northeast through the northwestern corner of the Proposed Development.

10.4.20 A separate surface water sewer and foul sewer network serves the residential dwellings to the east and south of the Site. A Ø225mm public foul sewer flows east within Rook Farm Way and a Ø225mm surface water sewer is located within St. Mary's Road. Drain 3 within the Site outfalls to the public surface water sewer in St. Mary's Road which then flows south and outfalls to the Solent. Drain 1 conveys flows west and likely outfalls into the public surface water sewer at an unknown point along Manor Road.

Designated Sites

10.4.21 The online DEFRA Magic Map (England and Wales) shows eight international statutory designations were identified within 10km of the Site. These were the Chichester and Langstone Harbours Ramsar & SPA (c. 750m east of the Site), Solent Maritime SAC (c. 860m south-east of the Site), Solent and Dorset Coast SPA (c. 880m south of the Site), Solent and Isle of Wight Lagoons SAC (c. 5.38km northwest of the Site), Portsmouth Harbour Ramsar & SPA (c. 8km northwest of the Site), and South Wight Maritime SAC (c. 8.89km southwest of the Site). The Solent and Southampton Water SPA/Ramsar are located over 10km from the Site but are also of relevance to this assessment, due to the connectivity of the coastal waters. Given the legislative frameworks underpinning international designations, these are considered to be important at the international level. Three national statutory designations were identified within 3km of the Site. These were the Sinah Common SSSI (c. 710m south of the Site), Chichester

Harbour SSSI (c. 750m east of the Site), and Langstone Harbour SSSI (c. 800m west of the Site).

10.4.22 Consultation with Hampshire County Council confirmed that the Site lies west of a Site of Importance for Nature Conservation (SINC) named as Tournurbury Farm (c. 395m northeast of the Site). However, it is not hydrologically connected to the Proposed Development and is therefore not at risk and will not be carried forward in this assessment.

Flood Risk

10.4.23 The flood risk to the Site and surrounding area is summarised below and is included in Appendix 10.4 (Flood Risk Assessment).

10.4.24 The risk of fluvial flooding is assessed as negligible, but there is however a residual risk of flooding from the onsite and bounding land drains.

10.4.25 The risk of tidal flooding is assessed as negligible for the Proposed Development.

10.4.26 The risk of groundwater flooding is assessed as negligible above ground but low below ground due to perched groundwater within the superficial River Terrace deposits.

10.4.27 The risk of surface water flooding is assessed as negligible for most of the Site, with areas of low risk associated with surface water ponding within the Site.

10.4.28 The risk of sewer flooding is assessed as negligible for most of the Site and low along the reaches of the identified assets.

10.4.29 The risk of flooding from pond failure is assessed as low.

10.4.30 As identified in the FRA, there is also a low risk of tidal flooding associated with the access/egress points to the A3023 Langstone Bridge. In the event that a flood event led to the temporary closure of the bridge, Hayling Island and the Site would both provide safe places of refuge, and there would be no risk to life. Full details of flood risk and mitigation can be found within the FRA.

Study Catchment

- 10.4.31 Drainage for the Proposed Development is split north and south via Drain 1 across the centre of the Site. The northern parcel conveys flows south and west into Drain 1 which outfalls to a surface water sewer within Manor Road. The southern parcel flows southeast into Drain 3 which outfalls to a surface water sewer within St. Mary's Road. Both parcels drain primarily via overland flow, following the topography of the Proposed Development Area to the topographic low points, with a small amount of infiltration to bedrock and throughflow to watercourse. Both surface water sewers from Manor Road and St. Mary's Road flow south and outfall to The Solent.
- 10.4.32 The Site resides within the East Hampshire Rivers Operational Catchment, East Hampshire Management Catchment and South East River Basin District.
- 10.4.33 The Site naturally drains (via a surface water sewer) to the Solent Water Body, which has a catchment area of 259.9km². The 11.77ha (0.1177km²) Site area accounts for 0.045% of the receiving catchment area.
- 10.4.34 Good ecological status of a water body will be achieved when a series of criteria, including good chemical status, is achieved. The achievement of good chemical status is dependent on meeting agreed Environmental Quality Standards (EQS), including EQS for Priority Substances defined by the Water Framework Directive (WFD).
- 10.4.35 The Environment Agency classifies rivers in accordance with the WFD ecological status classification scheme under the South East River Basin Management Plan (RBMP).
- 10.4.36 The WFD status of the Solent Water Body is shown in Table 10.3 below.

Table 10.3: EU WFD status (2015, 2019 & 2022)				
EU Water Framework Directive Status (2015)		EU Water Framework Directive Status (2019)	EU Water Framework Directive Status (2022)	Objectives
Solent				
Parameter	WFD Status	WFD Status	WFD Status	Status (2023)
Ecological	Moderate	Moderate	Moderate	n/a
Chemical	Fail	Fail	n/a	Good by 2063

Water Quality Sampling

10.4.37 The catchment data explorer on the Environment Agency website lists/identifies the nearest Environment Agency water sampling point to the Site/The Solent is 'Ryde-Shellfish Water (downstream of the Site (X:463090 Y:94470) but with hydraulic connectivity).

10.4.38 The data was collated (period 2003 - 2024) from the above sampling point, and the mean values for the main parameters are summarised below:

• Ammonia (mgN/l)	-	0.0197
• Dissolved Oxygen (% saturation)	-	98.04
• Nitrates (mg/l)	-	0.147
• Phosphates (mg/l)	-	0.0134
• Nitrites (mg/l)	-	0.0081

Sensitive Receptors

10.4.39 The value or sensitivity of a receptor is largely determined by its quality, rarity, and the scale at which the attribute is deemed important. This can be at a local level (e.g. on the Site or immediately adjacent); district level (beyond the Application Site boundary but within the district); county level; regional/national level; or international level.

10.4.40 Having regard to the assessment methodology described in this chapter above, the sensitivity of the receiving water environment is defined in Appendix 10.3 and is based on guidance provided in Table A4.3 (Volume 11, Section 3, Part 10, Annex IV) of the Design Manual for Roads and Bridges (DMRB) (Highways Agency, 2009¹) and on the authors professional judgement.

10.4.41 The identified receiving receptors are outlined below and included in Table 10.4:

Chichester Harbour (Ramsar, SPA, SSSI)

10.4.42 This designated Site is not hydrologically connected to the Proposed Development and is therefore not at risk and will not be carried forward in this assessment.

¹ Design Manual for Roads and Bridges: Geotechnics and Drainage, Highways Agency, November 2009

Langstone Harbour (Ramsar, SPA, SSSI)

- 10.4.43 This designated Site is not hydrologically connected to the Proposed Development and is therefore not at risk and will not be carried forward in this assessment.

Sinah Common (SSSI) (Secondary)

- 10.4.44 The Proposed Development may potentially have an impact on Sinah Common SSSI within the Solent. The onsite land drain discharges into the surface water sewer which conveys flows south and outfalls into Sinah Common SSSI.

- 10.4.45 When assessed against sensitivity criteria in Table 1 (Appendix 10.3), Sinah Common is of Very High sensitivity as it is a Site of Special Scientific Interest (SSSI) and indirectly hydrologically connected to the proposed development.

- 10.4.46 When considering abstractions in the vicinity of the Site, the public surface water sewer (the Site's outfall) will be discharging into the Solent at an unrestricted rate, therefore any groundwater abstractions would have a negligible impact and can be scoped out.

Solent Maritime (SAC) & Solent and Dorset SPA (Secondary)

- 10.4.47 As mentioned above, the surface water sewer discharges to the Solent, therefore it is considered a secondary receptor. It is indirectly hydrologically connected to the Site.

- 10.4.48 When assessed against sensitivity criteria in Table 1 (Appendix 10.3) the Solent is of Very High sensitivity as it:

- Has a WFD current overall status of moderate;
- Is a designated Special Area of Conservation; and
- It is a watercourse widely used for recreation, potentially affected by water quality (e.g., swimming) within 2km downstream.

Public Surface Water Sewers (Primary)

- 10.4.49 Runoff from the developed Site will discharge to onsite land drains which in turn discharge to the public surface water sewer i.e. the primary receptor. The surface water sewer is of low sensitivity as it is heavily engineered or artificially modified.

Aquifer/Groundwater (Water Quality and Flood Risk)

10.4.50 There will likely be a small amount of infiltration into the ground post development. The aquifer is not a principal aquifer and therefore is of low sensitivity.

Table 10.4: Identified Development Receptors	
Receptors	Receptor Sensitivity
Sinah Common SSSI	Very High
Solent Maritime SAC and Solent and Dorset SPA (Water Quality, Hydrology [Flood Risk], Hydrogeomorphology)	Very High
Chichester & Langstone Harbour (SSSI, RAMSAR, SPA)	Very High
Surface Water Sewer	Low
Aquifer/Groundwater (Water Quality and Flood Risk)	Low
Surface Water (Water Quality and Flood Risk)	Low

Future Baseline

10.4.51 This future baseline accounts for how the baseline conditions could change if the Proposed Development did not come forward.

10.4.52 If the Proposed Development did not go ahead, conditions of the unnamed watercourses could improve. Conditions of the water bodies within the Site and to which the Site immediately drains are not recorded as part of the WFD, however their water quality is dependent on surrounding land use and agricultural practices (assuming the Site remains largely agricultural). It is reasonable to assume that water quality would improve as proxy for the wider WFD goals however if water quality was improved it would still need to be maintained.

10.4.53 There could be a change in baseline in terms of climate change and the increased prevalence of extreme rainfall events and associated flooding. Future climate change impacts are envisaged to result in increased rainfall intensity, which would result in increased surface water runoff within the Site and surrounding area. This may impact the capacity of the receiving surface water drainage system. Runoff would continue to be uncontrolled across all return periods, rather than being released at a controlled rate with the development in place.

Limitations

10.4.54 It is assumed that third party reports and data consulted for the application are factually correct, unless otherwise identified and corrected in the ES. Otherwise, there are no identified limitations.

10.5 Assessment of Effects

Design Solutions and Assumptions

10.5.1 The assessment scenarios listed in Table 10.5 below are based on the development details provided in Chapter 4 'Proposed Development' and are those considered likely to result in significant effects on the identified receptor. The effects described are worst-case and, as such effects of higher (adverse or beneficial) level are unlikely to arise.

10.5.2 Developing the Site using industry best practice, including a Construction Environment Management Plan (CEMP) or equivalent represents embedded risk mitigation. The CEMP will integrate the core arrangements for health and safety, quality, and environmental management for the construction phase. This integrated approach ensures that environmental aspects are considered at all stages of the design and construction process.

10.5.3 Mitigation measures are designed in to reduce the potential for impacts on Flood Risk, Hydrology, and Water Quality. These measures are considered standard industry practice for this type of development and are listed below and will reduce risk to low or negligible.

Flood Risk

Avoidance Measures

- Set the surface water outfall from the proposed development at an appropriate height, i.e. above the bed-level of the receiving land drain.
- Set building floor levels +150mm above external levels.
- Limit the number of highway crossings along the route of the land drain. Culvert crossings would need to be sized to convey the 1 in 100-year plus climate change event, with a freeboard allowance.
- No below surface habitable buildings (i.e. basements).
- Lined attenuation to prevent groundwater ingress

- Provide a 4m easement free from development along either side of the onsite and bounding land drains. This easement would provide access for inspection and maintenance purposes, including vehicle access.
- Provide a development free easement (3m either side) of onsite Southern Water public sewer assets, or re-direct through the Site boundary.
- Provide a development free easement around the onsite pond.

Control Measures

- Adoption of a surface water management strategy.
- Undertake maintenance activities to keep the land drains clear from debris and overgrown vegetation to maintain the conveyance of the channels.

Managing Residual Risk

- Following the application of the above measures, no measures to manage residual risk are required.

A3023 Langstone Bridge

- The areas north and south of the Hayling Bridge are covered by flood warnings, which have long lead up times (up to days in advance), which enable temporary bridge closure.
- Tidal flooding events are often short-lived (a matter of hours for spring tides and for storm surges), so any bridge closure would only be a short-lived event.
- The Hayling Emergency Planning Framework provides details of an emergency plan in the scenario where a flood event preventing access on and off the Island were to unfold (<https://www.havant.gov.uk/emergency-advice/emergency-advice-overview>) this includes various other means of accessing the island in the event of a bridge closure.
- The Island and Site provide a safe place of refuge and as such no access/egress to the island would not pose a risk to life.

Drainage (Operation Phase)

- 10.5.4 Surface water runoff from the Proposed Development would be attenuated on-site up to and including the 1 in 100-year event, plus 45% climate change.

10.5.5 A SuDS drainage scheme is proposed to manage excess runoff from the development, comprising detention basins designed to maintain runoff at pre-development rates with a pumped connection to watercourse.

10.5.6 It is proposed that foul flows are discharged to the public foul sewer approximately 180m east of Manor Road.

Drainage (Construction Phase)

10.5.7 To control environmental issues during the construction process, a Construction Environmental Management Plan (CEMP) will be developed (see paragraph 10.5.2). This will manage surface water and foul drainage during the construction process, thereby mitigating the potential for impacts on hydrology, flood risk, and water quality. Principles to include in the CEMP would be:

- Good environmental practice based on legal responsibilities and guidance in accordance with the general overarching guidance on good environmental management in PPG1 (Environment Agency, 2013) and more specific guidance including:
 - CIRIA C650 (2005) Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors.
 - CIRIA C648 (2006) Control of Water Pollution from Linear Construction Projects;
 - and PPG21.
- Minimise where practicable production of silt and contaminated water by for example:
 - Dewatering and pumping of excavations and subsequent disposal of water;
 - Minimising runoff from exposed ground and stockpiles;
 - Utilising plant and wheel washing;
 - Site roads; Accounting for fuel spillages; and waste storage and disposal. Mitigation in accordance with PPG5 guidance and maintenance in or near water (Environment Agency, 2014) and CIRIA C650 and as set out in the project Code of Construction Practice (CoCP).
- The maintenance and management of the Site during the construction phase will be essential in preventing surface water flooding of the Site. It is also key in

ensuring the prevention of sediment and pollutants entering nearby watercourses.

- The construction phase will be undertaken in accordance with the following good practice guidelines:
 - CIRIA Environmental Good Practice on Site (C502) (1999).
 - CIRIA Control of Water Pollution from Construction Sites (C532) (2001).
 - Environment Agency Pollution Prevention Guidelines.

Assessment of Effect

- 10.5.8 This section outlines the parameters on hydrology, surface water drainage and surface and groundwater that have been assessed; and summarises the likely effects of the Proposed Development during the demolition/construction and operational phases. Receptor sensitivity, magnitude of impact and significance of (with embedded mitigation in place but excluding secondary/additional mitigation) effect, as shown in Table 10.5, were assessed using the methodology in Appendix 10.3.
- 10.5.9 Changes in sediment / chemical / pollutant run off from the Proposed Development following embedded mitigation would be negligible. Any changes would be limited to a 'local' scale and therefore not considered in the table below.

Table 10.5: Water Environment and Quality Assessment Scenarios

Potential Impacts	Description of Potential Impacts	Receptor	Receptor Sensitivity	Magnitude of Impact	Level of Effect	Significance of Effect (including embedded mitigation)
Demolition and Construction Phase						
The impacts of construction – including demolition of the existing agricultural building may affect surface water quality and the WFD status of surface waters may be affected.	Ground disturbance and or demolition materials may indirectly affect surface waters by sediment in any runoff entering a drain or watercourse. Incidents because of spillage of pollutants to the ground surface. Release of chemicals and fuels stored on Site. Incidents that result in the loss of pollutants to surface water from vehicles transporting construction materials or products or waste materials to and from the Site.	Surface Water Sewer - Direct	Low	Minor - adverse	Neutral / Direct / Short / Temporary	not significant
		Solent Maritime SAC & Solent and Dorset SPA- Indirect	Very High	Minor – adverse	Moderate / Indirect / Short Temporary	not significant
		Sinah Common SSSI - Indirect	Very High	Minor – adverse	Moderate / Indirect / Short / Temporary	not significant
		Superficial Aquifer/ground water	Low	Minor - adverse	Neutral / Direct / Short / Temporary	not significant

Table 10.5: Water Environment and Quality Assessment Scenarios

Potential Impacts	Description of Potential Impacts	Receptor	Receptor Sensitivity	Magnitude of Impact	Level of Effect	Significance of Effect (including embedded mitigation)
		Surface Water (Water Quality and Flood Risk)	Low	Moderate - adverse	Slight / Direct / Short / Temporary	not significant
Impacts of construction may affect erosion and sedimentation.	The removal or creation of new flow paths could alter in-channel velocities with resultant scour and deposition. Increased overland surface water velocity could scour riverbanks at discharge points leading to bank instability, increased sedimentation, scour and deposition.	Surface Water Sewer - Direct	Low	Negligible - adverse	Neutral / Direct / Short / Temporary	not significant
		Solent Maritime SAC & Solent and Dorset SPA- Indirect	Very High	Negligible - adverse	Slight / Indirect / Short / Temporary	not significant
		Sinah Common SSSI - Indirect	Very High	Negligible - adverse	Slight / Indirect / Short / Temporary	not significant

Table 10.5: Water Environment and Quality Assessment Scenarios

Potential Impacts	Description of Potential Impacts	Receptor	Receptor Sensitivity	Magnitude of Impact	Level of Effect	Significance of Effect (including embedded mitigation)
		Superficial Aquifer/ground water	Low	Negligible - adverse	Neutral / Direct / Short / Temporary	not significant
		Surface Water (Water Quality and Flood Risk)	Low	Negligible - adverse	Neutral / Direct / Short / Temporary	not significant
Impacts of construction may affect flooding and results in impediments to flow.	The creation of temporary structures and construction of permanent structures introduces impermeable areas and increases run off volumes. Permeability may also be decreased due to soil compaction. Regrading of the ground/topography could remove/introduce flow paths and direct flood water to areas previously not at risk of flooding.	Surface Water Sewer - Direct	Low	Minor - adverse	Slight / Direct / Short / Temporary	not significant
		Solent Maritime SAC & Solent and Dorset SPA- Indirect	Very High	Negligible - adverse	Slight / Indirect / Short / Temporary	not significant
		Sinah Common SSSI – Indirect	Very High	Negligible - adverse	Slight / Indirect / Short / Temporary	not significant

Table 10.5: Water Environment and Quality Assessment Scenarios

Potential Impacts	Description of Potential Impacts	Receptor	Receptor Sensitivity	Magnitude of Impact	Level of Effect	Significance of Effect (including embedded mitigation)
		Superficial Aquifer/ground water	Low	Negligible - adverse	Neutral / Direct / Short / Temporary	not significant
		Surface Water (Water Quality and Flood Risk)	Low	Minor - adverse	Slight / Direct / Short / Temporary	not significant
Impacts of construction may affect pollution risk.	Ground disturbance may erode and indirectly affect surface waters through sediment mobilisation and increased sediment concentration in any runoff entering a drain or watercourse. Sediment mobilisation will be more prevalent during periods of heavy rain and during dry periods where windblown sediment could enter watercourses. Incidents through spillage of pollutants to the ground surface.	Surface Water Sewer – Direct	Low	Minor - adverse	Neutral / Direct / Short / Temporary	not significant
		Solent Maritime SAC & Solent and Dorset SPA- Indirect	Very High	Minor - adverse	Moderate / Indirect / Short / Temporary	not significant

Table 10.5: Water Environment and Quality Assessment Scenarios

Potential Impacts	Description of Potential Impacts	Receptor	Receptor Sensitivity	Magnitude of Impact	Level of Effect	Significance of Effect (including embedded mitigation)
	Loss of chemicals and fuels stored on Site. Incidents that result in the loss of pollutants to surface water / groundwater from vehicles transporting construction materials or products or waste materials to and from the Site. Regrading of the ground profile/ topography could remove/introduce pollutant pathways to watercourse or groundwater. Release of contaminants into groundwater, surface water and watercourses.	Sinah Common SSSI - Indirect	Very High	Minor - adverse	Moderate / Indirect / Short / Temporary	not significant
		Superficial Aquifer/Ground water	Low	Minor - adverse	Slight / Direct / Short / Temporary	not significant
		Surface Water (Water Quality and Flood Risk)	Low	Minor - adverse	Slight / Direct / Short / Temporary	not significant
Operation Phase						
Impacts of the Proposed Development	Low permeability areas such as roads, car parks and roof structures reduce the ability of the Site to accept rainfall volumes.	Surface Water Sewer - Direct	Low	Minor - adverse		not significant

Table 10.5: Water Environment and Quality Assessment Scenarios

Potential Impacts	Description of Potential Impacts	Receptor	Receptor Sensitivity	Magnitude of Impact	Level of Effect	Significance of Effect (including embedded mitigation)
may affect natural drainage patterns/ Impacts of the Proposed Development may affect watercourse flood risk.	Hard surfaces and site drainage such as guttering, and highway drainage increase the Site sensitivity to rainfall and reduce response time to rainwater reaching the receptor. The Site layout removes/introduces flow paths and directs floodwater to areas not previously at risk of flooding.				Slight/ Direct / Medium / Permanent	
		Solent Maritime SAC & Solent and Dorset SPA- Indirect	Very High	Negligible - adverse	Slight / Indirect / Medium / Permanent	not significant
		Sinah Common SSSI - Indirect	Very High	Negligible - adverse	Slight / Indirect / Medium / Permanent	not significant
		Superficial Aquifer/Ground water	Low	Minor - adverse	Neutral / Direct / Medium / Permanent	not significant

Table 10.5: Water Environment and Quality Assessment Scenarios

Potential Impacts	Description of Potential Impacts	Receptor	Receptor Sensitivity	Magnitude of Impact	Level of Effect	Significance of Effect (including embedded mitigation)
		Surface Water (Water Quality and Flood Risk)	Low	Minor - adverse	Slight / Direct / Medium / Permanent	not significant
Impacts of the Proposed Development may affect surface water quality.	Incidents because of spillage of pollutants to the ground surface. Loss of chemicals and fuels stored in the development. Incidents that result in the loss of pollutants to surface water from vehicles, in the form of oil/fuel and household chemicals such as detergents. Removal of agricultural practices from the Site may affect surface waters by reducing sediment runoff entering a drain or watercourse thereby affecting surface water quality. Removal of agricultural practices may affect surface waters by reducing nitrate or agrichemical runoff and so contribute to the objectives of the Nitrate Directive. The development will emit nitrogen (foul water and surface-water runoff) but this is offset by the reduction in fertiliser applications.	Surface Water Sewer - Direct	Low	Minor - adverse / beneficial	Slight / Direct / Short / Permanent	not significant
		Solent Maritime SAC & Solent and Dorset SPA- Indirect	Very High	Minor- adverse / beneficial	Moderate / Indirect / Short / Permanent	not significant

Table 10.5: Water Environment and Quality Assessment Scenarios

Potential Impacts	Description of Potential Impacts	Receptor	Receptor Sensitivity	Magnitude of Impact	Level of Effect	Significance of Effect (including embedded mitigation)
		Sinah Common SSSI - Indirect	Very High	Minor- adverse / beneficial	Moderate / Indirect / Short / Permanent	not significant
		Superficial Aquifer/Ground water	Low	Minor- adverse / beneficial	Neutral / Direct / Short / Permanent	not significant
		Surface Water (Water Quality and Flood Risk)	Low	Minor- adverse / beneficial	Neutral / Direct / Short / Permanent	not significant
		Chichester & Langstone Harbour (SSSI, RAMSAR, SPA)	Very High	Minor- adverse / beneficial	Moderate / Indirect / Short / Permanent	not significant
Impacts of the development	Incidents because of spillage of pollutants to the ground surface.	Surface Water Sewer - Direct	Low	Minor - adverse	Neutral / Direct / Short / Permanent	not significant

Table 10.5: Water Environment and Quality Assessment Scenarios

Potential Impacts	Description of Potential Impacts	Receptor	Receptor Sensitivity	Magnitude of Impact	Level of Effect	Significance of Effect (including embedded mitigation)
may affect pollution risk.	Loss of chemicals and fuels stored in the development. Incidents that result in the loss of pollutants from vehicles, in the form of oil/fuel and household chemicals such as detergents.	Solent Maritime SAC & Solent and Dorset SPA- Indirect	Very High	Minor - adverse	Moderate / Indirect / Short / Permanent	not significant
		Sinah Common SSSI - Indirect	Very High	Minor - adverse	Moderate / Indirect / Short / Permanent	not significant
		Superficial Aquifer/Ground water	Low	Minor - adverse	Neutral / Direct / Short / Permanent	not significant
		Surface Water (Water Quality and Flood Risk)	Low	Minor - adverse	Neutral / Direct / Short / Permanent	not significant

10.6 Mitigation

- 10.6.1 Table 10.5 assessed all effects as not significant with embedded mitigation in place, therefore, no additional measures would be required.

10.7 Residual Effects

- 10.7.1 Residual effects remain as set out within Table 10.5. There will be no significant residual effects.

10.8 Assessment of Cumulative Effects

Intra-cumulative effects

- 10.8.1 The application of embedded mitigation measures ensures that likely significant effects on shared receptors are unlikely. No significant residual effects have been identified upon shared receptors (Solent Maritime SAC and Sinah Common SSSI) across the ES therefore, there will be no significant intra-cumulative effects.

Inter-cumulative effects

- 10.8.2 The developments which have been considered in the cumulative assessment are set out in Chapter 2.
- 10.8.3 All the developments do or will comply with DEFRA non-statutory SuDS guidance, PPG:7 and CIRIA C753 (Appendix 10.5) guidance on flooding, surface water discharge rates, volume control and water quality control to minimise individual impacts on the aquatic environment.
- 10.8.4 The Proposed Development incorporates its own drainage strategy and flood risk abatement techniques, and it can be expected that the development will be constructed in-line with the requirements of the supporting / accompanying guidance (e.g. PPG etc.), requiring that new developments attenuate surface water run-off to pre-development run-off rates. It is, therefore, expected there will not be any cumulative impacts as any new developments would also need to meet national policy and attenuate surface water run-off to pre-development run-off rates and minimise impacts from the developments.

10.9 Summary

- 10.9.1 The impacts on hydrology and flood risk for the Proposed Development have been assessed in line with the NPPF, UKCP09 and all other relevant legislation, guidance, planning policy and technical documentation.
- 10.9.2 The assessment has shown that there are no significant effects arising from the Proposed Development following the implementation of the proposed embedded mitigation measures.

11 RIGHTS OF WAY, ACCESS & RECREATION

11.1 Introduction

11.1.1 This Chapter has been prepared by FPCR Environment and Design Ltd (FPCR). The purpose of this Chapter is to provide an assessment of the likely significant effects of the Proposed Development on Rights of Way, Access and Recreation in and around the Site, for example, access to and enjoyment of the countryside and effects on local amenities. This Chapter sets out the baseline conditions, assesses the likely significant effects and outlines the mitigation measures to be incorporated as part of the Proposed Development. This assessment has formed an integral part of the Site's overall layout and design.

11.1.2 Rights of Way, Access and Recreation have been considered in relation to the proposals detailed in the Design and Access Statement (DAS) along with the following planning application drawings:

- Site Location Plan (Appendix 1.1)
- Parameters Plan (Appendix 1.2).

11.1.3 This Chapter (and its associated figures) is not intended to be read as a standalone assessment and reference should be made to the front end of this ES (Chapters 1 – 5), as well as the final chapter, 'Summary of Residual and Cumulative Effects' (Chapter 13).

11.2 Legislation, Planning and Guidance

11.2.1 The relevant legislation, policy and guidance are listed below:

Legislative Framework

11.2.2 There is no Legislative Framework relevant to Rights of Way, Access and Recreation matters.

Planning Policy

11.2.3 The applicable planning policy is summarised as follows:

National Planning Policy Framework (NPPF, December 2024)

11.2.4 The NPPF sets out the Government's economic, environmental and social planning policy and in combination these policies give the Government's vision of sustainable

development. The NPPF emphasises the need for well-designed places, promoting healthy and safe communities and conserving and enhancing the natural environment.

11.2.5 Regarding rights of way, access and recreation the Promoting Healthy and Safe Communities section of the NPPF provides planning policies to achieve healthy, inclusive and safe places. The key objectives include: promoting social interaction, supporting healthy lifestyles and creating safe and accessible places. This can be achieved through the provision of safe and accessible green infrastructure, sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling.

11.2.6 Paragraph 103 states: *'Access to a network of high-quality open spaces and opportunities for sport and physical activity is important for the health and well-being of communities and can deliver wider benefits for nature and support efforts to address climate change. Planning policies should be based on robust and up-to-date assessments of the need for open space, sport and recreation facilities (including quantitative or qualitative deficits or surpluses) and opportunities for new provision. Information gained from the assessments should be used to determine what open space, sport and recreational provision is needed, which plans should then seek to accommodate'.*

11.2.7 Paragraph 105 goes on to state: *'Planning policies and decisions should protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users, for example by adding links to existing rights of way networks including National Trails'.*

Havant Borough Core Strategy (2011)

11.2.8 The following policies within the Havant Borough Core Strategy provide guidance for development within the Borough. The policies will eventually be replaced when the Council's emerging Local Plan is adopted. The following policies apply to the Site, which are relevant to rights of way, access and recreation:

POLICY CS1: HEALTH & WELLBEING

11.2.9 The policy states that planning permission will be granted for development which:

1. *“Retains open spaces that are valued by the local community but if retention is not possible, a superior alternative should be provided. In particular it is important to safeguard the following strategic open spaces:
b. Havant Park
c. Hayling Park
d. Hayling Beach”*
2. *Improves existing open spaces by incorporating high quality features, accessibility and appearance and where appropriate achieves a national standard e.g. a Green Flag Award.*
3. *Creates, where necessary, new open spaces that are located within or close to housing developments, that is safe and accessible for children to play and contributes to the borough’s green infrastructure...*
7. *Contributes effectively to the opportunities for increasing cycling for all types of trips, creating and improving linkages within the borough, particularly along the stream corridors and along the coast between Emsworth, Havant and the borough boundary near Broadmarsh in accordance with the council’s Walking and Cycling Strategy.*
8. *Supports the increased footpath and cycle use through the design of development, linkage and signage...*
10. *Protects and contributes to the availability of community facilities through refurbishment or new provision which can be justified by needs which are evident in the local district.*
11. *Contributes towards the doubling of existing allotment spaces by working with the council to retain provision and include proposals for new plots and/or community gardens in housing developments where appropriate throughout the borough but especially in Hayling Island and north of Waterlooville.”*

POLICY CS5: TOURISM

11.2.10 This policy states that the Council will grant planning permission to proposals that:

1. *“Provide sustainable and small-scale recreational opportunities.”*

POLICY CS8: COMMUNITY SAFETY

11.2.11 This policy states that the Council will grant planning permission to proposals that:

“Provide well-lit footpaths, cycle ways and roads providing that this does not adversely affect designated habitats or the landscape.”

Havant Borough Council Emerging Local Plan ‘Building a Better Future Plan’

11.2.12 The Council are working on a new Local Plan to replace the Core Strategy (2011) – this will be known as the ‘Building a Better Future Plan’.

11.2.13 The new plan will be informed by The Havant Local Cycling and Walking Infrastructure Plan (LCWIP) (2023) that reflects a marked shift towards sustainable travel, in line with Hampshire County Council’s Climate Change Strategy. Havant Borough Council’s Climate Change and Environment Strategy (2021-2026) aims to prioritise active travel and insists on best practice for infrastructure design and paths.

11.2.14 The new plan’s approach to Green Infrastructure (GI) will be informed by, among other documents, Havant Borough’s Open Space Strategy (Nov 2018).

Guidance

11.2.15 The applicable guidance is summarised as follows:

Planning Practice Guidance (PPG)

11.2.16 The PPG was first published on the 6th of March 2014 and is a regularly updated online planning resource which provides guidance on the NPPF and the planning system. Specific guidance relevant to this Chapter is given under the heading of *Open space, sports and recreation facilities, public rights of way and local green space*. However, this guidance is more relevant to Local Authorities to enable them to write Local Plans and to record Public Rights of Ways (PROW).

Other Relevant Strategies, Guidelines or Documents

Havant Borough Council Design Guide - Supplementary Planning Document

11.2.17 The Havant Borough Council Design Guide was adopted on the 14th of December 2011 as a technical guide for development proposals. It seeks to set out the key principles of good design and provides specific guidance for residential development in seeking to ensure high quality development in the Borough of Havant. It is a consideration in determining planning applications.

11.2.18 Guidance from the above document that is considered potentially relevant to the landscape and green infrastructure of the Site is summarised below:

PUBLIC AMENITY: OPEN SPACE & PLAY

Paragraph 5.11

'New development should address parks and open spaces. These spaces should be integrated into the design of new places and can become focal points for new residential led schemes.'

Havant Borough Council Developer Contributions Guide (Nov 2013, updated April 2025)

11.2.19 This document provides information following on from the Core Strategy on expectations for the use of developer contributions in Havant Borough.

11.2.20 Guidance from the above document that is considered potentially relevant to the landscape and green infrastructure of the Site is summarised below:

GREEN INFRASTRUCTURE & PUBLIC OPEN SPACE

Paragraph 5.16

11.2.21 This details that where there is a deficiency in a type of open space for a proposed development which is deemed to be suitable, then on-site provision will be sought. The document also states that where a proposal requires off-site planting, a S106 agreement should be entered into.

Local Green Spaces and Destination Open Spaces in Havant Borough (2020)

11.2.22 This evidence base document was prepared to the support the now-withdrawn Havant Borough Local Plan 2036. A number of designated green spaces were

identified on Hayling Island, although none within the Site or immediate context. These included: Hayling Beach, Hayling Billy Trail and Hayling Park.

Havant Borough Open Space Strategy (Nov 2018)

11.2.23 This strategy sets out the qualitative and quantitative requirements of open space within the Borough and forms part of the evidence base for the emerging Local Plan. It covers different types of formal and informal greenspace and sets out how much should be provided depending on the scale of the development.

Havant Local Cycling and Walking Infrastructure Plan (LCWIP) (2023)

11.2.24 This document plans to prioritise sustainable transport measures, with a focus on active travel. It aims to introduce infrastructure that will support health and well-being, improve accessibility for all, and see related benefits such as a reduction of air pollution and fewer delays and traffic incidents on the roads.

11.2.25 A newly proposed Secondary cycle route '262' has been planned to run along footpath 108/89/1 that passes north-west of the Site through the adjacent Hayling Island Holiday Park, connecting Church Road with Manor Road (see Figure 11.1). The Havant Borough Council Aspirational Cycle Map 2036 is included within the LCWIP and features plans to introduce a Cycle Network Link (signposted) within the Site boundary, connecting across the Site in the northeast corner, linking footpath 108/93/1 to Church Road.

Hampshire Walking & Cycling Strategy

11.2.26 At a county level, respective walking and cycling strategies were produced to complement the wider policies within the Hampshire Local Transport Plan (Feb 2024), and to help support and promote walking and cycling within the county in the short, medium and long term.

11.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

11.3.1 This chapter describes the existing rights of way, access and recreational use of the Site and surrounding area, and the likely effects of the construction/demolition and operation of the Proposed Development and associated infrastructure on these activities, assets and broader access rights. It will look in detail at the Site's potential

for access and recreation and where there are possible links to rights of way, other green networks and where appropriate, urban fringe areas, to help promote the creation of wider green infrastructure.

- 11.3.2 The following assessment seeks to address a series of aims set out in Natural England's (NE) scoping response, which sets out the detailed requirements for the content of the ES chapters/screened in topics listed in the Havant Borough Council Scoping Opinion. At the time of writing Natural England have not responded to the 2021 Scoping Report. HBC have instead quoted from NE's previous 2017 response to scoping, which stated:

"The EIA should consider potential impacts on public open land and rights of way in the vicinity of the development. Appropriate mitigation measures should be incorporated for any adverse impacts. We also recommend reference to the relevant Right of Way Improvement Plans (ROWIP) to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced."

Natural England encourages any proposal to incorporate measures to help encourage people to access the countryside for quiet enjoyment. Measures such as reinstating existing footpaths together with the creation of new footpaths and bridleways are to be encouraged. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Relevant aspects of local authority green infrastructure strategies should be incorporated where appropriate."

Definition of Rights of Way

- 11.3.3 For the purpose of this report, rights of way will include any routes indicated on the definitive rights of way interactive map on the Hampshire County Council website which give members of the public the right to pass over land. This will include public footpaths, bridleways, national trails and byways.
- 11.3.4 Figure 11.1 shows the Public Rights of Way and recreational opportunities within 3km of the Site.

Definition of Access

- 11.3.5 For the purpose of this report, access will include footpaths, cycleways and common land that form part of the existing Site context and those proposed as part of the development. The broad aims for the site access will adhere to Natural England's scoping response, as detailed above, which states, '*Natural England encourages any proposal to incorporate measures to help encourage people to access the countryside for quiet enjoyment. Measures such as reinstating existing footpaths together with the creation of new footpaths and bridleways are to be encouraged.*'

Definition of Recreation

- 11.3.6 For the purpose of this report, outdoor recreation can be broadly defined to include both formal recreation and informal recreation. Formal recreation includes provision of sports facilities, such as football pitches, artificial turf pitches, sports pavilions and allotments and also Local Equipped Area for Play (LEAP) and Neighbourhood Equipped Area for Play (NEAP) for children. Informal recreation has a broader meaning and can include open space for games and play as well as informal footpaths and cycleways.

Effects Not Considered with the Scope

- 11.3.7 Although this chapter covers access, it will not discuss transport or road access as this is covered in the Transport chapter (Chapter 8).
- 11.3.8 This Chapter does not consider effects on the visibility from Public Rights of Way towards the Site but instead looks at the potential higher demand of use. Visual effects are covered in the accompanying Landscape & Visual Appraisal.

Extent of the Study Area

- 11.3.9 The Study Area includes publicly accessible open space, formal and informal sports facilities and Public Rights of Way within 3km of the Site, as shown on Figure 11.1.

Consultation Undertaken to Date

- 11.3.10 Table 11.1 provides a summary of the consultation activities undertaken in support of the preparation of this Chapter.

Table 11.1: Summary of Consultation Undertaken to Date			
Organisation	Individual(s)	Meeting Date and other forms of Consultation	Summary of Outcome of Discussion
Havant Borough Council	Simon Jenkins	29 th September 2021 – Scoping Opinion	The 2021 Scoping Opinion provided by HBC referred to the advice of the previous Scoping Opinion from Natural England which stated that Rights of Way, Access and Recreation should be scoped into the ES.
Natural England	Unknown	2017 – Scoping Opinion	In the 2017 Scoping Opinion Natural England stated that Rights of Way, Access and Recreation should be scoped into the ES as follows: <i>“The EIA should consider potential impacts on public open land and rights of way in the vicinity of the development. Appropriate mitigation measures should be incorporated for any adverse impacts.”</i> The response also recommended that the relevant Right of Way Improvement Plans (ROWIP) should be referenced <i>“to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.”</i>

Assessment Methodology

11.3.11 The method of baseline data collection and assessment is in accordance with current guidance and industry best practice.

11.3.12 The assessment methodology involves establishing the baseline through desktop analysis of aerial mapping and review of available documentation. This is then supported through a site visit to review the receptors as identified through the desk study.

11.3.13 Receptors are categorised in different levels of sensitivity and the magnitude of effect as a result of the Proposed Development is also categorised.

11.3.14 The anticipated effects are assessed with embedded mitigation measures in place but before the potential secondary mitigation is considered. The resulting residual effects factor in the mitigation from the previous stage.

11.3.15 Sensitivity of receptors are classified as follows:

- **High** – Receptors of high importance based upon factors of condition, proximity, recreational value, regularity of use and functional aspects.
- **Medium** – Receptors of medium importance based upon factors of condition, proximity, recreational value, regularity of use and functional aspects.
- **Low** - Receptors of low importance based upon factors of condition, proximity, recreational value, regularity of use and functional aspects.

11.3.16 Magnitude of impacts are classified as follows:

- **High** – Total loss of or major alteration to key characteristics / features. Overall receptor will be fundamentally changed.
- **Medium** – Partial loss of or alteration to one or more key characteristics/ features. Overall receptor will be obviously changed.
- **Low** – Limited loss of, or alteration to one or more key characteristics/ features. Overall receptor will be perceptibly changed.
- **Negligible** – Very minor alteration to one or more key characteristics/ features. Overall receptor will be minimally changed.
- **None** - No loss or alteration to the key characteristics/ features, representing 'no change'.

11.3.17 The final conclusions on effects, whether adverse or beneficial, are drawn from the separate judgements on the sensitivity of the receptors and the magnitude of the effects. This overall judgement is formed from a reasoned professional overview of the individual judgements against the assessment criteria. The following descriptive thresholds have been used for this appraisal:

- **Major**
- **Moderate**

- **Minor**
- **Negligible**
- **None.**

11.3.18 Table 11.2 below shows the Guiding Matrix which illustrates the comparison of the magnitude of the predicted effect with the sensitivity of the receiving receptor to reach the conclusions of level of effect and significance. The final judgement is however formed from a reasoned professional overview of the individual judgements against the assessment criteria.

Table 11.2 Guiding Matrix of Effects & Level of Significance					
Sensitivity of the Resources/ Receptor	Magnitude of the Predicted Impact				
	High	Medium	Low	Negligible	None
High	Major	Major-Moderate	Moderate-Minor	Negligible	None
Medium	Major-Moderate	Moderate	Minor	Negligible	None
Low	Moderate-Minor	Minor	Minor-Negligible	Negligible	None

11.3.19 Where it is determined that the assessment falls between or encompasses two of the defined criteria terms, then the judgement may be described as, for example, Major/Moderate or Moderate/ Minor. This indicates that the effect is assessed to lie between the respective definitions or to encompass aspects of both.

Significance Criteria

11.3.20 Effects which are deemed to be significant for the purposes of this assessment are those that are described as being of a **Moderate** or **Major Beneficial** or **Adverse** level.

11.4 Baseline Conditions

Rights of Way Baseline

11.4.1 Below is a list of the footpaths located within the surrounding site area:

Long Distance Footpaths

11.4.2 Shipwrights Way is a long-distance route that passes along the western side of Hayling Island, following the route of the Hayling Billy Trail, passing through Havant to the north, across the island and then west to Portsmouth. At the nearest point, this footpath is situated approximately 0.7km to the west of the Site and is accessible on foot from the Site via footpaths and roads.

Off Road Cycle Routes

11.4.3 The Hayling Billy Trail also provides a traffic-free cycle route. As above, this follows a short section of the Shipwrights Way long-distance footpath and is also a permissive footpath and recreational route and is located approximately 0.7km to the west of the Site at the nearest point. This route is also accessible via roads along much of its route.

Bridleways & Byways

11.4.4 There are no bridleways or byways within the Site itself or within close proximity, including the 3km study area.

Public Rights of Way

11.4.5 There are currently no public rights of way that cross the Site. However, three public footpaths run along the Site boundaries; 108/93/1 passes along the Site's northern boundary whilst 108/94/1 and 108/92/2 run down the Site's western boundary. These latter two footpaths merge into footpath reference 108/92/1 which passes west to Manor Road.

11.4.6 Public footpath reference 108/89/1 passes north-west through the adjacent holiday park, also connecting in with Manor Road. Other footpaths in the area include 108/101/1 which is located approximately 100m east of the Site on Legion Road and 108/96/1 which is situated approximately 0.3km to the south-west. Beyond these routes, further PRow are located within the 3km study area.

Access Baseline

- 11.4.7 The Site is located adjacent to the northern settlement edge of the suburb of Gable Head, to the south of Hayling Island. Hayling Island is accessed from the mainland by the A3023 Langstone Bridge and lies between Portsmouth and Chichester.
- 11.4.8 To the south, the context is predominantly residential but local shops and facilities can be found off Elm Grove and amenities increase closer to the seafront on the south coast. North of the Site the land opens up and gives way to agricultural fields, holiday parks and small settlement areas. St Mary's Road and Church Road pass close by to the Site's eastern boundary, separated by a line of residential dwellings.
- 11.4.9 The Site itself is not currently accessible to the public and is in current use as arable farmland. Much of the surrounding area is used by the public for leisure and recreation via the network of public footpaths and fields associated with Hayling Island Holiday Park.

Recreation Baseline

- 11.4.10 Being a popular tourist destination, Hayling Island is well provisioned when it comes to recreational opportunities. The Havant Borough Open Space Strategy uses Fields in Trust categories and standards as a benchmark for their study. According to the strategy, there are two public parks on the island, a large amount of natural and semi-natural greenspace which is largely located around Hayling Beach, six areas of amenity greenspace distributed across the island and twelve separate equipped play areas that cater for a range of ages and abilities. Many of these are located within walking distance of the Site as the majority of the residential area on Hayling Island is concentrated towards the southern half.
- 11.4.11 The Site is currently used for arable farming and so has no direct recreational use. In the wider area, the land north and west of the Site is popular with users of the network of public footpaths, visitors to St Mary's Church and the sports field associated with Hayling Island Holiday Park. This is not a designated green space but appears to be used for informal recreation by users of the holiday park. Around 300m east of the Site are allotments and an equipped play area which are located off Elm Grove and Palmerston Road.

Existing Formal Recreation

11.4.12 Hayling Park is situated approximately 0.3km to the south-west of the Site and offers sports pitches including football, cricket, tennis and a bowling green. There is an equipped play area at Hayling Park and another around 300m to the east of the Site near Mengham Junior School.

Existing Informal Recreation

11.4.13 There are a number of informal recreational opportunities in the area, the nearest of which are the playing fields to the east of Elm Grove and the allotments which are directly south of the fields. St Mary's Church would also fall under the informal recreational heading and is situated north-east of the Site. Hayling Beach is located approximately 0.8km to the south.

11.4.14 The Chichester Harbour National Landscape (NL) (formerly Area of Outstanding Natural Beauty (AONB)) lies approximately 470m to the east of the Site and covers an extensive area around the Emsworth Channel, the Torney Channel and the Chichester Channel. The NL is managed by the Chichester Harbour Conservancy with a focus on protection and restoration of nature as well as recreation and leisure. The NL includes wildlife habitat associated with the tidal channels and is also an active harbour. The 10 'special qualities' of the designated NL are as follows:

- *The unique blend of land and sea – especially the combination of expanses of open waters, narrow inlets and intimate creeks.*
- *The frequently wooded shoreline.*
- *The flatness of the landform, unusual among AONBs, accentuates the significance of sea and tide and of distant landmarks across land and water.*
- *The open water of the central area of the Harbour.*
- *The overall sense of wilderness within the seascape.*
- *The particularly strong historic environment and heritage assets.*
- *The picturesque harbourside settlements.*
- *The wealth of flora and fauna, and notably the vast flocks of wading birds add to the richness and diversity of the landscape.*
- *The unspoilt character and unobtrusive beauty.*
- *The very special sense of peace and tranquillity, largely engendered by the gentle way the AONB is used and closeness to nature that is experienced.*

11.4.15 The harbour is a recreational harbour with a fleet of around 10,000 vessels and also features areas of open access land with a number of public footpaths, including the Lipchis Way, Solent Way and Sussex Border Path long-distance footpaths.

Future Baseline

11.4.16 The likely evolving and future baseline of the Site, as can reasonably be expected, in the event that no development comes forward on the Site, has been evaluated. The Site is within private ownership and is currently managed as arable farmland. There is no direct access to the Site, although public footpaths do lead around the western and northern perimeters of the Site, outside of the site boundary.

11.4.17 In the event that the Proposed Development does not come forward, the assumption is that the future baseline will be that the Site continues to be farmed in a similar way to how it currently operates and that the various features of the Site will remain and be managed appropriately.

11.4.18 As a result of other development in the surrounding area coming forward, it is possible that the local population may increase. Use of the local PROW network and nearby formal and informal recreation facilities could see an increase in use as a result.

11.4.19 The Havant Borough Council Aspirational Cycle Map 2036 (2019) includes an Aspirational Cycle Link within the Site boundary, connecting across the Site in the northeast corner, linking footpath 108/93/1 to Church Road. As the Site is within private ownership, it is unlikely that the part of the link that is shown with the Site will come forward without the Site being developed.

11.4.20 It is anticipated that none of the receptors identified are any more or less sensitive to the potential change in future baseline conditions should the proposed development not be delivered.

Sensitive Receptors

11.4.21 Sensitive receptors have been identified within this assessment as those Public Rights of Way, recreational facilities and publicly accessible open spaces that could be susceptible to the effects of the Proposed Development and include the following:

- Existing footpaths surrounding the Site which would be of **High** sensitivity due to the close proximity to the Site and the regularity of use.
- Visitors to the Chichester Harbour NL would be of **High** sensitivity due to the high importance of NL's and the recreational value they offer.
- Users of the Shipwrights Way long-distance footpath/Hayling Billy Trail would be of **Medium** sensitivity due to the distance from the Site which is balanced by the popularity of the route.
- Sports facilities at Hayling Park would be of **Medium** sensitivity due to the formality of the sports provision which is balanced by the distance from the Site.
- Users of the land associated with Hayling Island Holiday Park which would be of **Low** sensitivity due to the informality of the space and the low number of users.

11.4.22 Footpaths at a greater distance to the Site including route 108/89/1 and 108/92/1 as well as others within the local area will see little changes in usage as a result of the Proposed Development due to their distance and lack of connectivity to the Site. As such they will not be considered further.

Limitations

11.4.23 There are no limitations to the baseline information relevant to this chapter.

11.5 Assessment of Effects

Design Solutions and Assumptions

11.5.1 Potential effects arising from the Proposed Development with respect to Rights of Way, Access and Recreation have been identified as part of the design process. Identifying such effects early on has assisted the development of the proposals, resulting in a considered and cohesive design approach overall. Without this, potential adverse effects in relation to rights of way, access and recreation could include:

- Effects on the local community's existing facilities and access to open space being strained by a development that offers little in the way of additional access routes or opportunities for recreation and does not take into account the surrounding green infrastructure or existing footpath network.

11.5.2 The potential for these effects has formed part of the design iteration process with particular regard to the potential effects upon the sensitive receptors set out above.

Embedded Mitigation

11.5.3 The development proposals are fully described in the Design and Access Statement and other information accompanying the planning application. The existing landscape resource, recreation users and general amenity of the Site have been considered by the planning and design process and have informed the resultant scheme. This approach has entailed collaboration between landscape, arboricultural, ecological, heritage and other professionals. The landscape design and circulation components of the scheme are an important integral part of the proposals and will assist with mitigating for the potential adverse effects of the Proposed Development on the landscape and visual amenity of the Site as well as the local recreation and access resource.

11.5.4 The key objectives of the landscape, GI and circulation proposals for the scheme relevant to the identified receptors are outlined below:

- Protect the existing network of PRoW that pass through the immediate context of the Site.
- Create new connections into the surrounding PRoW network to enhance permeability and improve connectivity with the wider area where this is achievable.
- Create new pedestrian and cycle routes through the Site, to link with the existing infrastructure and the wider footpath network where possible.
- Create a permeable Site, linking up proposed areas of open space to encourage informal recreation.
- Open up wider access to the Site which was previously in private use as farmland.
- Provide a substantial area of open green space to include a range of habitats for both informal recreation and biodiversity value.
- Provide youth facilities that are accessible and overlooked by adjacent properties for natural surveillance.
- Provide a children's play area that is easily accessible for all residents.

11.5.5 The proposals for Rights of Way, Access and Recreation have been informed by the objectives set out above. They include specific measures that will be taken to mitigate any adverse effects of the Proposed Development.

Rights of Way Proposals

- The existing PRow network including routes 108/93/1, 108/92/2 and 108/94/1 which lead around the northern and western Site boundary has been retained and protected, separated from the Proposed Development by a substantial green buffer including new tree planting.
- Two new connections into the PRow network have been proposed, one into the public footpath referenced 108/92/2 to the west and the other into 108/94/1 to the south-west. This will allow new residents of the development to access the wider landscape and will offer existing residents an alternative option for a recreational route.
- A potential connection into public footpath 108/93/1 to the north is also proposed up to the Site's northern boundary. This will enable/facilitate a future onward connection to be formed through the adjoining land and provide an alternative route for future occupants to access the public footpath.

Access Proposals

- Provision of new looped footpath and cycleway routes through the Proposed Development to link to the wider external network and routes through and around Hayling Island.
- Proposed highways works to St Mary's Road to create an access point with sensitive landscape treatment to provide a high quality, attractive green gateway.
- The gateway will be designed to create a distinctive entrance into the Proposed Development for safe convenient use.

Recreation Proposals

- The provision of a minimum of 4.21 hectares of land dedicated to GI, public open space, play and habitat related proposals – representing approximately 36% of the total Site area.
- A large expanse of green space has been retained to the north-west of the Site around the formal play areas, providing space for informal sports, leisure, recreation and amenity.
- Provision of a formal Local Area of Equipped Play and Teenage Provision.

- The creation of an informal perimeter path that creates a loop around the Site to improve connectivity to adjacent residential areas and to allow circulation, linking areas of green space with areas of play and development.
- A vista from the south-western corner of the Site to St Mary's Church to the north-east has been incorporated into the development proposals, highlighting the heritage of the Grade II* listed church. This will hopefully encourage visitors to the church and protect an important viewpoint as detailed in the accompanying Landscape and Visual Appraisal.
- Several other pockets of green space have been provided throughout the Proposed Development which will enable all residents to have access to green space and will promote outdoor activities and engagement with nature.

Landscape and Green Infrastructure (GI) Proposals

- 11.5.6 The landscape and GI proposals for the scheme are detailed in the Design and Access Statement accompanying the planning application. Those of relevance are set out in above under 'Recreation Proposals'.

'Nature Nearby' Accessible Natural Greenspace Guidance

- 11.5.7 In accordance with Natural England's Accessible Natural Greenspace Standard (ANGSt), the GI will be multifunctional in its design and management, capable of delivering a variety of open uses from active sport through to 'quiet' wildlife areas. Moreover, the GI will be publicly accessible and within suitable reach, so that the new community, for example, is no more than a 5-minute walk from an area of greenspace.

Open Space Provision

- 11.5.8 The Havant Borough Council Open Space Strategy (November 2018) includes an assessment of the qualitative and quantitative existing and future needs of the community for a range of open space types that exist within Havant Borough. The assessment identifies adequate supply of Public Parks and Gardens, Natural and Semi-Natural Greenspace and Amenity Greenspace but a shortfall in provision for Children and Young People and Allotments and Community Gardens.
- 11.5.9 The provision of open space in regard to the Proposed Development is set out on the Parameters Plan (Appendix 1.2) with further information shown on the Development Framework Plan submitted in support of the Planning Application. The Proposed

Development will provide a minimum of 4.21 Ha of Green Infrastructure which includes multi-functional greenspace and the proposed children's and teenage areas.

11.6 Assessment of Effects

11.6.1 The following section outlines the likely effects that would arise from the Proposed Development of the Site on the receptors identified at 11.4.20 above:

Rights of Way

11.6.2 This receptor includes routes adjacent to the Site including PRoW routes 108/93/1, 108/92/2 and 108/94/1. The sensitivity of this receptor is judged to be **High** due to the close proximity of the routes to the Site and potential for increase of users. The magnitude of impact is considered to be **Negligible** due to the minor scale of change to the receptor during demolition/construction and operation phases. The existing network will remain open during the demolition and construction phases with only very limited disturbance in close proximity to the Site. Only a low number of additional users of the routes are anticipated in the form of the occasional site worker and the effect on the local public footpath network that surrounds the Site is considered to be **Negligible Adverse (not significant)** during the **demolition and construction phases**.

11.6.3 On completion two new links are proposed into the PRoW network which will allow users of the footpaths to take new routes through the Site, providing more direct routes to the surrounding area. There is also potential for a third pedestrian link to be provided, which would connect to the public footpath (108/93/1) to the north of the Site. These routes will offer alternative and potentially quicker/more convenient routes to surrounding shops, schools and residential areas, helping to improve permeability within the area considerably. This will balance any adverse effects of a slight increase in users of the footpaths as a result of the Proposed Development. During **operation** it is considered that the effect on the public footpath network that surround the Site would also be **Negligible Adverse (not significant)**.

11.6.4 The sensitivity of the Shipwrights Way long-distance route receptor is determined to be **Medium** due to the distance from the Site balanced by the popularity of the route. The magnitude of impact is determined to be **Negligible** due to the very limited disturbance during demolition and construction and the minor scale of change to the receptor at operation caused by only a low number of anticipated additional users.

Effects on the receptor are considered to be **Negligible Adverse (not significant)** throughout **demolition and construction**. There will, inevitably be an increase in users of this route at operation, but the distance from the Site combined with the size and good surface of the footpath/cycleway enable it to accommodate the additional usage and effects are assessed as **Negligible Adverse (not significant)** at **operation**.

Recreation Impacts

- 11.6.5 There is currently no direct recreational use on the Site as it is in private ownership and is not publicly accessible.
- 11.6.6 In the immediate context, the open land associated with the adjacent holiday park, which includes an informal sports pitch, provides recreational opportunities for visitors to the holiday park. The sensitivity of this receptor is considered to be **Low** due to the low number of users which are limited to visitors to the holiday park and the informality of the space. The magnitude of impact is considered to be **None** as this land will still be associated with the holiday park, with no general public access, and there are no direct changes identified to the receptor as a result of the Proposed Development at the demolition/construction and operation phases. Effects for users of the land associated with the holiday park are deemed to be **None (not significant)** during **demolition and construction**. The land is primarily for use by guests at the holiday park with no increased access to the general public once the Proposed Development has been completed. In addition to this the Proposed Development will be providing additional play and recreation opportunities which will relieve pressure on local facilities and increase opportunities for both formal and informal recreation for the local population. Effects are assessed as remaining as **None (not significant)** at **operation**.
- 11.6.7 Visitors to Chichester Harbour NL are considered to be of **High** sensitivity. The magnitude of impact is determined to be **Negligible** due to the distance between the Site and the NL and the large scale of the NL as a whole. Effects on the NL throughout **demolition and construction** stages are anticipated to be minimal as a result of the distance and separation between the NL and the Site and the relatively small scale of the Proposed Development compared to the large area of the NL with effects assessed as **Negligible Adverse/None (not significant)**. The increase in visitors to the NL as a

result of the development is expected to be minimal and effects at **operation** are also considered to be **Negligible Adverse/None (not significant)**.

11.6.8 The sports facilities located at Hayling Park are considered to be of **Medium** sensitivity and the magnitude of impact is determined to be **Negligible** due to the distance from the Site which would result in a minor alteration to the receptor. The usage of this receptor is likely to see a slight rise with the Proposed Development. Effects are considered to be **Negligible Adverse/None (not significant)** at **demolition and construction** with the slight increase in additional patronage and revenue which will be created by more visitors and users of the sports facilities which will boost the local economy and help to keep the facilities running resulting in a **Negligible Beneficial/Minor Beneficial (not significant)** effect at **operation**.

11.7 Secondary Mitigation

11.7.1 No significant adverse effects have been identified for local sensitive receptors during demolition and construction and also at operation. Some additional secondary mitigation measures are envisaged/proposed in the form of offsite enhancements to existing PRoW (108/93/1 and 108/94/1), to be secured by developer contributions. Precise details would be subject to further discussion with Hampshire County Council, but it is expected this would consist of resurfacing works. These improvements will help to ensure the existing routes can accommodate the increase in usage as a result of the new development.

11.7.2 Other potential active travel enhancements are also discussed in Chapter 7 of this ES, which could also benefit future users of the Development.

11.8 Residual Effects

11.8.1 Residual effects are those effects remaining after the additional secondary mitigation (risk reduction) measures have been implemented. No significant effects have been identified, although the proposed secondary mitigation will help to improve the condition of the existing PRoW in the vicinity of the Site. There will be some adverse and some beneficial residual effects as the increased use of the footpaths would be balanced by the benefits of a wider network which will be established once new connections are made and the proposed offsite enhancements, which will improve the quality of the existing routes, are provided.

11.8.2 The off-site improvements will not affect any of the other receptors and residual effects for these receptors are assessed as the same as the effects detailed in the full assessment above.

11.8.3 A summary of the likely residual effects of the Proposed Development during the construction and operational phases are set out in Table 11.3 below.

Table 11.3 Summary of Residual Effects									
Receptor	Sensitivity (Neg / Low / Medium / High / Very High)	Likely Effect	Secondary Mitigation Proposed?	Magnitude of Impact (Neg / Small / Medium / Large / Very Large)	Nature of Effect (Direct / Indirect)	Temporal Scale (Short / Medium / Long)	Permanence Effect (Temporary / Permanent)	Type of Effect (Adverse / Beneficial)	Residual Significance (Neg / Minor / Moderate / Major)
Construction Phase									
Footpaths in the immediate vicinity of the Site - 108/94/1 - 108/92/1 - 108/92/2 - 108/93/1 - 108/89/1	High	Disturbance to footpath users during construction/demolition activities.	None	Negligible	Indirect	Short-term	Temporary	Adverse	Negligible (Not Significant)
Users of the Shipwrights Way long-distance footpath	Medium	Disturbance to footpath users during construction/demolition activities.	None	Negligible	Indirect	Short-term	Temporary	Adverse	Negligible (Not Significant)
Users of the land associated with Hayling Island Holiday Park	Low	No effect during construction/demolition due to private ownership of holiday park	None	None	N/A	N/A	N/A	None	None (Not Significant)
Visitors to Chichester Harbour National Landscape	High	Slight disturbance to NL in general during construction/demolition.	None	Negligible	Indirect	Short-term	Temporary	Adverse	Negligible/none (Not Significant)

Table 11.3 Summary of Residual Effects									
Sports facilities at Hayling Park	Medium	Slight disturbance during construction/demolition	None	Negligible	Indirect	Short-term	Temporary	Adverse	Negligible/none (Not Significant)
Operational Phase									
Footpaths in the immediate vicinity of the Site - 108/94/1 - 108/92/1 - 108/92/2 - 108/93/1 - 108/89/1	High	Increased usage during operational phase	Enhancement of PROWs adjacent to the site	Negligible	Direct	Long-term	Permanent	Beneficial	Negligible (Not Significant)
Users of the Shipwrights Way long-distance footpath	Medium	Slight increase in users during operation.	None	Negligible	Indirect	Long-term	Permanent	Adverse	Negligible (Not Significant)
Users of the land associated with Hayling Island Holiday Park	Low	No effect during operation due to private ownership of holiday park	None	None	N/A	N/A	N/A	None	None (Not Significant)
Visitors to Chichester Harbour National Landscape	High	Slight increase in visitors during operation.	None	Negligible	Indirect	Long-term	Permanent	Adverse	Negligible/None (Not Significant)
Sports facilities at Hayling Park	Medium	Slight increase in users during operation.	None	Negligible	Indirect	Long-term	Permanent	Beneficial	Negligible/Minor (Not significant)

11.9 Assessment of Cumulative Effects

11.9.1 This section considers the significance of likely cumulative effects on the identified receptors that are likely to be affected by the Proposed Development.

11.9.2 Cumulative impact and effect arises as a result of a number of different factors and combined changes. These generally fall into three categories:

- The cumulative effects arising from the combination of the different environmental topics as outlined in the Environmental Statement.
- Cumulative effects arising from a range of proposed developments and/or Local Plan allocations occurring at different locations over a period of time. Separately, such individual developments may not create an unacceptable degree of adverse effect, but collectively the results may potentially be significant.

Intra-cumulative effects

11.9.3 There is potential for intra-cumulative effects between Rights of Way, Access and Recreation and Transport as Section 3 in the Scoping Opinion identified environmental impacts on 'Pedestrian delay and amenity' should be considered within the Transport chapter. Chapter 8 (Transport) did not identify any residual adverse effects beyond a minor level. With consideration of this and the residual effects set out in Table 11.3 intra-cumulative effects are anticipated to be not significant.

Inter-cumulative effects.

11.9.4 Cumulative environmental effects arising from the Proposed Development and other projects and/or Local Plan allocations within the locality are assessed where appropriate using the methodology as outlined in section 11.3.

11.9.5 Potential projects identified to be considered within the Cumulative Assessment are detailed in Chapter 2.

11.9.6 The first stage of the cumulative effects assessment is to determine which of the identified schemes are to be scoped in or out of the assessment. Sites which are not considered relevant to the assessment of Cumulative Effects are included in Table 11.5 below. These sites are excluded due to the distance between them and the Site, the type of development and the lack of potential use by new residents.

Table 11.5 Sites Excluded from Cumulative Effects Assessment

Site reference	Site Location	Reason for Exclusion
APP/22/00669	Kingscroft Farm, Havant	Site is located over 6km to the north west of the Proposed Development Site and therefore considered sufficient distance so as not to result in cumulative effects.
APP/22/01231	Park Road, Havant	Site is located over 6.5km to the north west of the Proposed Development Site and therefore considered sufficient distance so as not to result in cumulative effects.
APP/22/01039	New Lane, Havant	Site is located over 7km to the north of the Proposed Development Site and therefore considered sufficient distance so as not to result in cumulative effects.
APP/23/00076	Tournerbury Lane, Hayling Island	Site is located around 0.6km to the east of the Site. Application is for a change of use for a private business use which will be contained within the Site and is not considered to result in cumulative effects with the proposed residential development.
APP/22/00669	Land at Kingscroft Farm adjacent to Ridgway and, Marples Way, Havant	Site is located 6.2km to the north west on the mainland and is considered sufficient distance so as not to result in cumulative effects.
APP/22/00172 (including APP/24/00058, and APP/24/00274)	Langstone Technology Park, 2B Langstone Road, Havant	Site is located 5.6km to the north on the mainland and is considered sufficient distance so as not to result in cumulative effects.

Table 11.5 Sites Excluded from Cumulative Effects Assessment		
Site reference	Site Location	Reason for Exclusion
APP/20/00533	B.M Scaffolding, Brockhampton Road, Havant	Site is located 6.05km to the north west on the mainland and is for a small scale commercial development and is not considered to result in cumulative effects.
Havant Local Plan Policy HB2 Havant & Bedhampton Employment Allocations – Site Ref: BD10	Land North of the Regional Business Centre	Site is located 6.02km to the north west on the mainland and is an employment allocation and is not considered to result in cumulative effects.

11.9.7 Table 11.6 includes details of sites that are considered relevant to the Cumulative Effects Assessment.

Table 11.6 Sites Excluded from Cumulative Effects Assessment		
Site reference	Site Location	Reason for inclusion
APP/20/01093	Land at Sinah Lane, Hayling Island	Site is located around 0.7km to the west of the application site and is for a similar residential development.
APP/22/00001	49-71 Fathoms Reach, Hayling Island	Site is located adjacent to the application site and is for a similar residential development.
APP/21/01351	Saltmarsh Lane, Hayling Island	Site is located around 0.5km to the west of the application site and is for a similar residential development.
APP/21/01350	North of Oysters, Hayling Island	Site is located around 0.6km to the west of the application site and is for a similar residential development.

Table 11.6 Sites Excluded from Cumulative Effects Assessment

Site reference	Site Location	Reason for inclusion
APP/24/00968	Beachlands, 5 Sea Front, Hayling Island	Site is around 0.8km to the south of the Site. Application is for demolition of existing Beachlands Amusement Arcade building and replacement with 4 new commercial units as well as a 4-storey residential development of 32 units with open space and public realm.

11.9.8 The cumulative sites listed in Table 11.6 above are all located within 1km of the Site and are for similar residential developments with the Beachlands development being for residential and commercial use. If all the cumulative developments came forward in conjunction with the Proposed Development, there would be an increase of residents in the local area which would result in an increase of potential users and effects on the sensitive receptors identified within this chapter.

11.9.9 The land associated with Hayling Island Holiday Park is in private ownership and not accessible by the public and there are not considered to be any Cumulative Effects as a result of all of the proposed developments coming forward in conjunction with the Proposed Development. Cumulative effects are assessed as **None (not significant)**.

11.9.10 Chichester Harbour NL is an extensive area with a number of PROW and other places of interest. It is not considered that there will be cumulative effects on the NL as a result of all developments coming forward as a result of the scale of the NL compared to the increase in residents likely to be visiting the area. It is considered that the NL area has the ability to absorb an increase in visitor numbers without resulting in an increase in adverse effects. Cumulative effects are assessed as **None (not significant)**.

11.9.11 Cumulative effects on the sports facilities at Hayling Park are anticipated as being minimal as it is anticipated that additional users as a result of all developments coming forward will be relatively low in number. Cumulative effects overall are assessed as **None (not significant)**.

11.9.12 The only receptors that are likely to result in any cumulative adverse effects are the local footpaths and users of Shipwrights Way long-distance footpath. Additional increased usage of the public footpaths and long-distance route could have the potential to degrade the surface of a footpath or increase the busyness of the route.

11.9.13 Application site APP/22/00001 at Fathom's Reach is immediately adjacent to the Site with the remaining sites located further to the west and south. The increase in residents as a result of the developments is likely to result in an increase in the use of footpaths 108/94/1, 108/92/1, 108/92/2, 108/93/1 and 108/89/1 as well as to the Shipwrights long distance route. The development proposals do however include associated recreation provision in the form of areas of open space, public realm, play areas and footpaths depending on the scale of the proposals, which would help absorb some of the recreation requirements of the new residents. Cumulative effects on users of local footpaths and Shipwrights Way long distance route as a result of the proposed developments coming forward in conjunction with the Proposed Development are assessed as **Negligible Adverse (not significant)**.

11.10 Summary

11.10.1 It is considered that the Proposed Development would benefit the existing footpath and cycleway infrastructure of Hayling Island by introducing a network of footpaths and cycleways that would link open spaces, improving people's access to green space and the wider countryside on land that was otherwise inaccessible to the public. Amenity greenspace and equipped play facilities and youth provision would relieve pressure on local facilities and increase opportunities for both formal and informal recreation for the local population.

11.10.2 Of the identified receptors that could be impacted by the rights of way, access and recreation proposals, the effects on the PRoW network around the Site would be **Negligible Adverse** at demolition and construction and **Negligible Beneficial** at operation as the increased use of the footpaths would be balanced by the benefits of a wider network which will be established once new connections are made and the proposed offsite enhancements which will improve the quality of the existing routes. For other receptors, the Proposed Development is assessed as resulting in effects of **Negligible Adverse** or **None** during demolition and construction as well as at operation with the exception of users of the sports facilities at Hayling Park which will have a

Negligible Beneficial to Minor Beneficial effect during operation, due to the increased business as a result of the Proposed Development. None of the effects are assessed as Significant.

11.10.3 With regard to Cumulative effects, only some **Negligible Adverse** effects are identified for users of the local PROW network and the Shipwrights Way long distance route as a result of all cumulative developments coming forward in conjunction with the Proposed Development.

11.10.4 In summary, it is considered that the Proposed Development could be accommodated within the existing infrastructure with no significant adverse effects upon the wider rights of way, access and recreational resources. Over time, the introduction of new footpath connections will improve permeability throughout the area and as the proposed green infrastructure matures, the Proposed Development will assimilate into the existing settlement edge context and will result in the creation of landscape, biodiversity and recreational benefits which would outweigh any adverse effects.

12 VULNERABILITY TO MAJOR ACCIDENTS AND DISASTERS

12.1 Introduction

- 12.1.1 This Chapter reports the likely significant effects of the Proposed Development in terms of its vulnerability to major accidents and disasters in the context of the Site and surrounding area. In particular it considers the potential for the Proposed Development to, where relevant, cause/make worse a major accident or disaster; and be affected by the major accident or disaster.
- 12.1.2 This Chapter (and its associated figures and appendices) is not intended to be read as a standalone assessment and reference should be made to Chapters 1 – 5 and 13 of this ES.
- 12.1.3 Preceding chapters of this ES have assessed construction and operational effects of the Proposed Development on the environment and local population (i.e. Air Quality, and Water Environment) and mitigation measures are proposed to reduce any identified effects, including the risk of major accidents or disasters. Where relevant the findings of these assessments and identification of mitigation measures have informed this assessment.

12.2 Legislation, Policy and Guidance

- 12.2.1 The relevant legislation, policy and guidance are listed below.

Legislative Framework

- 12.2.2 This chapter has been undertaken in accordance with Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as the EIA Regulations) which requests the inclusion of 'A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned'.
- 12.2.3 Whilst no definition of a major accident or disaster is provided within the EIA Regulations they do recognise the potential for significant effects due to such events. As such the underlying objective of this assessment is to ensure that appropriate precautionary actions are taken for those developments which: '...because of their vulnerability to major accidents and/or natural disasters (such as flooding, sea level rise, or earthquakes), are likely to have significant adverse effects on the environment'. (Paragraph 15 of Directive 2014/52/EU).

Planning Policy

- 12.2.4 This chapter has been undertaken in accordance with the National Planning Policy Framework (NPPF) 2024. Whilst the NPPF does not include a specific chapter relating to major accidents and disasters it does discuss hazards throughout in relation to topics such as public safety, climate change and flood risk. Reference should be made to the proceeding chapters of this ES for details on specific sections of the NPPF relevant to the topic in question.
- 12.2.5 The topic of accidents and disasters is also not specifically mentioned within the Havant Borough Core Strategy March 2011. The Core Strategy does however place an emphasis on highway safety and crime. Local Plan Policies of particular relevance to this chapter are:
- CS8: Community Safety;
 - CS15 Flood and Coastal Erosion Risk;
 - CS16: High Quality Design;
 - DM10: Pollution; and
 - DM12: Mitigating the Impacts of Travel.

Guidance

- 12.2.6 Owing to the fact major accidents and/or disasters is a relatively new and emerging topic within EIA there is no set guidance. It is acknowledged that the methodology for such assessment is evolving as practice in the field emerges. Current methodologies are based on current best practice, IEMA's Major Accidents and Disasters in EIA: A Primer (September 2020), European Guidance (The EU Directive (2014/52/EU) and other UK regulatory processes and sources of information, particularly the Control of Major Accident Hazard Regulations 2015 (COMAH), and the UK's current National Risk Register 2025 Edition.
- 12.2.7 The EU Directive (2014/52/EU) states that two key considerations are required within the assessment of major accidents and/or disasters; the Proposed Development's potential to cause accidents and/or disasters; and the vulnerability of the Proposed Development to a potential disaster/accident.
- 12.2.8 The COMAH Regulations aim to ensure that businesses 'take all necessary measures to prevent major accidents involving dangerous substances limit the consequences

to people and the environment of any major accidents which do occur'. 'COMAH treats risks to the environment as seriously as those to people'.

- 12.2.9 This chapter has also been developed taking account of IEMA's Major Accidents and Disasters in EIA: A Primer (September 2020). The Primer looks to increase awareness of the major accidents and/or disasters EIA topic whilst offering an assessment methodology based on known current practice within the UK to date. The methodology is structured around a typical assessment approach and offers a proportionate method for considering major accidents and/or disasters through screening, scoping and assessment.
- 12.2.10 The Civil Contingencies Act 2004 requires emergency responders in England and Wales to co-operate in maintaining a public Community Risk Register. Community Risk Registers provide a brief overview of significant risks reflecting as far as possible, the unique characteristics (local conditions, infrastructure and geography) of an area. These are published by Local Resilience Forums and look to inform individuals about the highest risks in the area and their consequences; detail steps that can be taken to become better prepared and more resilient; and provide links to organisations and websites to find out more information. The Hampshire and Isle of White Community Risk Register is therefore of relevance to this chapter.
- 12.2.11 Also of relevance are the Havant Borough Council Emergency Response Plan 2024 and the Hayling Island Emergency Planning Framework 2025. The Emergency Response Plan details the District Council's emergency response and recovery management framework. The Framework notes that the only fixed means of gaining vehicular access to the Island is via a two-lane metalled highway carried by a bridge from Langstone on the mainland to Northney on Hayling Island.

12.3 Assessment Methodology and Significance Criteria

Scope of the Assessment

- 12.3.1 HBC adopted a Scoping Opinion in September 2021 which stated that '*Given the potential vulnerability of Hayling Island as a whole to flood risk and/or accidents impacting access to the island and potential impact on emergency services it is considered appropriate to address the proposed development's vulnerability to such risks as part of the ES*'.
- 12.3.2 In accordance with HBC's Scoping Opinion, this chapter considers the potential impact upon emergency services should the Proposed Development cause/make

worse a major accident or disaster which in turn has an impact upon infrastructure, including the single access road onto the island.

12.3.3 Appendix 12.1 Risk Table details the findings of the desktop scoping study, setting out the potential accidents and disasters which will be considered within this assessment. The following risk groups will be considered:

- Terrorism
 - Terrorist attacks in venues and public spaces: explosive devices
 - Terrorist attacks in venues and public spaces: marauding attacks
 - Conventional attack: gas infrastructure
 - Cyber attack: gas infrastructure
 - Conventional attack: electricity *infrastructure*
 - Cyber attack: electricity infrastructure
- Cyber attacks
- Accidents and systems failures
 - Highway accident
 - Major maritime pollution incident
 - Failure of the National Electricity Transmission System (NETS)
 - Regional failure of the electricity network
 - Failure of gas supply infrastructure
 - Water infrastructure failure or loss of drinking water
 - Major fire
 - Chemical and Biological Contamination
- Natural and environmental hazards
 - Severe space weather
 - Storms
 - High temperatures and heatwaves
 - Low temperatures and snow

- Flooding
- Drought
- Poor air quality
- Human, animal and plant health
 - Pandemic
 - Outbreak of an emerging infectious disease
 - Animal disease.

Effects Not Considered within the Scope

- 12.3.4 Risk groups and topics not considered within the scope of this assessment are discussed and justified in the Risk Table at Appendix 12.1.

Extent of the Study Area

- 12.3.5 The Study Area for the assessment has been based on professional judgement, owing to the fact that there is no specific regulatory guidance nor set standardised methodology.
- 12.3.6 The Study Area encompasses each of the individual study areas defined within the technical chapters of this ES (Chapters 6 to 11).

Consultation Undertaken to Date

- 12.3.7 Table 12.1 provides a summary of the consultation activities undertaken in support of the preparation of this Chapter.

Table 12.1: Summary of Consultation Undertaken to Date				
Organisation		Individual(s)	Meeting Date and other forms of Consultation	Summary of Outcome of Discussion
Havant Borough Council		Simon Jenkins, Director of Regeneration and Place	EIA Scoping Opinion 29 th September 2021	Concluded Risks of Major Accidents and/or Disasters should be scoped into the ES.

Assessment Methodology

- 12.3.8 There is currently no published guidance or methodology for the assessment of major accidents and disasters. The methodology utilised in this assessment has therefore been devised with reference to the IEMA's Major Accidents and Disasters in EIA: A Primer and has taken account of evolving EIA best practice.

- 12.3.9 The assessment adopts a three-stage approach which looks to identify, screen, scope and assess the major events of relevance to the Proposed Development. The stages are as follows:

Stage 1: Screening

- 12.3.10 This stage identifies if the Proposed Development has a vulnerability to major accidents and/or disasters and considers whether a development could lead to a significant effect.

Stage 2: Scoping

- 12.3.11 The purpose of this stage is to define the scope of the assessment. This stage determines in more detail whether there is potential for significant effects as a result of major accidents and/or disasters associated with the Proposed Development.
- 12.3.12 A desktop study, comprising a review of the UK's current National Risk Register 2025 Edition, Hampshire and Isle of White Community Risk Register, Havant Borough Council Emergency Response Plan 2024 and the Hayling Island Emergency Planning Framework 2021 has been undertaken. This identified an initial list of major accidents and disasters for consideration.
- 12.3.13 Appendix 12.1 Risk Table details the findings of the desktop study. It is noted that not all potential events will fall into the scope of a major accidents and/or disasters assessment. The Risk Table therefore also defines the risk attributed to an event in order to inform what types of events are within the scope of the major accidents and/or disasters assessment.
- 12.3.14 As set out within IEMA's *Major Accidents and Disasters in EIA: A Primer* (September 2020) events that have a high likelihood of occurring and would be of high consequence are a high risk and would be unacceptable for any development. Such events may include an element of highway design that did not comply with standards leading to a major road traffic collision and it is assumed that these should already be managed or designed-out by a development. These are therefore considered to be outside the scope of the assessment in accordance with IEMA's *Major Accidents and Disasters in EIA: A Primer* (September 2020).
- 12.3.15 At the other end of the scale, low-impact events whatever the likelihood, such as minor spills, are low risk and are unlikely to be considered a major accidents and/or disasters risk. These events would not threaten immediate or delayed serious

environmental effects to human health, welfare and/or the environment that require the use of resources beyond those of the client or its appointed representatives to manage. These are also therefore considered to be outside the scope of the assessment.

- 12.3.16 Owing to the above, the assessment will focus on low likelihood but potentially high consequence events in accordance with IEMA's *Major Accidents and Disasters in EIA: A Primer* (September 2020). This approach allows for the assessment to remain proportionate.
- 12.3.17 Any hazards for which there is no credible source-pathway-receptor linkage have also been scoped out from further assessment.

Stage 3: Assessment

- 12.3.18 Where the scoping exercise (Stage 2) could not adequately justify the scoping out of a particular major event further assessment has been undertaken.
- The assessment approach comprises the following stages:
 - Characterisation of baseline conditions.
 - Assessment of each of the identified events to determine the potential increased risk of an event occurring and the significance of effects, in the absence of mitigation, on sensitive receptors (people, built infrastructure and the environment), during both the construction, including demolition and enable works, and operation of the Proposed Development.
 - Determination of mitigation measures for any identified considerable risk or significant adverse effects.
 - Assessment of residual and cumulative effects.
- 12.3.19 The assessment has considered a reasonable worst-case approach for each scoped in event, assessed qualitatively, using professional judgement. The approach to assess effects has considered the potential for the Proposed Development to, where relevant:
- cause/make worse a major accident or disaster (Part 1 of the Assessment of Effects); and
 - be affected by the major accident or disaster (Part 2 of the Assessment of Effects).

Significance Criteria

Cause/make worse a major accident or disaster (Part 1 of the Assessment of Effects)

- 12.3.20 The purpose of Part 1 of the Assessment of Effects is to identify whether the Proposed Development has the potential to cause/make worse a major accident or disaster taking into consideration embedded mitigation. It acts as an extension to the Scoping stage outlined above. As such the assessment looks at risk rather than a magnitude of change upon a receptor. Therefore, a risk (of occurring) level is applied rather than a level of effect. Risk levels comprise high; medium; low; very low; and negligible. The risk assessment will be based on professional judgment and the findings of the technical chapters.
- 12.3.21 Following the determination of risk, site specific mitigation required, based on the risk determined, will be identified where necessary. An assessment is therefore undertaken (residual assessment), with additional mitigation measures in place, to determine whether or not these are significant.

Be affected by the major accident or disaster (Part 2 of the Assessment of Effects)

- 12.3.22 For Part 2 of the Assessment of Effects, a risk-based approach has been utilised following typical methods employed within EIA to define significance. The overall effect on each potential receptor has been evaluated as a function of receptor sensitivity with the potential magnitude of change (impact).
- 12.3.23 In this case the potential magnitude of change is considered to be that of a 'major' event. By definition a 'major accident is an event which threatens immediate or delayed serious environmental effects to human health, welfare and/or the environment, and requires the use of resources beyond those of the client or its appointed representatives (i.e. contractors) to manage'¹. This would therefore imply that any accident or disaster defined as 'major' would result in a high magnitude of change and would therefore result in a significant effect on the environment.
- 12.3.24 Owing to the above should a typical EIA methodology where significance of effect is determined as a function of the magnitude and sensitivity be utilised all effects would be assessed as substantial which would be considered to be 'Significant' in EIA terms (Table 12.2).

¹ IEMA . (2020). Major Accidents and Disasters in EIA: A Primer. ARUP. Available at: [Major Accidents and Disasters in EIA: An IEMA Primer](#)

Table 12.2: Significance of Effect		
		Magnitude of Change (Impact)
		High
Receptor Sensitivity	High	Substantial
	Moderate	Substantial
	Low	Substantial
	Very Low	Substantial

12.3.25 However, it is noted that should suitable mitigation, management or regulatory controls be in place the effects can be reduced to one that is 'Not Significant'. This is where the 'risk-based approach' assists in providing a proportionate assessment. Output from Table 12.2 will be adjusted to reflect the risk of the event occurring and impacting upon sensitive receptors using Table 12.3, to provide an overall assessment of significance. The risk assessment will be based on professional judgment and consideration of the specific local circumstances relevant to the effect.

Table 12.3: Level of Effect (Significance of Effect) Adjusted for Risk of Event Occurring					
Significance of Effect (From Table 12.3)	Risk				
	High	Medium	Low	Very Low	Negligible
Substantial	Substantial	Substantial	Moderate	Minor	Negligible

12.3.26 Note, effects can be adverse or beneficial in nature. Those effects assessed as being substantial (as set out in Table 12.3) are considered to be 'Significant' in EIA terms.

12.4 Baseline Conditions

12.4.1 The Site currently comprises land at Rook Farm (two arable fields, an area of grassland, an agricultural building and a pond). In accordance with the scope, the baseline environment of the project area is detailed below.

Terrorism

12.4.2 The UK faces a serious and sustained threat from terrorism. At the time of writing the current UK threat level for national terrorism is 'substantial'.

Terrorist attacks in venues and public spaces: explosive devices and marauding attacks

12.4.3 No reported acts of terrorism have occurred at the Site or on Hayling Island.

Conventional attacks: gas infrastructure

- 12.4.4 Plans provided by Scottish and Southern Energy (SSE) and Scotia Gas Networks (SGN) indicate no gas infrastructure is located on the Site. Low Pressure (LP) mains however are located in the surrounding area serving the surrounding land uses. These mainly follow the orientation of existing highways (i.e. along St Mary's Road and Church Road).
- 12.4.5 As reported in the 2025 National Risk Register the Russia-Ukraine war has seen a number of attacks on gas infrastructure (in Ukraine).
- 12.4.6 In 2023 there was a possible attack on an undersea gas pipeline (the Balticconnector) connecting Finland and Estonia. The impact of this event was felt by the UK that saw gas prices increase.

Cyber attacks: gas infrastructure

- 12.4.7 Plans provided by Scottish and Southern Energy (SSE) and Scotia Gas Networks (SGN) indicate no gas infrastructure is located on the Site. Low Pressure (LP) mains however are located in the surrounding area serving the surrounding land uses. These mainly follow the orientation of existing highways (i.e. along St Mary's Road and Church Road).
- 12.4.8 No reports of a cyber attack upon gas infrastructure within the UK have been found.

Conventional attack: electricity infrastructure

- 12.4.9 Plans provided by Scottish and Southern Energy (SSE) illustrates that an underground high voltage (HV) 11kV line runs across the centre of the Site in an east to west orientation and two overground HV 33kv cables are located within the northeast of the Site. Other HV and LV electrical infrastructure is located in the surrounding area.
- 12.4.10 The 2025 National Risk Register identifies that the UK has a highly resilient electricity network, and despite attempts to attack electricity infrastructure in the 1990s, the UK has not been exposed to a successful attack on electricity infrastructure.
- 12.4.11 In April 2025 a power outage left millions of people in Spain, Portugal and parts of France without electricity. The outage affected transport networks, schools and emergency services and led to a state of emergency declaration in Spain. The cause of the failure is yet to be determined.

Cyber attack: electricity infrastructure

- 12.4.12 Plans provided by Scottish and Southern Energy (SSE) illustrates that an underground high voltage (HV) 11kV line runs across the centre of the Site in an east to west orientation and two overground HV 33kv cables are located within the northeast of the Site. Other HV and LV electrical infrastructure is located in the surrounding area.
- 12.4.13 The 2025 National Risk Register reports that Great Britain has never experienced a nationwide loss of power.
- 12.4.14 In April 2025 a power outage left millions of people in Spain, Portugal and parts of France without electricity. The outage affected transport networks, schools and emergency services and led to a state of emergency declaration in Spain. The cause of the failure is yet to be determined.

Cyber Attacks

Cyber Attacks (including on Health and social care system; Transport sector; and Telecommunications systems)

- 12.4.15 The event is scoped in owing to the Hampshire and Isle of White LRF'S Community Risk Register which considers cyber attacks upon health and social care system and telecommunications systems as very high risks to the area and the risk upon the transport sector as medium.
- 12.4.16 No reported cyber attacks have occurred within Hampshire.
- 12.4.17 In June 2024 Synnovis, a pathology laboratory which processes blood tests on behalf of several NHS organisations, primarily in South East London, was the victim of a cyber-attack. As a result of the attack 10,152 acute outpatient appointments and 1,710 elective procedures were postponed at the most affected trusts: King's College Hospital NHS Foundation Trust and Guy's and St Thomas' NHS Foundation Trust².

²National Risk Register 2025, HM Government

- 12.4.18 In September 2024 Transport for London (TfL) suffered a cyber attack that exposed bank and other personal details of customers and employees. Tube and bus services were unaffected, however the attack caused several million pounds in damages³.

Accidents and Systems Failures

Highway accident

- 12.4.19 A review of accidents in the study area over the recent 5-year period has been undertaken within the Transport Assessment (TA) (Appendix 8.1). As reported in Chapter 8 (Transport) personal injury collision data has been purchased from Hampshire Constabulary to cover the five-year period of 1st August 2019 to 31st July 2024 i.e. 60 months. The collision study area includes the A3023 from its junction with the A27 and Park Road South in Havant to the north, to its junction with Sea Front (Beachlands roundabout) to the south. Also included is Church Road from its junction with the A3023 and Sea Front to the north and south respectively, as well as St Mary's Road and Cherrywood Gardens. The total length of the roads included in the collision study area is circa 12.5km.
- 12.4.20 In total there were 86 collisions within the study area, comprising of 26 serious and 60 slight injury collisions. No fatal collisions occurred. The annual number of collisions varied between 13 and 25 per year.
- 12.4.21 Chapter 8 further states 'the collisions were generally dispersed across the study area with only small clusters at a number of junctions. The frequency and severity of collisions is not to an extent that we would consider there to be any collision blackspots'.
- 12.4.22 Further analysis is provided in Chapter 8 (Transport) and the TA (Appendix 8.1).

Major Maritime Pollution Incident

- 12.4.23 Adjoined to the southern coastline of Hayling Island is the English Channel, which is one of the world's busiest shipping lanes, with approximately 500 vessels traveling through the Channel each day⁴.

³TfL cyber attack: What you need to know, BBC. Available at:

<https://www.bbc.co.uk/news/articles/cegn7xng7lpo>

⁴ World Economic Forum. (2022). Mapping shipping lanes: Maritime traffic around the world. Available at: [Mapping shipping lanes: Maritime traffic around the world | World Economic Forum \(weforum.org\)](https://www.weforum.org/articles/2022/01/mapping-shipping-lanes-maritime-traffic-around-the-world/)

12.4.24 No major maritime pollution incidents have been reported within the vicinity of Hayling Island however they have previously occurred in the English Channel. One such event was the 2007 MSC Napoli Shipwreck Disaster when a large shipping container carrying 3,800 tonnes of oil and other assorted cargo including explosives, fertiliser and weedkiller suffered severe damage in a storm and became shipwrecked on Dorset's Jurassic Coast. The incident resulted in a £120 million salvage operation that lasted 924 days⁵.

12.4.25 In 2011 Pretty Time Shipping were found guilty of causing palm oil to wash up on shores in Hampshire and West Sussex, including Hayling Island. It was however stated that 'the pollutant was fairly benign and there was no major impact on the environment, however there was the shock value of this material turning up on the beach'⁶.

Failure of the National Electricity Transmission System (NETS)

12.4.26 The National Risk Register 2025 highlights that Great Britain has never experienced a nationwide loss of power.

12.4.27 Whilst not on a national scale, incidents of widespread distribution to the NETS have occurred such as on 9th August 2019, when a power outage caused by a lightning strike subsequently caused two power stations at Hornsea One Ltd and Little Barford to go offline. Over 1 million people experienced a power disconnect for a period of 45 minutes. Several other services were disrupted due to the affected service providers' own safety systems or problems with their back-up power supplies. The rail services were particularly affected with more than 500 services disrupted⁷.

12.4.28 In April 2025 a power outage left millions of people in Spain, Portugal and parts of France without electricity. The outage affected transport networks, schools and emergency services and led to a state of emergency declaration in Spain. The cause of the failure is yet to be determined.

⁵ Environment Agency. (2017). Tenth anniversary of the MSC Napoli shipwreck disaster. Available at: [Tenth anniversary of the MSC Napoli shipwreck disaster - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/tenth-anniversary-of-the-msc-napoli-shipwreck-disaster)

⁶ Pretty Time Shipping found guilty of palm oil spillage. BBC. Available at: <https://www.bbc.co.uk/news/uk-england-hampshire-16090934>

⁷ August 2019 power outage report. ofgem. Available at: [9 august 2019 power outage report.pdf](https://www.ofgem.gov.uk/publications-and-reports/august-2019-power-outage-report)

- 12.4.29 Plans provided by Scottish and Southern Energy (SSE) illustrates two overground HV 33kv cables are located within the northeast of the Site. Other HV electrical infrastructure is located in the surrounding area.

Regional Failure of the Electricity Network

- 12.4.30 Plans provided by Scottish and Southern Energy (SSE) illustrates that an underground high voltage (HV) 11kV line runs across the centre of the Site in an east to west orientation and two overground HV 33kv cables are located within the northeast of the Site. Other HV and LV electrical infrastructure is located in the surrounding area.
- 12.4.31 The UK has experienced a number of smaller-scale regional electricity failures in recent years including those caused by storms Arwen and Eunice in winter 2021/2022 where thousands of homes were left without power. Storm Arwen, in particular, caused the loss the loss of electricity supply for over 40,000 customers for over three days, and nearly 4,000 customers were without electricity for over a week⁸.
- 12.4.32 It should be noted that in 2021 it was reported that Scottish & Southern Electricity Networks were investing in a £1.5 million upgrade to Hayling Island's electricity infrastructure for the purposes of increasing the resilience of its power supply⁹. Works include upgrades to, and replacement of, 12 km of high voltage cable, and the refurbishment of the Havant Road substation to accommodate for increased electricity demands.

Failure of Gas Supply Infrastructure

- 12.4.33 Plans provided by Scottish and Southern Energy (SSE) and Scotia Gas Networks (SGN) indicate no gas infrastructure is located on the Site. Low Pressure (LP) mains however are located in the surrounding area serving the surrounding land uses. These mainly follow the orientation of existing highways (i.e. along St Mary's Road and Church Road).
- 12.4.34 There are no known records gas supply infrastructure failure within the local area.

⁸ Storm Arwen Report. Ofgem. Available at: <https://www.ofgem.gov.uk/research/storm-arwen-report>

⁹ Next stage of Hayling Island 1.5 million network upgrade works get under way. Scottish and Southern Electricity Networks. Available at: <https://www.ssen.co.uk/news-views/2021/2021-next-stage-hayling-island-network-upgrade-works-get-under-way/>

Water Infrastructure Failure or Loss of Drinking Water

- 12.4.35 Plans supplied by Portsmouth Water indicate there is no water infrastructure within the Site. However, water mains and foul water infrastructure (sewers) are located in the surrounding area associated with the surrounding land uses. These mainly follow the orientation of existing highways (i.e. along St Mary's Road and Church Road.
- 12.4.36 An incident of this nature has occurred previously within proximity to the Site in June 2019 when a burst mains water pipe on Havant Road caused widespread disruption to the water supply on the Island, affecting a reported 8,000 residents. Portsmouth Water repaired all damages later that day. The incident was found to be caused by the failure of a Pressure Controlling Valve which led to the subsequent burst¹⁰.
- 12.4.37 In April 2019 a burst sewer on Fishery Lane, Hayling Island spilled 'unpleasant' debris onto the road.
- 12.4.38 In December 2024 around 58,000 properties across Hampshire were without water following a fault at a supply works¹¹.

Major Fire

- 12.4.39 No known fires have occurred at the Site.
- 12.4.40 In April 2016 a severe house fire occurred at a property on Church Road.
- 12.4.41 In September 2021 a house fire at Bacon Lane, Hayling Island resulted in one casualty. Firefighters from Hayling Island, Cosham, Emsworth and Southsea attended the scene.
- 12.4.42 In June 2023, a fire at a workshop on Havant Road, Hayling Island led to the destruction of the one-storey building. 35 firefighters from Hayling Island, Havant, Gosport, Hightown and Eastleigh attended the scene¹².

¹⁰Hayling Island burst pipe: Water supply restored and Havant Road open. The News. Available at: <https://www.portsmouth.co.uk/news/people/hayling-island-burst-pipe-water-supply-restored-and-havant-road-open-1314311>

¹¹Hampshire water outage likely to last until weekend. BBC. Available at: <https://www.bbc.co.uk/news/articles/cr4reyppg10vo>

¹² Hayling Island workshop blaze tackled by Hampshire crews. Hampshire & Isle of Wight Fire & rescue Service. Available at: <https://www.hantsfire.gov.uk/incident/hayling-island-workshop-blaze-tackled-by-hampshire-crews/>

Chemical and Biological Contamination

- 12.4.43 The Site is currently in agricultural use and therefore there is not likely to be any significant sources of contamination on Site.
- 12.4.44 A Preliminary Geo-Environmental Risk Assessment was prepared in support of the previous application upon the Site. Reference should be made to the Preliminary Geo-Environmental Risk Assessment Report submitted in support of the application for full details of the environmental setting.
- 12.4.45 The assessment found that ‘there are negligible risks associated with land quality at the site. Any contamination is likely to be localised and would be addressed during development, probably through the use of a clean capping. If hydrocarbons are encountered below the tank these would be expected to be limited in extent and so can be removed’.
- 12.4.46 Over recent years concerns have been raised over water pollution on Haying Island. It is noted that Southern Water, under discharge consents, use “storm overflows” to discharge waste, during periods of intense rainfall, around Hayling Island.

Natural and Environmental Hazards

Severe Space Weather

- 12.4.47 The UK Severe Space Weather Preparedness Strategy (2021)¹³ reports that historic severe space weather events have caused widespread and significant impacts. The Carrington Storm of 1859, and another storm in May 1921, are understood to be the most severe space weather events in recent history and caused widespread disruption of telegraph and telephone communications. Since then, smaller-scale events have occurred that have caused disruption to different sectors including Electricity Distribution in Canada, Scandinavia and South Africa; Telecommunications: in the United States; Transport (air traffic); and Satellite Systems and Services over Europe.
- 12.4.48 As noted within the National Risk Register 2020 edition the UK aviation sector lost some GPS functions for a day, in 2003, due to a space weather event storm. Records

¹³UK Severe Space Weather Preparedness Strategy (2021). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1020551/uk-severe-space-weather-preparedness-strategy.pdf

also show that solar storms experienced in 1921, 1960 and 1967 led to widespread radio disruption and impacts on railway signalling and switching systems.

- 12.4.49 GOV.UK reports that the UK is currently experiencing a maximum, with solar activity at its highest level in more than 2 decades. The ‘Mothers’ Day Storm’ in May 2024, which produced aurora visible across southern England, was the strongest solar storm since 2003 to hit the Earth’s upper atmosphere¹⁴.

Storms

- 12.4.50 The 2025 National Risk Register reports that ‘Climate change has already altered the risk of certain types of extreme weather in the UK, with evidence suggesting that the frequency and intensity of storms is likely to increase in the future. The UK has experienced several severe storms over the last few years, including Storm Eunice in 2022, which brought gusts in excess of 100mph. The impacts of the storm across the UK included 3 fatalities, school closures, power cuts and nationwide cancellations of transport services’.
- 12.4.51 The latest UK State of Climate Report states that ‘*the UK annual mean wind speed from 1969 to 2023 shows a downward trend, consistent with that observed globally*’¹⁵. 2023 was comparable in storminess compared to recent decades. However, it is noted that the 2023–2024 storm season had its most active start with respect to the number of named storms since storm naming was introduced in 2015, with seven named storms (Agnes to Gerrit) from September to December. It has also been found that near surface wind speeds have increased over the UK for the second half of the 21st century for the winter season when more significant impacts of those winds are experienced¹⁶.
- 12.4.52 Hayling Island’s Langstone Bridge was briefly closed on 18th February 2022 due to concerns for the safety of vehicles and pedestrians crossing the bridge following an

¹⁴What is space weather, and why are we monitoring it? UK Health Security Agency. Available at: <https://ukhsa.blog.gov.uk/2025/03/13/what-is-space-weather-and-why-are-we-monitoring-it/>

¹⁵State of the UK Climate. Met Office. Available at: <https://www.metoffice.gov.uk/research/climate/maps-and-data/about/state-of-climate>

¹⁶UKCP18 Factsheet: Wind. Met Office. Available at: https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-fact-sheet-wind_march21.pdf

unusually high tide combined with the storm conditions caused by Storm Eunice¹⁷, described as the most powerful and damaging storm of the year. Hayling Island's West Beach sea defences suffered damage as a result of Storms Ciara and Dennis in 2020. In addition, a 'tornado' damaged around 100 homes along Blackthorn Road and Ilex Walk, located on the southeastern extent of the island, in October 2013¹⁸. No injuries were reported in either instance.

- 12.4.53 In October 2024 it was reported that winds caused trees to fell, roof tiles to fall and boats to be upturned in parts of Emsworth and Hayling Island.

High Temperatures and Heatwaves

- 12.4.54 The Intergovernmental Panel on Climate Change (IPCC) predict that temperature extremes will increase more rapidly than global mean surface temperature, with the number of hot days projected to increase in most land regions. In the 1.5°C warming scenario heat waves in mid latitudes could warm by up to 3°C.
- 12.4.55 As reported in the 2023 UK State of the Climate report, 2023 was the second warmest year on record for the UK in the series from 1884, with only 2022 warmer. Six years in the most recent decade (2014-2023) have been within the top-ten warmest in the series. Observations show that extremes of temperature in the UK have been affected much more than average temperature. The number of 'hot' days (28°C) has more than doubled and 'very hot' days (30°C) more than trebled for the most recent decade (2014-2023) compared to 1961-1990. The report further highlights that the UK's second warmest year of 2023, the warmest June and the September heatwave were all made more likely by climate change.
- 12.4.56 A review of Meteorological Office climate data¹⁹ shows that average annual temperatures within the southeast of England and average temperatures during the summer months have increased during the latter half of the decade.

¹⁷Storm Eunice: Langstone bridge closes trapping residents on Hayling Island. ITV NEWS. Available at: <https://www.itv.com/news/meridian/2022-02-18/storm-eunice-langstone-bridge-closes-trapping-residents-on-hayling-island>

¹⁸Hayling Island properties hit by 'tornado'. BBC. Available at: <https://www.bbc.co.uk/news/uk-england-24601190>

¹⁹ Monthly, seasonal and annual mean air temperature for England SE and Central S, Met Office National Climate Information Centre: metoffice.gov.uk/pub/data/weather/uk/climate/datasets/Tmean/ranked/England_SE_and_Central_S.txt

Low Temperatures and Snow

- 12.4.57 It has been observed the spring snow cover has been continuing to decrease in extent in the Northern Hemisphere and that cold temperature extremes are projected to decrease along with the number of frost days.
- 12.4.58 The 2023 State of the UK Climate report highlights that widespread and substantial snow events have occurred in 2009, 2010, 2013, 2018 and 2021, but their number and severity have generally declined since the 1960s. The report further highlights that the most recent decade (2014–2023) has had almost a week fewer air frosts per year than the 1991–2020 average and over a fortnight fewer than 1961–1990 and that the most recent decade (2014–2023) has had over a week fewer ground frosts per year than the 1991–2020 average and almost a month fewer than 1961–1990.
- 12.4.59 While there were some snow events in 2023, overall this was still a much less snowy year than most other years since the 1960s. Accidents, road closures and transport disruption occurred across many parts of the UK during winter 2021 as a result of widespread frost and snow brought by Storm Darcy, although most central and western parts of the UK sheltered from the east remained snow free. The 2025 National Risk Register highlights that *'the UK experienced a spell of severe winter weather with very low temperatures and significant snowfall. This event became known as 'The Beast from the East' in the media and led to widespread impacts across the UK, including disruptions to transport services, school closures and power cuts'*.

Flooding

- 12.4.60 A summary of the baseline conditions can be found below with further details found in the Water Environment chapter (Chapter 10) and Flood Risk Assessment (FRA) (Appendix 10.4).
- 12.4.61 As set out in Chapter 10:
- The risk of fluvial flooding is assessed as negligible, but there is however a residual risk of flooding from the onsite and bounding land drains.
 - The risk of tidal flooding is assessed as negligible for the Proposed Development.

- The risk of groundwater flooding is assessed as negligible above ground but low below ground due to perched groundwater within the superficial River Terrace deposits.
- The risk of surface water flooding is assessed as negligible for most of the Site, with areas of low risk associated with surface water ponding within the Site.
- The risk of sewer flooding is assessed as negligible for most of the Site and low along the reaches of the identified assets.
- The risk of flooding from pond failure is assessed as low.

12.4.62 As identified in the FRA, there is also a low risk of tidal flooding associated with the access/egress points to the A3023 Langstone Bridge. Full details of flood risk and mitigation can be found within the FRA.

Drought

12.4.63 The latest UK Climate Projections (UKCP18) predicts a trend towards drier summers on average along with an increase in the frequency and intensity of extremes.

12.4.64 The Environment Agency (EA) and water companies have comprehensive systems in place to monitor rainfall and water resources, and national coordination plans are in place through the EA and the Department for Environment, Food and Rural Affairs, overseen by the National Drought Group. A range of regulatory restrictions, including limiting the amount of water that farmers and businesses are allowed to abstract from rivers, and consumer communication campaigns to encourage reducing water consumption can help to make water supplies last as long as possible. Water companies may also consider Temporary Usage Bans to manage water resources.

12.4.65 Periods of drought have occurred previously on Hayling Island, such as in August 2022, when an extended period of dry weather led to all of Hampshire, and the Isle of Wight, announced as being in a state of drought. In response, water companies including Southern Water announced strict measures to conserve water supplies, including the implementation of a hosepipe ban²⁰.

²⁰UK heatwave: Hampshire and Isle of Wight officially in drought. BBC. Available at:
<https://www.bbc.co.uk/news/uk-england-hampshire-62521106>

Poor Air Quality

- 12.4.66 As identified within the Air Quality Chapter (Chapter 6) there are currently no existing Air Quality Management Areas (AQMAs) declared within the HBC administrative area.
- 12.4.67 A review of the latest Annual Status Report (ASR) for HBC (2024) has been undertaken in Chapter 6. It is noted that majority of the monitoring locations measured annual mean NO₂ concentrations below the annual mean NO₂ objective (i.e. 40µg/m³), during the last few years. Therefore, air quality within HBC is considered generally good. From the data provided in the 2024 ASR, it is also noted that measured NO₂ concentrations are either broadly stable or reducing across the district.
- 12.4.68 Baseline concentrations have also been modelled within Chapter 6. The results show that all predicted NO₂, PM₁₀ and PM_{2.5} concentrations are below the relevant objectives and limit values in both the 2023 (Base Year) and 2035 Opening Year/Future Year (without Proposed Development) scenarios.

Human, Animal and Plant Health

Pandemic

- 12.4.69 The COVID-19 pandemic has resulted in a global loss of life. At the time of writing, worldwide there has been a recorded 778 million cases and 7.1 million deaths. In the UK there has been a reported 25million cases and 232,000 deaths with COVID-19 on the death certificate²¹.
- 12.4.70 As a result of the COVID-19 pandemic the UK has flexible pandemic response capabilities that are built on lessons learned. The National Risk Register Notes that '*Pandemics are usually the result of a novel pathogen (virus, bacteria, fungi or other organisms that cause disease) emerging and spreading quickly around the world due to lack of population immunity*'.

Outbreak of an Emerging Infectious Disease

- 12.4.71 The UK Health Security Agency (UKHSA) data dashboard, launched in September 2023, displays public health data across England, presenting data on respiratory

²¹WHO COVID-19 dashboard. World health Organization. Available at:
<https://data.who.int/dashboards/covid19/circulation?n=c>

viruses and in the future will present a wider range of public health data relating to incidents of public interest²².

12.4.72 As reported by GOV.UK²³ the latest notable outbreak of diseases in humans in the UK was the Avian influenza A (H5N1) in 2022. Prior to that a tick-borne encephalitis was identified in 2019. Both of these were pre-existing diseases and had been identified in a new area.

12.4.73 The UKHSA also publishes monthly research and analysis that provides regular updates on new or emerging infectious disease events that could affect UK public health. The most recent publication, updated April 2025, has identified one notable disease incident in the UK. This comprised of one confirmed case of influenza A(H1N2)v, the first detection of this strain in a human in the UK. Although the virus was similar to those detected in pigs in England, no direct contact between the case and any animal was reported. The case has fully recovered. No further cases were detected during contact follow-up²⁴.

12.4.74 Emerging infectious diseases continue to be under surveillance and monitored for animal and human health by the UKHSA.

Animal Disease

12.4.75 The Site is not currently occupied by any livestock.

12.4.76 It is noted that the Hampshire and Isle of White Community Risk Register highlights Avian Influenza in wild birds as a very high risk to the area. Several species of birds use the Site which may be susceptible to avian influenza. Avian influenza is primarily a disease of birds, but can be transmissible to humans through prolonged, direct contact with infected birds or contaminated material.

Future Baseline

12.4.77 Where relevant future baseline predictions have been considered above (i.e. climate change predictions associated with temperature increases).

²²UKHSA data dashboard. GOV.UK. Available at: <https://ukhsa-dashboard.data.gov.uk/>

²³Emerging infections: how and why they arise. GOV.UK. Available at: <https://www.gov.uk/government/publications/emerging-infections-characteristics-epidemiology-and-global-distribution/emerging-infections-how-and-why-they-arise>

²⁴ Infectious disease surveillance and monitoring for animal and human health: summary November 2023. UK Health Security Agency. Available at: <https://www.gov.uk/government/publications/emerging-infections-monthly-summaries/infectious-disease-surveillance-and-monitoring-for-animal-and-human-health-summary-november-2023#Influenza-A>

12.4.78 In a scenario where the Proposed Development is not constructed, the risk to and from a major accident and disaster is expected to continue as per the baseline in the short term, although risk may increase due to climate change over time.

12.4.79 Future baseline conditions associated with other technical disciplines are set out in Chapters 6 – 11 of this ES.

Sensitive Receptors

12.4.80 The Assessment of Effects Part 1 considers the potential for the Proposed Development to cause/make worse a major accident or disaster. It acts as an extension to the scoping stage detailed in section 12.3 whereby a risk level is applied for each accidents/ disaster scoped into the assessment based on the potential for one to be caused or made worse. No sensitive receptors are therefore considered within Part 1.

12.4.81 Sensitive receptors considered to be at risk from a major accident or disaster (Assessment of Effects Part 2) are:

- emergency services;
- built infrastructure;
- members of the public and local communities (including future users of the Site) (human health); and
- the natural environment, including ecosystems, climatic systems, land and soil quality, air quality, surface and groundwater resources and landscape, and the historic environment, including archaeology and built heritage.

Limitations

12.4.82 Baseline conditions have been informed by the technical chapters of this ES. As such relevant limitations detailed in Chapters 6 to 11 are relevant to this chapter.

12.4.83 Third party information has been used in the preparation of this Chapter including information from news outlets, and an assumption is made that such information is correct at the time of writing. Whilst all reasonable checks have been made on data sources, WA accepts no liability for any limitations/discrepancies in the presented baseline.

12.4.84 In addition to the Legislation and Guidance detailed above there are numerous other safety related UK Regulations and guidance documents for specific aspects. This

assessment relies on the operator undertaking the relevant aspect of works to comply with all relevant regulations.

12.5 Assessment of Effects

Design Solutions and Assumptions

- 12.5.1 It is acknowledged that at the Proposed Development's current stage of planning, details of construction have not yet been fully defined, as such standard practice and regulatory compliance are assumed to be implemented/followed.
- 12.5.2 It is also assumed that the Proposed Development will include for engineering and enabling works in some capacity to prepare the Site. These will occur prior to construction of any build development, however for the purpose of this chapter the engineering and enabling works are considered to occur during the construction phase.
- 12.5.3 It is assumed that the enabling works would comprise:
- Utility diversions where necessary; and
 - Cut and fill operations to establish level platforms where necessary.
- 12.5.4 Whilst the development may be phased, in order to provide a worst-case assessment the assessed operational phase comprises the complete development.
- 12.5.5 Utilities Plans have been provided for the Site. It is assumed that where these plans do not illustrate infrastructure (i.e. fuel infrastructure) that such is not present on the Site.
- 12.5.6 Where relevant risk specific assumptions are detailed in the assessment of effects below.

Stage 1: Screening

- 12.5.7 As per IEMA's Primer where there is any uncertainty as to an event's potential to cause a significant environmental effect, a major accident and/or disasters assessment should be scoped in.
- 12.5.8 HBC have requested the inclusion of a Vulnerability to Major Accidents and Disasters chapter within the ES and therefore the topic has been scoped in.

Stage 2: Identification of Scope / Associated Risk

- 12.5.9 The baseline conditions at the Site are as set out within section 12.5 of this chapter.

12.5.10 The Risk Table included at Appendix 12.1 identifies the risks that are and are not applicable to the Proposed Development.

Stage 3: Assessment of Effects

12.5.11 The assessment has followed a two-part approach considering the potential for the Proposed Development to, where relevant:

- Part 1: cause/make worse a major accident or disaster; and
- Part 2: be affected by the major accident or disaster.

Part 1: cause/make worse a major accident or disaster

12.5.12 Due to the nature and location of the Proposed Development, there will be no increased risks to the following major events:

- Accidents and systems failures
 - Major maritime pollution incident
- Natural and environmental hazards
 - Severe space weather
 - Storms
 - High temperatures and heatwaves
 - Low temperatures and snow.

12.5.13 Where there is potential for the Proposed Development to cause/make worse a major accident or disaster this has been assessed below.

Terrorism

Terrorist attacks in venues and public spaces: explosive devices

12.5.14 The Proposed Development has received local media attention and is of public knowledge. It is assumed such attention will continue to occur.

12.5.15 As detailed in Chapter 11: Rights of Way, Access and Recreation, there are public rights of way that run along the site's northern and western boundaries, although no rights of way crossing the main body of the site itself. Therefore the Site is not currently accessible to the public. Pedestrian and Cycle routes are however proposed across the Site which will connect to the three public footpaths that run along the Site boundaries. To ensure a worst-case scenario is assessed it is assumed

that these new footpaths could be accessible during earlier phases of the development and therefore during the construction of later phases.

- 12.5.16 It is recognised that, Hayling Island is a popular tourist destination and is well provisioned when it comes to recreational opportunities. Many of these are within walking distance of the Site therefore it is anticipated that these footpaths could be used regularly. It is also acknowledged that terrorist attacks can be religiously motivated, and St Mary's Church is located in close proximity to the Site.
- 12.5.17 Owing to the above, the risk of a terrorist attack involving the Proposed Development during both the construction and operation phase could not be ruled definitively out. It should be noted that such event could occur anywhere in the UK.
- 12.5.18 To minimise the risk of an attack, during both construction and operation, the Proposed Development will follow government security guidelines. Measures incorporated will include the production of a suitable risk assessment to determine potential threats and their likelihood; security onsite; a minimisation of access points; and the installation of appropriate physical measures such as barriers, locks, alarms, CCTV surveillance.
- 12.5.19 It should also be noted that the UK government continues to reduce vulnerability to an explosive attack, through restricting access to explosives precursor chemicals, improving detection capabilities including the introduction of National Canine Training and Accreditation Scheme for Private Companies, and maintaining an understanding of the explosive materials and methods that pose a risk in the UK²⁵.
- 12.5.20 The Hampshire and Isle of Wight LRF highlights that terrorist '*attacks are rare*' and '*Police and security service have been working constantly to foil terrorist attacks for years, not months*'.
- 12.5.21 With consideration of the above the risk of an explosive devices attack is considered to be **very low**.

Terrorist attacks in venues and public spaces: marauding attacks

- 12.5.22 The Proposed Development has received local media attention and is of public knowledge. It is assumed such attention will continue to occur.

²⁵National Risk Register - 2025 edition

- 12.5.23 As detailed in Chapter 11: Rights of Way, Access and Recreation, there are public rights of way that run along the site's northern and western boundaries, although no rights of way crossing the main body of the site itself. Therefore the Site is not currently accessible to the public. Pedestrian and Cycle routes are however proposed across the Site which will connect to the three public footpaths that run along the Site boundaries. To ensure a worst-case scenario is assessed it is assumed that these new footpaths could be accessible during earlier phases of the development and therefore during the construction of later phases.
- 12.5.24 It is recognised that, Hayling Island is a popular tourist destination and is well provisioned when it comes to recreational opportunities. Many of these are within walking distance of the Site therefore it is anticipated that these footpaths will be used regularly. It is also acknowledged that terrorist attacks can be religiously motivated, and St Mary's Church is located in close proximity to the Site.
- 12.5.25 Owing to the above, the risk of a terrorist attack involving the Proposed Development during both the construction and operation phase could not be ruled definitively out. It should be noted that such event could occur anywhere in the UK.
- 12.5.26 To minimise the risk of an attack, during both construction and operation, the Proposed Development will follow government security guidelines. Measures incorporated will include the production of a suitable risk assessment to determine potential threats and their likelihood; security onsite; a minimisation of access points; and the installation of appropriate physical measures such as barriers, locks, alarms, CCTV surveillance.
- 12.5.27 It is also noted that the government reduces vulnerability to a marauding terrorist attack through a programme of support for venues, public places and specific sectors. This includes free advice, guidance and training through ProtectUK.
- 12.5.28 The Hampshire and Isle of Wight LRF highlights that terrorist 'attacks are rare' and 'Police and security service have been working constantly to foil terrorist attacks for years, not months'.
- 12.5.29 With consideration of the above the risk of a marauding attack is considered to be **very low**.

Conventional or Cyber attack: gas and electricity infrastructure

- 12.5.30 The Proposed Development is of public knowledge locally. It is assumed such attention will continue to occur. Utility infrastructure located on Site and in the surrounding area could therefore be a target of a conventional or cyber attack. The reasonable worst-case scenario following an attack would be casualties and fatalities from a lack of heating, access to necessary medical treatment, exacerbation of an existing condition or limited ability to use gas-fired cookers safely and an initial regional power cut. It is also noted that a National Power Outage could lead to impacts such as civil unrest; and disruption to businesses, schools and public buildings.
- 12.5.31 Plans provided to date, and assumptions made, consider the Site to be void of any utility infrastructure of major importance (i.e. power stations or utility storage infrastructure). The Proposed Development also does not comprise any utility infrastructure of major importance. Where infrastructure is to be laid/ erected on Site suitable security measures will be implemented, such as fencing, to ensure such is not accessible to the general public. Therefore, the probability of the Site becoming a target for such an attack is very low.
- 12.5.32 With consideration of the above the risk of the Proposed Development causing or making worse a conventional or cyber attack upon gas and electricity infrastructure is considered to be **very low**.

Making worse a major accident or disaster

- 12.5.33 As reported above the risk of the Proposed Development causing a terrorism related attack is no more than very low. With regards to 'making worse' an attack owing to the Proposed Development's nature should an attack occur within the local area there is potential for the Site to be utilised as a temporary 'safe space' given it comprises permanent residential facilities.
- 12.5.34 Considering the above and the nature of a terrorism related event/attack the Proposed Development will not result in an event worsening.

Cyber

- 12.5.35 This risk has been included as the Hampshire and Isle of Wight LRF considers Cyber Attacks as a risk to the area. Consideration has been given to such an attack upon

the health and social care system, transport sector, and telecommunications systems.

- 12.5.36 The Proposed Development will not comprise such infrastructure nor is it considered to exacerbate the probability of a cyber attack due to its nature.
- 12.5.37 It should be noted that the UK Government has set the ambitious vision that all government organisations across the whole public sector will be resilient to known vulnerabilities and attack methods no later than 2030. They have prepared the Government Cyber Security Strategy: 2022 to 2030 which sets out their approach to building a cyber resilient public sector. This strategy looks to manage, protect, detect and develop cyber security. An assumption can therefore be made that the UK Government and operators will have the necessary measures in place to reduce the probability of such an event occurring.
- 12.5.38 The infrastructure that makes up the island access road is of a nature that cannot be subject to a substantial cyber attack. Its current use would therefore not be hindered.
- 12.5.39 With consideration of the above the risk of the Proposed Development causing or making worse a cyber attack is considered to be **very low**.

Accidents and systems failures

Highway accident

- 12.5.40 There is a potential for effects on highway safety caused by the increase in traffic flow as a result of the Proposed Development.
- 12.5.41 A review of road safety has been undertaken in the Transport Assessment (Appendix 8.1). Such found that there does not appear to be a pattern or common cause to the accidents that have taken place both locally to the Site and in the study area as a whole.
- 12.5.42 As reported in Chapter 8 (Transport) '*Multiple causation factors have been noted with driver error being the main factor in the vast majority of accidents. The number of accidents is not unusually high given the extent of this study area and the volume of traffic. Analysis of the overall accident data indicates that the design and layout of the local highway network would not in itself appear to be an overriding factor in the cause of the accidents*'.

- 12.5.43 A Construction Traffic Management Plan (CTMP), or similar, will be prepared for the Proposed Development. This will include measures to reduce the impact of construction traffic on the local highway network such as ensuring that traffic to/from the Site adheres to the agreed routes to ensure traffic nuisance is not inadvertently caused. The CTMP will be a live document that can be regularly updated to address any unforeseen issues that may arise.
- 12.5.44 The Site access has been designed in accordance with current national and local design standards so there is no reason to suggest that accidents will increase, or safety will be compromised as a result of the development proposals. It has also been subject to an independent Stage 1 Road Safety Audit (see TA (Appendix 8.1)).
- 12.5.45 Parking provision on Site will adhere to HBC's relevant parking standards and guidelines.
- 12.5.46 With consideration of the above it is considered that the risk of transport accidents as a result of the Proposed Development is **very low**.

Failure of the National Electricity Transmission System (NETS) and Regional failure of the electricity network

- 12.5.47 Utilities Plans prepared by Scottish and Southern Energy (SSE) indicate there are underground and overhead electricity cables/lines within the northeast of the Site.
- 12.5.48 Failure of the NETS could cause a nationwide loss of power. A nationwide loss of power would result in secondary impacts across critical utilities networks (including mobile and internet telecommunications, water, sewage, fuel and gas). This would cause significant and widespread disruption to public services provisions, businesses and households, as well as loss of life.
- 12.5.49 Construction activities of the Proposed Development have the potential to disrupt electrical infrastructure on Site and within the surrounding network likely through physical damage via activities such as piling, and vehicle strikes. During the construction phase suitable precautions will be considered in the locations of planned work. Such considerations include not building directly over utility mains; establishing exclusion zones either side of a main, not piling or drilling within a suitable radius without approval; use of goalpost barriers; and restricting heavy plant from crossing existing mains. Should a utility main be compromised in any way a contingency plan will be produced.

- 12.5.50 A suitable routing plan, or similar, will also be in place during the construction phase of the Proposed Development. This will ensure all overhead and underground mains/lines will not be impacted upon by additional HGV movements brought about by the Proposed Development.
- 12.5.51 Should diversions of existing infrastructure be required as part of the construction phase these will be undertaken in line with best practise and appropriate safety easements will be implemented. The diversion of such would be undertaken by a suitable contractor who will adhere to a relevant risk assessment when undertaking the works.
- 12.5.52 In addition to the above, service providers run mock incident simulations annually to prepare for emergency situations. During such simulations the providers work collaboratively to provide the necessary actions/ response.
- 12.5.53 The risk that construction activities will cause/make worse a NETS or electricity network failure is therefore considered to be **low**. Any failure would be temporary.
- 12.5.54 During the operational phase electrical infrastructure will be located on Site to feed the proposed dwellings. It is anticipated that such will be laid appropriately in line with good practice, for example at a suitable depth, to avoid any accidental damage by future residents or site users. Should above ground infrastructure be necessary appropriate security measures, such as fencing will be implemented/ erected to ensure they are not accessible by the general public. The infrastructure would be maintained by the National Grid and Scottish & Southern Electricity Networks.
- 12.5.55 The risk that operation of the Proposed Development will cause/make worse a NETS or electricity network failure is therefore considered to be **low**. Any failure would be temporary.

Failure of gas supply infrastructure

- 12.5.56 Utilities plans provided illustrate no gas supply infrastructure is present on Site however such is located in the surrounding area.
- 12.5.57 As reported in the National Risk Register 2025 the reasonable worst-case scenario is based on a technical failure or accident causing a significant loss of UK gas supplies in winter. Such could result in casualties and fatalities from a lack of heating, access to necessary medical treatment, exacerbation of an existing condition, or limited ability to use gas-fired cookers safely.

- 12.5.58 Activities associated with the construction phase of the Proposed Development have the potential to disrupt gas infrastructure on Site, including to new gas infrastructure that will be laid prior to the construction of the proposed dwellings, and within the surrounding network; likely through physical damage via activities such as piling, and vehicle strikes. During the construction phase suitable precautions will be considered in the locations of planned work. Such considerations include not building directly over utility mains; establishing exclusion zones either side of a main, not piling or drilling within a suitable radius without approval; use of goalpost barriers; and restricting heavy plant from crossing existing mains. Should a utility main be compromised in any way a contingency plan will be produced.
- 12.5.59 A suitable routing plan, or similar, will also be in place during the construction phase of the Proposed Development. This will ensure infrastructure will not be impacted upon by additional HGV movements brought about by the Proposed Development.
- 12.5.60 Should diversions of existing infrastructure be required as part of the construction phase these will be undertaken in line with best practice and appropriate safety easements will be implemented. The diversion of such would be undertaken by a suitable contractor who will adhere to a relevant risk assessment when undertaking the works.
- 12.5.61 The risk that construction activities will cause/make worse a gas supply infrastructure failure is therefore considered to be **low**. Any failure would be temporary.
- 12.5.62 During the operational phase of the Proposed Development gas infrastructure will be located on Site to feed the proposed dwellings. It is anticipated that such will be laid appropriately in line with good practice, for example at a suitable depth, to avoid any accidental damage by future residents or site users. Should above ground infrastructure be necessary appropriate security measures, such as fencing will be implemented/ erected to ensure they are not accessible by the general public. The infrastructure would be maintained by National Gas.
- 12.5.63 The risk that operation of the Proposed Development will cause/make worse a gas supply infrastructure failure is therefore considered to be **low**. Any failure would be temporary.

Water infrastructure failure or loss of drinking water

- 12.5.64 Utilities Plans provided by Southern Water and Portsmouth Water indicate that there is no water infrastructure on the Site. Such infrastructure is however located in the surrounding area and will be placed on Site to support the proposed residential dwellings.
- 12.5.65 As reported in the National Risk Register a sudden loss of piped water supply, or the degradation of the piped supply may result in the water becoming unfit for human consumption even after boiling. The loss of water could have knock-on consequences to the functioning of essential services such as schools, hospitals and prisons until alternative water supplies are provided or supply is restored.
- 12.5.66 Construction activities of the Proposed Development have the potential to disrupt the water infrastructure on Site, as it is anticipated that the proposed infrastructure to feed the proposed dwellings will be laid prior to construction of the dwellings, and within the surrounding network; likely through physical damage via activities such as piling, and vehicle strikes. During the construction phase suitable precautions will be considered in the locations of planned work. Such considerations include not building directly over utility mains; establishing exclusion zones either side of a main, not piling or drilling within a suitable radius without approval; use of goalpost barriers; and restricting heavy plant from crossing exiting mains. Should a utility main be compromised in any way a contingency plan will be produced.
- 12.5.67 A suitable routing plan, or similar, will also be in place during the construction phase of the Proposed Development. This will ensure all underground mains will not be impacted upon by the additional HGV movements brought about by the Proposed Development.
- 12.5.68 Should diversions of existing infrastructure be required as part of the construction phase these will be undertaken in line with best practise and appropriate safety easements will be implemented. The diversion of such would be undertaken by a suitable contractor who will adhere to a relevant risk assessment when undertaking the works.
- 12.5.69 In addition to the above, service providers, the broader water sector and the Environment Agency have numerous robust contingency plans in place to mitigate against a range of water supply incidents including the regional and water resources management plans which are produced through a strategic collaboration across

regional water providers. These plans include mutual aid capability across water companies and the provision of alternative water supplies, which would prioritise the most vulnerable communities.

- 12.5.70 It is also acknowledged that service providers, including Southern Water, run mock incident simulations annually to prepare for emergency situations. During such simulations the providers work collaboratively to provide the necessary actions/response.
- 12.5.71 The risk that construction activities will cause/make worse water infrastructure failure or loss of drinking water is therefore considered to be **low**. Any failure would be temporary.
- 12.5.72 During operation water infrastructure will be located on Site to feed the proposed dwellings. It is anticipated that such will be laid appropriately in line with good practice, for example at a suitable depth, to avoid any accidental damage by future residents or site users. Should above ground infrastructure be necessary appropriate security measures, such as fencing will be implemented/ erected to ensure they are not accessible by the general public. It is anticipated that the infrastructure would be maintained by Southern Water and Portsmouth Water.
- 12.5.73 The risk that operation of the Proposed Development will cause/make worse a water infrastructure failure or loss of drinking water is therefore considered to be **low**. Any failure would be temporary.

Major fire

- 12.5.74 Construction of the Proposed Development will include sources of ignition, such as plant and equipment (e.g. fuel and vehicle exhausts), and sources of fuel, such as stored/in-use building products (e.g. composite panels, timber and rubbish). There is potential for sources of heat and fuel to ignite during construction which in turn could lead to a whole structure being involved in a fire. Construction of the Proposed Development will follow standard good practice and a suitable fire risk assessment and fire precautions will be adhered to. The risk assessment will take account of relevant guidance, such as HSE's 'Fire safety in construction' which details measures aimed at reducing the risk of a fire occurring.

- 12.5.75 In addition, there are legal duties under The Construction Design and Management Regulations 2015 for clients, designers, principal designers, contractors to eliminate and control the risks from fire safety on construction projects²⁶.
- 12.5.76 Due to its nature, heat sources such as gas, electric, and potential cooking equipment such as microwaves, will be present within the Proposed Development. There is potential for this equipment to catch fire or explode. There is also potential for an increased risk of fire from overheating due to increased fabric efficiency and incorrect implementation.
- 12.5.77 The Proposed Development will be built to national fire regulations and to have the standards of fire protection required by Building Regulations. The Proposed Development will include the use of linings, materials and finishes that limit the release of heat. Good design will reduce the risk of fire significantly.
- 12.5.78 It is also recognised that Hayling Island Fire Station is located c.150m away from the Site. Therefore, it is considered that there would be a short emergency response time, should a fire occur on the Site, which would decrease the risk of an incident constituting a major fire.
- 12.5.79 Owing to the above the risk of a fire occurring, as a result of the Proposed Development, during construction and operation is considered to be **low**.

Chemical and Biological Contamination

- 12.5.80 Construction of the Proposed Development has the potential to mobilise and migrate contaminants through, for example, excavation and movement of soils, the production of construction wastes and materials, and the generation of dust. There is also a potential for the release of contaminants from spillages of substances (e.g., fuels and oils) due to earthworks. These in turn could have an impact upon human health, the natural environment (i.e. surface water), and the built environment (i.e. Water Supply Pipes).
- 12.5.81 During construction a Construction Environmental Management Plan (CEMP) will be produced and implemented. The CEMP will include (but is not limited to) information pertaining to the location and characteristics of any contaminated material, as well as appropriate working methods and site management in

²⁶Construction – Fire. Health and safety Executive. Available at: <https://www.hse.gov.uk/construction/faq-fire.htm>

accordance with current best practice and identify appropriate Personal Protective Equipment (PPE). The CEMP will also include measures to minimise where practicable production of silt and contaminated water.

- 12.5.82 Measures will also be implemented, during construction, to minimise dust generation; manage surface water run off/ drainage; control contamination from leaks and spills from vehicles / storage; minimise where practicable production of silt and contaminated water; and ensure the prevention of sediment and pollutants entering nearby watercourses. Such measures may include but are not limited to damping-down work areas during periods of dry weather and sheeting of stockpiles and lorries where appropriate; removal and safe disposal of leaking or empty oil drums via a licensed waste disposal contractor; adequate on-site availability of oil spill clean-up equipment; appropriate training of site personnel in the handling and use of potentially dangerous substances, and associated risks; and utilising plant and wheel washing. The specific details of these will likely be determined by occupational health and safety specialists and will be specified in site health and safety documentation prior to the construction phase (e.g. a Pollution Incident Control Plan).
- 12.5.83 As reported in the Preliminary Geo-Environmental Risk Assessment Report 'there are negligible risks associated with land quality at the site. Any contamination is likely to be localised and would be addressed during development, probably through the use of a clean capping. If hydrocarbons are encountered below the tank these would be expected to be limited in extent and so can be removed'. Should unexpected, localised contamination be encountered during development works these will be addressed as part of the site development works through such measures as a discovery strategy, with source removal and off-site disposal being likely to be the most appropriate remedial action.
- 12.5.84 The assessment also dismissed the risk of ground gas due to no source being identified. This will be verified by a site investigation. If a risk is identified, this can be mitigated through the use of conventional gas membrane and underfloor ventilation.
- 12.5.85 Operation of the Proposed Development could facilitate the potential to encounter made ground, contaminated soils, ground gas; and contamination pathways to the

water environment (i.e. leaks and spills in the form of oil/fuel and household chemicals such as detergents).

- 12.5.86 Further investigations will be undertaken to provide design information for future development works post-consent. This will likely be covered by a suitably worded condition. These will inform construction methods to be used. If required mitigation and remediation measures will be implemented. It is assumed that as a matter of construction quality, structures will be designed and built on foundations constructed using an appropriate concrete specification for the ground conditions, throughout their operational life-time.
- 12.5.87 Owing to the above the risk of a chemical and/or biological contamination event occurring, as a result of the Proposed Development, during construction and operation is considered to be **low**.

Natural environmental hazards

Flooding

- 12.5.88 In relation to the assessment below reference should be made to Chapter 10: Water Resources and Appendix 10.4 (Flood Risk Assessment (FRA)).
- 12.5.89 During construction the creation of temporary structures and construction of permanent structures will introduce impermeable areas and increases run off volumes. Permeability may also be decreased due to soil compaction and the regrading of the ground/topography could remove/introduce flow paths and direct flood water to areas previously not at risk of flooding.
- 12.5.90 During operation the creation of low permeability areas such as roads, car parks and roof structures may reduce the ability of the Site to accept rainfall volumes. Hard surfaces and site drainage such as guttering, and highway drainage may also increase the Site sensitivity to rainfall and reduce response time to rainwater reaching the receptor. There is also potential for the Site layout to remove/introduce flow paths and direct floodwater to areas not previously at risk of flooding.
- 12.5.91 As stated in Chapter 10 (Water Environment) 'mitigation measures are designed in to reduce the potential for impacts on Flood Risk'. Such measures include, but are not limited to, set building floor levels +150mm above external levels; no below surface habitable buildings (i.e. basements); adoption of a surface water

management strategy; and undertake maintenance activities to keep the land drains clear from debris and overgrown vegetation to maintain the conveyance of the channels. Reference should be made to section 10.5 of Chapter 10 (Water Environment) for a full list of avoidance and control measures.

- 12.5.92 In addition to the above surface water runoff from the Site will be restricted to greenfield rate (QBAR), which offers a betterment to existing conditions with uncontrolled runoff across all return periods. Surface water runoff from the Proposed Development will also be attenuated on-site up to and including the 1 in 100-year event, plus 45% climate change. A SuDS drainage scheme is proposed to manage excess runoff from the development, comprising two detention basins designed to maintain runoff at pre-development rates, with an outfall to onsite watercourses.
- 12.5.93 It is proposed that foul flows will discharge to the nearby public foul sewer network, via a gravity connection.
- 12.5.94 As stated in the FRA (Appendix 10.4) 'the proposed development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of national policy and guidance'. Owing to the above, and in accordance with the FRA, the risk that the Proposed Development will cause/make worse flooding is considered to be **low**.
- 12.5.95 Access to Hayling Island from the mainland is served by a single road, the A3023. The FRA assesses the risk of tidal flooding to Hayling Island access/egress (Langstone Bridge) as low. Owing to factors such as distance and nature the Proposed Development will not exacerbate the flood risk at the Langstone Bridge. The risk of causing/ making worse a major flood event, at Langstone Bridge, is therefore considered to be **negligible**.

Drought

- 12.5.96 Whilst England is usually a wet country, climate change is likely to bring more uncertainty and may exert increased pressure in areas that have not yet experienced water scarcity during extended periods of dry weather.
- 12.5.97 Activities during both construction and operation will require the use of water. It is assumed that, in accordance with UK Building Regulations and guidance, the Proposed Development will implement best practice measures to manage water efficiency and build resilience such as maintaining equipment in good working order.

- 12.5.98 Where possible all buildings (new, upgrades, or repairs) should go beyond current Building Regulations to improve water efficiency. An assumption is therefore made that the Proposed Development will seek to implement water savings measures during both construction and operation.
- 12.5.99 Should Hampshire/the local area be faced with a drought, the Proposed Development will adhere to any actions/restrictions imposed by Southern Water including those within their Drought Plan (2019). This plan sets out how Southern Water intend to maintain supplies during a period of drought. Such measures include reducing compensation flows, abstracting from additional sources, changing network configuration or using tankers to augment supplies.
- 12.5.100 In addition to the above, service providers, the broader water sector and the Environment Agency have numerous robust contingency plans in place to mitigate against a range of water supply incidents including the regional and water resources management plans which are produced through a strategic collaboration across regional water providers. These plans include mutual aid capability across water companies and the provision of alternative water supplies, which would prioritise the most vulnerable communities.
- 12.5.101 It is also noted that service providers, including Southern Water, run mock incident simulations annually to prepare for emergency situations. During such simulations the providers work collaboratively to provide the necessary actions/response.
- 12.5.102 Owing to the above the risk that the Proposed Development will cause/make worse a drought is considered to be **very low**.

Poor air quality

- 12.5.103 Demolition, earthworks, construction and trackout associated with the construction of the Proposed Development have the potential to cause significant dust effects.
- 12.5.104 Chapter 6 (Air Quality) identified that assuming that no mitigation measures are applied, except those required by legislation;
- The risk of dust soiling effects and human health effects is classed as negligible for demolition;
 - The risk of dust soiling effects is classed as high for earthworks and construction, and medium for trackout; and

- The risk of human health effects is classed as low for earthworks, construction and trackout.

12.5.105 Owing to the fact a number of the above risk categories are above negligible it is considered that without the implementation of effective mitigation measures there is potential for the Proposed Development to cause or make worse a major event associated with air quality. The risk of such is considered to be high prior to the implementation of mitigation measures in relation to poor air quality.

12.5.106 However, it should be noted that the above assessment relates to Step 2C of the construction phase dust assessment (see Chapter 6). The IAQM guidance recommends that effect, in this case risk, should only be assigned after mitigation measures are implemented. This is because EIA influences the design process and therefore significant adverse environmental effects are either avoided or reduced through design before the proposal is finalised, and thus the pre-mitigation impacts are not relevant.

12.5.107 As a result, the risk associated with the construction phase, with mitigation in place, is detailed in section 12.7.

12.5.108 As part of Chapter 6 (Air Quality) an assessment has been undertaken to consider the impacts associated with road traffic emissions during the operational phase. The assessment found that the impact of the Proposed Development on NO₂, PM₁₀ and PM_{2.5} concentrations, at existing sensitive receptors, in the 2035 Opening/Future Year is predicted to be negligible for all receptor locations.

12.5.109 Chapter 6 also found that NO₂, PM₁₀ and PM_{2.5} concentrations within the Site (for PSR 1) are predicted to be below the relevant objectives and limit values.

12.5.110 In addition to the above, the Information to Inform Habitats Regulations Assessment (Appendix 7.2) determined that no significant adverse effect on the designated sites would likely result from traffic-derived air quality impacts or hydrological changes brought about by increased water abstraction. Chapter 7 (Ecology) further states that *'Increased traffic flows resulting from the scale and location of the Proposed Development and wider projected housing growth are capable of giving rise to localised air quality impacts. Areas of each of the Chichester and Langstone Harbours SPA and Ramsar site (and SSSIs), Solent Maritime SAC and Portsmouth Harbour SPA and Ramsar site exist within 200m of a major road (A-road or motorway), and could therefore experience localised increases in atmospheric and deposited pollutants.'*

However, the effects of increased traffic resulting from the Proposed Development in isolation are unlikely to be appreciable, given the intervening distances and diffusion of traffic. Furthermore, findings of air quality dispersion modelling (see Chapter 6 of this ES) found that potentially significant increases in pollutant nitrogen resulting from the Proposed Development, in combination with other committed development, would be limited to a single modelled location within Emsworth Harbour, adjacent to Langstone Road. At this location, however, the habitat is intertidal and regularly inundated with tidal water, with the result that air pollutants are unlikely to be capable of adversely affecting the habitats present, and will therefore result in no significant positive/negative cumulative adverse effect’.

12.5.111 Owing to this the risk of the Proposed Development causing/ making worse the air quality in the surrounding area is considered to be **negligible**.

Human, animal and plant health

Pandemic and Outbreak of an emerging infectious disease

12.5.112 During construction there is potential for the Proposed Development to exacerbate the spread of infectious illnesses. In work environments where many people work closely together infection can be spread through indirect contact with a person with an illness.

12.5.113 During construction of the Proposed Development employees will follow Public Health England and Government guidance for working safely and reducing the risk of respiratory infections including the coronaviruses. It is acknowledged that the UK Health and Security Agency (UKHSA) have published specific guidance for ‘Reducing the spread of infections including COVID-19, in the workplace’. The guidance is aimed at people who are managing a workplace, organisation or premises. In accordance with such guidance a risk assessment will be undertaken during construction of the Proposed Development and sensible precautions and actions to reduce the risk of transmission of respiratory infections including COVID-19 and diseases will be implemented. The risk assessments will be tailored to the phase of work.

12.5.114 With suitable health and safety measures in place, including the use of suitable Personal Protective Equipment (PPE), the risk of spreading disease is considered to be low during construction.

12.5.115 During operation there is potential for the spread of disease as a result of the introduction of a new population on the Site. It is assumed that future users will abide by standard infection control standards such as maintaining personal hygiene including the latest COVID-19 guidance and any future guidance regarding human disease thereby limiting the risk of the spread of disease. The risk is therefore considered to be **very low** during operation.

12.5.116 In addition to the project specific measures outlined above it is noted that the UKHSA alongside Field Services teams and local authorities undertake routine operational and surveillance work to identify and react to new diseases.

Animal disease

12.5.117 The Proposed Development will not house livestock therefore there is no risk of a major outbreak of related diseases such as foot and mouth disease, African horse sickness, or African swine fever.

12.5.118 It is noted that several species of birds utilise the Site. Highly Pathogenic Avian Influenza (HPAI) is a severe, highly infectious influenza causing significant morbidity and mortality in susceptible avian species. Avian influenza is primarily a disease of birds, but can be transmissible to humans through prolonged, direct contact with infected birds or contaminated material. There are currently no outbreaks of Avian influenza (bird flu) within Hampshire.

12.5.119 Owing to the nature of the Proposed Development the risk of causing or making worse HPAI is **negligible**. It is unlikely that birds will be 'kept' on Site rather they will be utilising the Site of their own accord. Should an individual choose to keep a species of bird on Site it is assumed that they will follow relevant Government guidance associated with bird flu. Should a species on Site be suspected of having been infected with avian influenza suitable avoidance/ surveillance measures will be adhered to. It is also noted that Animal Plant and Health Agency (APHA) monitors HPAI outbreaks internationally and publishes outbreak assessments considering the risk posed to the UK livestock on GOV.UK.

Part 2: be affected by the major accident or disaster

12.5.120 For Part 2 the sensitive receptors are considered to be the emergency services; built infrastructure; members of the public and local communities (including future users of the Site) (human health); and the natural environment, including ecosystems, climatic systems, land and soil quality, air quality, surface and groundwater

resources and landscape, and the historic environment, including archaeology and built heritage. All levels of effect have been considered in this context.

Terrorism

12.5.121 The currently national threat level from terrorism to the UK is substantial which means an attack 'is likely'.

Terrorist attacks in venues and public spaces: explosive devices

12.5.122 Whilst the Proposed Development does not propose any venues it will comprise spaces (i.e. a construction site and open space) that may be utilised by groups of people (construction workers and future users of the Site) albeit small groups. Such an attack cannot be ruled out, therefore, depending on its location and scale an explosive device terrorist attack has the potential to impact the Proposed Development through potential danger to human, fauna and flora life and structural damage to both built infrastructure and the environment.

12.5.123 During both construction and operation, the Proposed Development will follow government security guidelines. Measures incorporated will include the production of a suitable risk assessment to determine threats the organisation/Proposed Development may face and their likelihood; security onsite; a minimisation of access points; and the installation of appropriate physical measures such as barriers, locks, alarms, CCTV surveillance. In addition, an Emergency Plan will be prepared to outline procedures for construction staff to follow in the case of a terrorist incident.

12.5.124 As noted within the National Risk Register the government continues to reduce the vulnerability of the UK to an explosive attack through restricting access to explosives precursor chemicals, improving detection capabilities including the introduction of National Canine Training and Accreditation Scheme for Private Companies, and maintaining an understanding of the explosive materials and methods that pose a risk in the UK.

12.5.125 The UK's intelligent services (i.e. MI5) also look to reduce the probability of an attack through intelligence gathering and analysis. Through such investigations the threat can be disrupted through arrests and criminal proceedings.

12.5.126 Due to the nature of the proposed development (residential) and location (outside of a major city) an explosive device attack is considered very unlikely. Owing the above actions currently undertaken by the UK government and intelligent services

the risk from an explosive device related terror attack is considered to be **very low** which results in a **Minor Adverse** level of effect. **No significant adverse effects** upon emergency services, human health, built infrastructure and the natural environment are therefore expected in relation to explosive device related terror attacks.

Terrorist attacks in venues and public spaces: marauding attacks

12.5.127 A marauding attack would be more localised than an explosive attack and would pose a direct risk to human life and potentially built infrastructure within the Site.

12.5.128 As detailed above the Proposed Development will follow government security guidelines during both construction and operation. In addition, it is also considered that the increased threat of terrorism in recent years is matched by increased action by the police and security services that play key role prevention of violent extremism.

12.5.129 The UK's secret services also continue to monitor and investigate potential terrorist related threats with the aim of disrupting attacks at source.

12.5.130 Due to the nature of the proposed development (residential) and location (outside of a major city) a marauding attack is considered very unlikely. Owing to the above actions currently undertaken by the UK government and intelligent services the risk from a marauding attack within a venue or public space is considered to be **very low** which results in a **Minor Adverse** level of effect. **No significant adverse effects** upon emergency services, human health, built infrastructure and the natural environment are therefore expected in relation to marauding attacks.

Conventional and cyber attacks: gas infrastructure

12.5.131 An attack upon gas infrastructure could result in a direct loss of built infrastructure and the natural environment from explosions and substantial loss of gas supply capacity to the UK. Such could indirectly result in casualties and fatalities (human health) from a lack of heating, access to necessary medical treatment, exacerbation of an existing condition or limited ability to use gas-fired cookers safely.

12.5.132 As reported in the National Risk Register 2025 the UK has a diverse and highly resilient gas network. The industry works to continuously minimise the risk of unplanned disruption while taking the risk of such outages into account in forward planning. Both the government and the Gas System Operator have robust response plans in place in the unlikely event a substantial gas supply disruption should occur.

12.5.133 Owing to the nature of the Proposed Development gas infrastructure will be located on Site. When laying/erecting the infrastructure during construction best practice will be followed. Where necessary works will be supervised by the relevant utilities provider. Suitable security measures will be implemented, such as fencing, to ensure such is not accessible to the general public. It is assumed that such infrastructure will be designed and located suitably as to avoid impacts upon receptors (i.e. at a suitable depth). It should be noted that the Proposed Development will not comprise any utility infrastructure of major importance (i.e. power stations or utility storage infrastructure).

12.5.134 The risk with the above measures in place is considered to be **very low**, resulting in a **Minor adverse** level of effect. **No significant adverse effects** upon emergency services, human health, built infrastructure and the natural environment are therefore expected in relation to attacks upon gas infrastructure.

Conventional and cyber attacks: electricity infrastructure

12.5.135 An attack upon electricity infrastructure, depending on location, could result in a loss of electricity output at the Site. Such loss could result in direct impacts upon critical utilities networks (including mobile and internet telecommunications, water, sewage, fuel and gas) and in turn could disrupt to public services provisions, businesses and households, as well as loss of life (human health).

12.5.136 As reported in the National Risk Register 2025 the UK has a reliable energy system and maintaining a secure electricity supply is a key priority for the government. Both the government and the Electricity System Operator have robust response plans in place in the unlikely event that significant electricity supply disruption should occur.

12.5.137 To minimise the risk of unplanned disruption the Proposed Development will include for forward planning. It is assumed that the Proposed Development will prepare a health and safety pack detailing measures and actions to be taken in the event of an emergency.

12.5.138 Owing to the nature of the Proposed Development electricity infrastructure will be located on Site. When laying/erecting the infrastructure during construction best practice will be followed. Where necessary works will be supervised by the relevant utilities provider. Suitable security measures will be implemented, such as fencing, to ensure such is not accessible to the general public. It should be noted that the

Proposed Development will not comprise any utility infrastructure of major importance (i.e. power stations or utility storage infrastructure).

12.5.139 The risk with the above measures in place is considered to be **very low**, resulting in a **Minor adverse** level of effect. **No significant adverse effects** upon emergency services, human health, built infrastructure and the natural environment are therefore expected in relation to attacks upon electricity infrastructure.

Cyber

12.5.140 The section assesses the risks of a cyber attack upon the health and social care system, transport sector, and telecommunications systems.

12.5.141 An attack upon the above systems/sectors could lead to disruption in construction and operational activities at the Site.

12.5.142 A health and social care system outage could potentially have clinical care impacts on patients, as well as cause harm as a result of cancelled appointments, delays to medical procedures and tests, and A&E diversions. Impacts may also manifest over time, as the delays and cancellations would mean medical conditions worsen or are not diagnosed promptly.

12.5.143 As reported in the National Risk Register the UK have developed the 2023 Cyber Security Strategy for Health and Adult Social Care which sets out a plan to promote cyber resilience across the sector by 2030. A return to normal service would likely have a long recovery time however within the system there would be a phased return of priority service functions allowing those that require care to receive it.

12.5.144 An attack upon the transport sector could disrupt services delivered by operators and in turn disrupt construction and operational activities at the Site. Such could result in economic damage, as well as present an increased threat to passenger safety.

12.5.145 Owing to the nature of the Proposed Development internal movements are unlikely to be affected by an attack upon transport networks or systems. Such internal highways are not reliant upon systems such as toll booths or overhead gantries to operate. With the shift towards home working should permanent residents face the inability to commute it is likely that such disruption would not lead to substantial economic damage.

12.5.146 A disruptive and sophisticated cyber attack against a major UK telecoms network provider could be disruptive given it may impact accessibility to broadband, landline and mobile services.

12.5.147 Communication providers are responsible for assessing risks and taking appropriate measures to ensure the security and resilience of their networks. The Department for Science, Innovation and Technology (DSIT), as the lead government department, introduced the Telecommunications (Security) Act 2021 and subsequent secondary legislation, which establishes a new and robust security framework, underpinning requirements to ensure the sector builds and operates secure networks.

12.5.148 In addition, the UK Cyber Security Council together with National Cyber Security Centre (NCSC) seek to define and develop the skills the country needs with regards to cyber security. The UK Government have also developed the National Cyber Strategy and the Cyber Resilience Strategy for Defence which look to increase the UK's resilience to a cyber attack.

12.5.149 A health and safety pack will be prepared for the Site detailing measures and actions to be taken in the event of an emergency related to the above.

12.5.150 Owing to the nature and scale of the Proposed Development the risk is considered to be **very low**, resulting in a **Minor adverse** level of effect. **No significant adverse effects** upon emergency services, human health and built infrastructure are therefore expected in relation to cyber attacks.

12.5.151 Owing to the nature of the event there will be no effects upon the natural environment.

Accidents and systems failures

Highway accident

12.5.152 There is a potential for major transport accidents to affect the accessibility of the Proposed Development or affect vehicular routes within the Site or on the surrounding network (including the Langstone Bridge). Such an event could lead to a loss of life or damage to the built infrastructure or natural environment depending on scale and location.

12.5.153 A review of road safety has been undertaken in the Transport Assessment (Appendix 8.1). Such found that there does not appear to be a pattern or common cause to the

accidents that have taken place both locally to the Site and in the study area as a whole.

12.5.154 As reported in Chapter 8 (Transport) *'Multiple causation factors have been noted with driver error being the main factor in the vast majority of accidents. The number of accidents is not unusually high given the extent of this study area and the volume of traffic. Analysis of the overall accident data indicates that the design and layout of the local highway network would not in itself appear to be an overriding factor in the cause of the accidents'*.

12.5.155 Owing to level of traffic introduced by the Proposed Development there are unlikely to be any highway safety issues that would be exacerbated by the development proposals, particularly given the forecast traffic modelling (see Chapter 8) has shown that the Proposed Development can be accommodated on the local highway network without the need for highway mitigation. The Site access has been designed in accordance with current national and local design standards so there is no reason to suggest that accidents will increase, or safety will be compromised as a result of the development proposals. It has also been subject to an independent Stage 1 Road Safety Audit (see TA (Appendix 8.1)). It is unlikely that there would be a major transport accident within the Site or on the surrounding network.

12.5.156 A CTMP, or similar, will be prepared for the Proposed Development. This will include measures to reduce the impact of construction traffic on the local highway network such as ensuring that traffic to/from the Site adheres to the agreed routes to ensure traffic nuisance is not inadvertently caused. The CTMP will be a live document that can be regularly updated to address any unforeseen issues that may arise.

12.5.157 Parking provision on Site will adhere to HBC's relevant parking standards and guidelines.

12.5.158 A number of pedestrian improvements will be made in the location of the Site such as new footways, erection of crossing facilities and footpath widening (see Chapter 8). Such measures will offer safety benefits to all users of the network, including people walking and cycling.

12.5.159 It is considered that the risk from transport accidents to human health, built infrastructure and the natural environment is **very low**, owing to the findings of the transport chapter and measures outlined above. This results in a **Minor Adverse**

level of effect. **No significant adverse effects** are therefore expected in relation to transport accidents.

Major maritime pollution incident

12.5.160 Adjoined to the southern coastline of Hayling Island is the English Channel, which is one of the world's busiest shipping lanes. Therefore, there is a risk of a pollution incident occurring which may put human and marine life at risk.

12.5.161 The Site is located c.1km away from the southern coastline of Hayling Island and is separated from such by existing development. This limits the potential source pathways to receptors. Owing to this it is assumed that should an event occur, there will be a suitable amount of lag time before contamination, if any, would reach the Site. This would allow for an adequate response period in which receptors could be removed.

12.5.162 The Marine Management Organisation (MMO) is part of the response community that is ready to react to marine pollution incidents. The MMO alongside the Marine Coastguard Agency (MCA) regularly take part in training exercises to ensure preparedness to such an event and test out spill treatment products and processes. In the case of a major pollution incident, any spill response treatments and processes are supervised by the Marine Coastguard Agency (MCA) and statutory nature conservation agencies are closely involved when there are important environmental or fisheries concerns.

12.5.163 In addition, the MMO have prepared the Marine Pollution Contingency Plan (2023) which sets out the procedures for responding to a marine pollution incident.

12.5.164 Owing to the above, the risk is considered to be **very low**, resulting in a **Minor adverse** level of effect. **No significant adverse effects** upon human health and the natural environment are therefore expected in relation to major maritime pollution incidents.

12.5.165 Owing to the nature of the event there will be no effects upon built infrastructure.

Failure of the National Electricity Transmission System (NETS)

12.5.166 A failure of the NETS could lead to a loss of mains electricity supply instantaneously and without warning. Such could lead to impacts across critical utilities networks (including mobile and internet telecommunications, water, sewage, fuel and gas). This would cause substantial and widespread disruption to public and emergency

services provisions, businesses and households, as well as loss of life. Reasons for failure could include an extreme weather event, a cyber attack and cascading technical failures.

12.5.167 As detailed above the UK has a reliable energy system and maintaining a secure electricity supply is a key priority for the government. Both the government and the Electricity System Operator have robust response plans in place in the unlikely event that significant electricity supply disruption should occur. The Department for Energy Security & Net Zero have also prepared the National Emergency Plan for Downstream Gas and Electricity which provides information on established emergency procedures for a gas or electricity emergency.

12.5.168 To minimise the risk of unplanned disruption the Proposed Development will include for forward planning. It is assumed that the Proposed Development will prepare a health and safety pack detailing measures and actions to be taken in the event of an emergency.

12.5.169 Owing to the nature of the Proposed Development electricity infrastructure will be located on Site. When laying/ erecting the infrastructure during construction best practice will be followed. Where necessary works will be supervised by the relevant utilities provider. Suitable security measures will be implemented, such as fencing, to ensure such is not accessible to the general public. It should be noted that the Proposed Development will not comprise any utility infrastructure of major importance (i.e. power stations or utility storage infrastructure).

12.5.170 It is noted that the National Risk Register consider that impacts would be temporary and that it is likely that rural areas, such as the Site, would receive power more quickly.

12.5.171 The risk with the above measures in place is considered to be **very low**, resulting in a **Minor adverse** level of effect. **No significant adverse effects** upon emergency services, human health, built infrastructure and the natural environment are therefore expected in relation to a failure of the National Electricity Transmission System (NETS).

Regional failure of the electricity network

12.5.172 A regional failure of Great Britain's electricity network may result from extreme weather causing damage to local infrastructure. Impacts would vary depending on which regions are affected and the scale of the disruption. This would result in some

failures across utilities, causing disruption to public and emergency services as well as domestic households and businesses. It is expected that telecommunications systems and transport services (rail, road and aviation) would be disrupted due to the failure of electronic systems.

12.5.173 Following post-incident reviews by the government of large scales storms, such as Arwen and Eunice in winter 2021/2022, the industry has taken several steps to improve the electricity sector's physical resilience to future severe weather events, as well as the protections and support available to consumers. which will aid in mitigating against larger-scale regional electricity failures. As noted within the National Risk Register 2025 these actions will aid in mitigating against larger-scale regional electricity failures.

12.5.174 It is also noted that in 2021 Scottish and Southern Electricity Networks (SSEN) undertook upgrade works to Hayling Island's electrical infrastructure "to boost the resilience of the power supply to the island". Such works included a £1.5 million pound local investment to upgrade cables and the substation at 120 Havant Road.

12.5.175 Owing to the above and those measures outlined with the 'Conventional and Cyber attacks: electricity infrastructure' and 'Failure of the National Electricity Transmission System (NETS)' subsections of Part 2, the risk is considered to be **very low**, resulting in a **Minor adverse** level of effect. **No significant adverse effects** upon emergency services, human health, built infrastructure and the natural environment are therefore expected in relation to a regional failure of the electricity network.

Failure of gas supply infrastructure

12.5.176 Natural gas is a crucial fuel source that is used to heat homes and businesses, generate electricity or act as a feedstock for industrial processes across the UK. The National Risk Register 2025 notes that whilst unlikely, a failure of gas supply infrastructure may result from a technical issue or accident, with serious impacts on human welfare (health), essential services and the economy.

12.5.177 As reported above the UK has a diverse and highly resilient gas network. The industry works to continuously minimise the risk of unplanned disruption while taking the risk of such outages into account in forward planning. Both the government and the Gas System Operator have robust response plans in place in the unlikely event a substantial gas supply disruption should occur. The Department for Energy Security & Net Zero have also prepared the National Emergency Plan for

Downstream Gas and Electricity which provides information on established emergency procedures for a gas or electricity emergency

12.5.178 Owing to the nature of the Proposed Development gas infrastructure will be located on Site. When laying/ erecting the infrastructure during construction best practice will be followed. Where necessary works will be supervised by the relevant utilities provider. Suitable security measures will be implemented, such as fencing, to ensure such is not accessible to the general public. It is assumed that such infrastructure will be designed and located suitably as to avoid impacts upon receptors (i.e. at a suitable depth) It should be noted that the Proposed Development will not comprise any utility infrastructure of major importance (i.e. power stations or utility storage infrastructure).

12.5.179 The risk with the above measures in place is considered to be **very low**, resulting in a **Minor adverse** level of effect. **No significant adverse effects** upon emergency services, human health, built infrastructure and the natural environment are therefore expected in relation to attacks upon gas infrastructure.

Water infrastructure failure or loss of drinking water

12.5.180 The failure of water infrastructure could result in the loss of key public water supply and wastewater services. The National Risk Register 2025 states that a reasonable worst-case scenario would involve the sudden loss of piped water supply, or the degradation of the piped supply such that it was unfit for human consumption even after boiling. The loss of water would have knock-on consequences to the functioning of essential services such as schools, hospitals and prisons.

12.5.181 The water sector has established contingency plans to mitigate a range of water supply incidents. This includes mutual aid capability across the water companies and the provision of alternative water supply, which would prioritise the most vulnerable communities.

12.5.182 Owing to the location of the Proposed Development it is assumed that an adequate supply of water, such as bottled water, would be available within close proximity in the event of a loss. This would assist in mitigating for any impact in the short term.

12.5.183 With consideration of the above the risk is considered to be **very low**, resulting in a **Minor adverse** level of effect. **No significant adverse effects** upon emergency services and human health are therefore expected in relation to a water infrastructure failure or loss of drinking water.

12.5.184 Owing to the nature of the event there will be no effects upon built infrastructure or the natural environment.

Major fire

12.5.185 Should a fire or explosions occur on Site there is potential for significant effects on human health and structural integrity. The severity of the effect will depend on the severity of the incident. In a worst-case scenario, an event would lead to a loss of life (human, flora and fauna) and structural damage.

12.5.186 It is assumed that construction of the Proposed Development will follow standard best practice and a suitable fire risk assessment and fire precautions will be adhered to. The risk assessment will take account of relevant guidance, such as HSE's 'Fire safety in construction' which details measures aimed at reducing the risk of a fire occurring.

12.5.187 In addition, there are legal duties under The Construction Design and Management Regulations 2015 for clients, designers, principal designers, contractors to eliminate and control the risks from fire safety on construction projects.

12.5.188 The Proposed Development will be built to national fire regulations and to have the standards of fire protection required by Building Regulations. The Proposed Development will include the use of linings, materials and finishes that limit the release of heat. Good design will reduce the risk of fire significantly.

12.5.189 It is also recognised that Hayling Island Fire Station is located c.150m away from the Site. Therefore, it is considered that there would be a short emergency response time, should a fire occur on the Site, reducing the risk of the spread of fire.

12.5.190 In conclusion the risk from fires is considered to be **low**, resulting in a **Moderate adverse** level of effect. **No significant adverse effects** are therefore expected in relation to fires upon emergency services, human health, built infrastructure and the natural environment.

Chemical and Biological Contamination

12.5.191 As detailed in Part 1, standard mitigation measures, such as a CEMP and the use of standard PPE, will be implemented to reduce the risk of an impact from existing contaminated sources on Site. Measures will also be implemented, during construction, to minimise dust generation; manage surface water run off/ drainage; control contamination from leaks and spills from vehicles / storage; minimise where

practicable production of silt and contaminated water; and ensure the prevention of sediment and pollutants entering nearby watercourses. The specific details of these will likely be determined by occupational health and safety specialists and will be specified in site health and safety documentation prior to the construction phase (e.g. a Pollution Incident Control Plan).

12.5.192 As reported in the Preliminary Geo-Environmental Risk Assessment Report 'there are negligible risks associated with land quality at the site. Any contamination is likely to be localised and would be addressed during development, probably through the use of a clean capping. If hydrocarbons are encountered below the tank these would be expected to be limited in extent and so can be removed'. Should unexpected, localised contamination be encountered during development works these will be addressed as part of the site development works through such measures as a discovery strategy, with source removal and off-site disposal being likely to be the most appropriate remedial action.

12.5.193 The assessment also dismissed the risk of ground gas due to no source being identified. This will be verified by a site investigation. If a risk is identified, this can be mitigated through the use of conventional gas membrane and underfloor ventilation.

12.5.194 Further investigations will be undertaken to provide design information for future development works post-consent. This will likely be covered by a suitably worded condition. If required mitigation and remediation measures will be implemented.

12.5.195 In conclusion the risk from chemical and biological contamination is considered to be **low**, resulting in a **Moderate adverse** level of effect. **No significant adverse effects** are therefore expected in relation to fires upon emergency services, human health, built infrastructure and the natural environment.

Natural and environmental hazards

Severe Space Weather

12.5.196 Impacts as a result of space weather include electricity blackouts, potentially causing fatalities and physical / psychological casualties; loss / disruption of Global Navigation Satellite Systems; disruption to essential services, particularly air travel energy and communications; and increases in background radiation at high altitudes.

12.5.197 As a response to the potential impacts space weather can cause, the Government and local responders have produced the UK Severe Space Weather Preparedness Strategy. It outlines a series of commitments by Government to work with industry, academia, and international partners to increase the country's understanding of and preparedness for severe space weather. The Strategy is underpinned by three 'pillars': 'Assess Pillar' focusing on enhancing our understanding of severe space weather, its impacts, and our ability to forecast events; 'Prepare Pillar' focusing on increasing the resilience of essential infrastructure and services; and 'Respond & Recover Pillar' focusing on ensuring the UK can respond to events effectively and recover from them quickly. Under the 'Prepare Pillar' the Strategy looks to develop and test response plans and develop mitigation options. In the event of extreme space weather suitable management steps will be adhered to following instruction by Public Health England and local responders.

12.5.198 Whilst it is acknowledged that there is the potential for space weather to lead to a loss of life this is considered very unlikely. Exposure to UVB and UVA from solar radiation can cause adverse health effects, including increased incidence of skin cancers, cataracts, and immune suppression. The Proposed Development will incorporate good design and technologies to reduce the risk of solar radiation exposure.

12.5.199 As such the risk from space weather is considered to be **negligible**. This results in a **negligible adverse** level of effect upon emergency services, human health, built infrastructure and the natural environment which is considered to be **not significant**.

Storms

12.5.200 Storms and gales have the potential to impact build structure through water ingress, effectiveness of air conditioning, energy use, risk of roof failures. This in turn could affect emergency services and human health. The increased frequency and severity of gales, storms, extreme weather could also change the distribution of habitats and protected and notable species.

12.5.201 The Proposed Development will incorporate mitigation measures in place through Building Regulations and suitable construction methods to minimise the impact from storm damage. Such measures include the provision of sufficient attenuation

for a 1 in 200 year storm event and other Sustainable Drainage Systems (SUDs) features such as permeable paving.

12.5.202 It is also assumed that standard health and safety practices will be incorporated during both the construction and operational phases of the Proposed Development to minimise the potential for impacts upon human health.

12.5.203 In addition to the above it is noted that the Met Office is responsible for issuing weather warnings, which warn of impacts caused by severe weather. The warnings are designed to let people, businesses, emergency responders and governments know what weather is predicted and what the impacts of that weather may be. The weather warnings help communities and businesses to prepare, respond and develop resilience to the impacts that may be caused by severe weather.

12.5.204 The Hayling Island Emergency Planning Framework also provides details of an emergency plan in the event where a tidal flood event brought on by a storm were to occur and temporarily prevent access on and off of the Island via the Langstone Bridge. The plan provides an initial framework to enable the relevant agencies and organisations to make an integrated response to support Hayling Island's community until, either, normality is restored or the situation is sufficiently stabilised to allow the continuation of community functions and services. If the need arose, access to the island could be maintained using a number of alternative means, including the Hayling Ferry, helicopters and hovercraft to support the community and the emergency services in maintaining key services on Hayling Island in case of a temporary loss of access to the Island. It should also be noted that the island contains a range of services such as medical centres and supermarkets and would also be a place of safe refuge in the event that a tidal event cut the bridge off for a limited period of time.

12.5.205 As set out in Chapter 10 (Water Environment) 'In the event that a flood event led to the temporary closure of the bridge, Hayling Island and the Site would both provide safe places of refuge, and there would be no risk to life'.

12.5.206 Through implementation of the measures and plans detailed it is considered that the risk from storm damage on emergency services, human health, built infrastructure and the natural environment will be **low**, resulting in a **Moderate adverse** level of effect which is considered to be **not significant**.

High Temperatures and Heatwaves

12.5.207 High temperatures and heatwaves can impact upon human health, safety issues and infrastructure. Such impacts include air conditioning/ heating/ cooling systems being impacted due to increased cooling/ decreased heating requirements; reduced capacity of overhead power lines; overheating of mechanical and electrical equipment affecting lifespan; increased discomfort or overheating in summer; decreased labour productivity; and structure/ cladding/ roofing membranes, sealants, pavements, and roads having increased risk of cracking. Disruption to transport networks, supply chains, power supplies and water supplies would also be expected.

12.5.208 To reduce the risks of impacts from heatwaves the Proposed Development will be carefully designed to reduce solar gain during summer and maximise the effectiveness of natural ventilation.

12.5.209 It is also assumed that users of the Site will adhere to relevant guidance, including the Adverse Weather and Health Plan (AWHP) produced by UK Health Security Agency, to prepare and protect themselves from the effects of such an event.

12.5.210 In addition to the above it is noted that the Met Office is responsible for issuing weather warnings, which warn of impacts caused by severe weather. The warnings are designed to let people, businesses, emergency responders and governments know what weather is predicted and what the impacts of that weather may be. The weather warnings communities and businesses to prepare, respond and develop resilience to the impacts that may be caused by severe weather.

12.5.211 Overall, the risk from high temperatures and heatwaves upon emergency services, human health, built infrastructure and the natural environment is considered to be **low** which results in a **Moderate adverse** level of effect. **No significant adverse effects** are therefore expected in relation to high temperatures and heatwaves.

Low temperatures and snow

12.5.212 Low temperatures and snow would affect vulnerable communities, particularly older people and those with pre-existing conditions (for example cardiovascular/respiratory disease). An increase in falls, injuries (for example fractures), road accidents and hypothermia may also occur. Such weather could result in excess deaths, above what is experienced in a normal winter, with a significant number of casualties and fatalities, placing significant pressure on health

and social care services. An event may also cause disruption to transport networks, power or heating fuel supplies, telecommunications, water supplies, schools and businesses.

12.5.213 Extreme low temperatures may also affect built infrastructure and habitats and species on Site.

12.5.214 The Proposed Development will incorporate mitigation measures through Building Regulations, including suitable insulation, and suitable construction methods to minimise the impact from low temperatures and heavy snow. It is also assumed that standard health and safety practices will be incorporated during both the construction and operational phases of the Proposed Development to minimise the potential for impacts upon human health.

12.5.215 It is also assumed that users of the Site will adhere to relevant guidance, including the Adverse Weather and Health Plan (AWHP) produced by UK Health Security Agency, to prepare and protect themselves from the effects of such an event.

12.5.216 In addition to the above it is noted that the Met Office is responsible for issuing weather warnings, which warn of impacts caused by severe weather. The warnings are designed to let people, businesses, emergency responders and governments know what weather is predicted and what the impacts of that weather may be. The weather warnings help communities and businesses to prepare, respond and develop resilience to the impacts that may be caused by severe weather.

12.5.217 Through implementation of the measures detailed it is considered that the risk from low temperatures and snow on emergency services, human health, built infrastructure and the natural environment will be **very low**, resulting in a **Minor adverse** level of effect which is considered to be **not significant**.

Flooding

12.5.218 In relation to the assessment below reference should be made to Chapter 12 Water Resources and Appendix 12.1 (Flood Risk Assessment (FRA)).

12.5.219 During construction the creation of temporary structures and construction of permanent structures will introduce impermeable areas and increases run off volumes. Permeability may also be decreased due to soil compaction and the regrading of the ground/topography could remove/introduce flow paths and direct flood water to areas previously not at risk of flooding.

- 12.5.220 During operation the creation of low permeability areas such as roads, car parks and roof structures may reduce the ability of the Site to accept rainfall volumes. Hard surfaces and site drainage such as guttering, and highway drainage may also increase the Site sensitivity to rainfall and reduce response time to rainwater reaching the receptor. There is also potential for the Site layout to remove/introduce flow paths and direct floodwater to areas not previously at risk of flooding.
- 12.5.221 As stated in Chapter 10 (Water Environment) *'mitigation measures are designed in to reduce the potential for impacts on Flood Risk'*. Such measures include, but are not limited to, set building floor levels +150mm above external levels; no below surface habitable buildings (i.e. basements); adoption of a surface water management strategy; and undertake maintenance activities to keep the land drains clear from debris and overgrown vegetation to maintain the conveyance of the channels. Reference should be made to section 10.5 of Chapter 10 (Water Environment) for a full list of avoidance and control measures.
- 12.5.222 In addition to the above surface water runoff from the Site will be restricted to greenfield rate (QBAR), which offers a betterment to existing conditions with uncontrolled runoff across all return periods. Surface water runoff from the Proposed Development will also be attenuated on-site up to and including the 1 in 100-year event, plus 45% climate change. A SuDS drainage scheme is proposed to manage excess runoff from the development, comprising two detention basins designed to maintain runoff at pre-development rates, with an outfall to onsite watercourses.
- 12.5.223 It is proposed that foul flows will discharge to the nearby public foul sewer network.
- 12.5.224 As stated in the FRA (Appendix 10.4) *'the proposed development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of national policy and guidance'*.
- 12.5.225 It is acknowledged that access to Hayling Island from the mainland is served by a single road, the A3023. The FRA assesses the risk of tidal flooding to Hayling Island access/egress (Langstone Bridge) as low. As reported in the FRA (Appendix 10.4);
'having regard to the risks this actually poses, there are also measures that can be taken to effectively manage this issue.'

- *The areas north and south of the Hayling Bridge are covered by flood warnings, which have long lead up times (up to days in advance), which enable temporary bridge closure.*
- *Tidal flooding events are often short-lived (a matter of hours for spring tides and for storm surges), so any bridge closure would only be a short-lived event.*
- *The Hayling Emergency Planning Framework provides details of an emergency plan in the scenario where a flood event preventing access on and off the Island were to unfold this includes various other means of accessing the island in the event of a bridge closure.*
- *The Island and Site provide a safe place of refuge and as such no access/egress to the island would not pose a risk to life'.*

12.5.226 Owing to the above, and in accordance with the FRA, the risk of a major flooding event upon emergency services, human health, the built environment (including Langstone Bridge) and the natural environment is therefore considered to be **low**. This results in a **Moderate adverse** level of effect up which is **not significant**.

Drought

12.5.227 The latest UK Climate Projections (UKCP18) predicts a trend towards drier summers on average along with an increase in the frequency and intensity of extremes. These projections suggest an increase in the likelihood of drought.

12.5.228 Should Hampshire/ the local area be faced with a drought, the Proposed Development will adhere to any actions/ restrictions imposed by Southern Water including those within their Drought Plan (2019). This plan sets out how Southern Water intend to maintain supplies during a period of drought. Such measures include reducing compensation flows, abstracting from additional sources, changing network configuration or using tankers to augment supplies.

12.5.229 In addition to the above, service providers, the broader water sector and the Environment Agency have numerous robust contingency plans in place to mitigate against a range of water supply incidents including the regional and water resources management plans which are produced through a strategic collaboration across regional water providers. These plans include mutual aid capability across water

companies and the provision of alternative water supplies, which would prioritise the most vulnerable communities.

12.5.230 It is also noted that service providers, including Southern Water, run mock incident simulations annually to prepare for emergency situations. During such simulations the providers work collaboratively to provide the necessary actions/ response.

12.5.231 In conclusion the risk from drought is considered to be **very low** which results in a **Minor adverse** level of effect. **No significant adverse effects** are therefore expected in relation to droughts.

Poor Air Quality

12.5.232 Demolition, earthworks, construction and trackout associated with the construction of the Proposed Development have the potential to cause significant dust effects.

12.5.233 Chapter 6 (Air Quality) identified that assuming that no mitigation measures are applied, except those required by legislation;

- The risk of dust soiling effects and human health effects is classed as negligible for demolition;
- The risk of dust soiling effects is classed as high for earthworks and construction, and medium for trackout; and
- The risk of human health effects is classed as low for earthworks, construction and trackout.

12.5.234 Owing to the fact a number of the above risk categories are above negligible it is considered that without the implementation of effective mitigation measures there is potential for the sensitive receptors to be affected by a major air quality event.

12.5.235 As set out in Chapter 6 '*According to the Multi Agency Geographic Information for the Countryside (MAGIC) resource, there are no potentially dust sensitive designated habitat sites within 50m of the Site and/or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the Site entrance(s)*'. Construction phase ecological effects were not considered further.

12.5.236 As identified within Chapter 9 the risk to human health is considered to be no more than **low**. For the purpose of this assessment this results in a **Moderate adverse** level of effect. **No significant effects** are therefore considered in relation to human health. However, the risk of dust soiling effects is considered to be **high** for

earthworks and construction, and **medium** for trackout. These risk levels would result in **Substantial adverse** levels of effect. A **significant effect** is therefore considered prior to the implementation of mitigation measures during construction in relation to dust soiling effects.

12.5.237 However, it should be noted that the above assessment relates to Step 2C of the construction phase dust assessment (see Chapter 6). The IAQM guidance recommends that effect, in this case risk, should only be assigned after mitigation measures are implemented. This is because EIA influences the design process and therefore significant adverse environmental effects are either avoided or reduced through design before the proposal is finalised, and thus the pre-mitigation impacts are not relevant.

12.5.238 As a result, the risk associated with the construction phase, with mitigation in place, is detailed in section 12.7.

12.5.239 As part of Chapter 6 (Air Quality) an assessment has been undertaken to consider the impacts associated with road traffic emissions during the operational phase. The assessment found that the impact of the Proposed Development on NO₂, PM₁₀ and PM_{2.5} concentrations, at existing sensitive receptors, in the 2035 Opening/Future Year is predicted to be negligible for all receptor locations. Chapter 6 also found that NO₂, PM₁₀ and PM_{2.5} concentrations within the Site (for PSR 1) are predicted to be below the relevant objectives and limit values.

12.5.240 In addition to the above the Information to Inform Habitats Regulations Assessment (Appendix 7.2) determined that no significant adverse effect on the designated sites would likely result from traffic-derived air quality impacts or hydrological changes brought about by increased water abstraction. Chapter 7 (Ecology) further states that *'Increased traffic flows resulting from the scale and location of the Proposed Development and wider projected housing growth are capable of giving rise to localised air quality impacts. Areas of each of the Chichester and Langstone Harbours SPA and Ramsar site (and SSSIs), Solent Maritime SAC and Portsmouth Harbour SPA and Ramsar site exist within 200m of a major road (A-road or motorway), and could therefore experience localised increases in atmospheric and deposited pollutants. However, the effects of increased traffic resulting from the Proposed Development in isolation are unlikely to be appreciable, given the intervening distances and diffusion of traffic. Furthermore, findings of air quality dispersion modelling (see*

Chapter 6 of this ES) found that potentially significant increases in pollutant nitrogen resulting from the Proposed Development, in combination with other committed development, would be limited to a single modelled location within Emsworth Harbour, adjacent to Langstone Road. At this location, however, the habitat is intertidal and regularly inundated with tidal water, with the result that air pollutants are unlikely to be capable of adversely affecting the habitats present, and will therefore result in no significant positive/negative cumulative adverse effect’.

12.5.241 The risk of a major air quality event occurring and having an impact is considered to be **negligible** and therefore the level of effect on emergency services, human health and the and the natural environment during operation has been assessed as **negligible adverse** which is considered **not significant**.

12.5.242 No effects will occur upon the built environment.

12.5.243 It is noted that Chapter 6 reports that the effect of the Proposed Development on human receptors is considered not significant, therefore, no mitigation measures are required. However, mitigation measures will assist in reducing any potential impact and general best practice measures in relation to air quality could be implemented. EV charging points are now standard for all new developments with associated car parking spaces. Additional mitigation measures are discussed and detailed in Chapter 6.

Human, animal and plant health

Pandemic and Outbreak of an emerging infectious disease

12.5.244 The spread of illness has the potential to cause significant effects upon human health, and subsequent pressures on the emergency services, should suitable planning and protection measures not be adhered to.

12.5.245 During construction of the Proposed Development employees will follow Public Health England and Government guidance for working safely and reducing the risk of respiratory infections including the coronaviruses. It is acknowledged that the UK Health and Security Agency (UKHSA) have published specific guidance for ‘Reducing the spread of infections including COVID-19, in the workplace’. The guidance is aimed at people who are managing a workplace, organisation or premises. In accordance with such guidance a risk assessment will be undertaken during construction of the Proposed Development and sensible precautions and actions to reduce the risk of transmission of respiratory infections including COVID-19 and

diseases will be implemented. The risk assessments will be tailored to the phase of work.

12.5.246 It is assumed that future users will abide by standard infection control standards such as maintaining personal hygiene including the latest COVID-19 guidance and any future guidance regarding human disease thereby limiting the risk of the spread of disease.

12.5.247 In addition to the project specific measures outlined above it is noted that the UKHSA alongside Field Services teams and local authorities undertake routine operational and surveillance work to identify and react to new diseases.

12.5.248 The above measures will substantially reduce the risk of the spread of disease and adverse effects on emergency services and human health receptors. The risk of impacts as a result of a pandemic or outbreak of an emerging infectious disease is therefore considered to be **very low**. This results in a **Minor adverse** level of effect which is considered to be **not significant**.

12.5.249 The natural environment and built infrastructure are not considered receptors to a pandemic or outbreak of an emerging infectious disease.

Animal disease

12.5.250 The Proposed Development will not house livestock therefore there is no risk of a major outbreak of related diseases such as foot and mouth disease, African horse sickness, or African swine fever.

12.5.251 It is noted that several species of birds utilise the Site. Highly pathogenic avian influenza (HPAI) is a severe, highly infectious influenza causing significant morbidity and mortality in susceptible avian species. Avian influenza is primarily a disease of birds, but can be transmissible to humans through prolonged, direct contact with infected birds or contaminated material. There are currently no outbreaks of Avian influenza (bird flu) within Hampshire.

12.5.252 The Animal Plant and Health Agency (APHA) monitors HPAI outbreaks internationally and publishes outbreak assessments considering the risk posed to the UK livestock on GOV.UK. Should an infected bird be found on Site suitable precautions will be taken and the species removed by suitably qualified individuals.

12.5.253 Owing to the nature of the Proposed Development it is not expected that humans will be forced to be in direct contact with birds or contaminated materials. To

minimise the risk of infection it is assumed that construction workers and future site users will maintain good personal hygiene and abide by standard health and safety practices. Should an infected bird be found on Site local health protection teams would be involved in following up human contacts with each new infected establishment.

12.5.254 With consideration of the above the risk of impacts as a result of an animal diseases is considered to be **very low**. This results in a **Minor adverse** level of effect upon emergency services, human health and the natural environment which is considered to be **not significant**. Built infrastructure is not considered relevant to this risk.

12.6 Mitigation

12.6.1 Beyond those detailed below no further mitigation measures are considered to be required.

Air Quality

12.6.2 To reduce the potential for nuisance dust and particulate matter to be generated during construction a best practice dust mitigation plan will be written and implemented for the Site. This will set out the practical measures to be incorporated as part of a best working practice scheme. Further details of what these measures may include are detailed in Chapter 6 (Air Quality).

12.6.3 Should exceptional incidents occur that cause dust and/or emissions these will be recorded, and appropriate measures be taken to identify causes and reduce emissions in a timely manner.

12.6.4 It is recognised that the final design solutions will be developed with the input of the contractor to maximise construction efficiencies, to use modern construction techniques and sustainable materials, and to incorporate the particular skills and experience offered by the successful contractor.

12.6.5 Whilst Chapter 6 concludes that significant effects are not anticipated during the operational phase, the Proposed Development could assist in reducing any potential impact further through general best practice measures in relation to air quality. Such measures could include electric vehicle (EV) charging points and the implementation of a green Travel Plan.

12.7 Residual Effects

Part 1: cause/make worse a major accident or disaster

Air Quality

- 12.7.1 The Air Quality Chapter (Chapter 6) reports that the implementation of effective mitigation measures during the construction phase will reduce the potential for nuisance dust and particulate matter to be generated and any residual impact should be 'not significant'.
- 12.7.2 Taking into account the air quality assessment results and the proposed and suggested mitigation measures the risk of the Proposed Development causing or making worse a major event associated with air quality, during construction, is considered to be **low** in a worst-case scenario.
- 12.7.3 The risk of the Proposed Development causing/ making worse the air quality in the surrounding area, during operation, remains the same as the full assessment (negligible).

Part 2: be affected by the major accident or disaster

Air Quality

- 12.7.4 The Air Quality Chapter (Chapter 6) reports that the implementation of effective mitigation measures during the construction phase will reduce the potential for nuisance dust and particulate matter to be generated and any residual impact should be 'not significant'.
- 12.7.5 Taking into account the air quality assessment results and the proposed and suggested mitigation measures the risk of a major event affecting the Proposed Development, during construction, is considered to be **low** which results in a **Moderate adverse** level of effect upon human health. **No significant adverse** effects are therefore expected in relation to poor air quality.
- 12.7.6 The residual effect, during operation, upon emergency services, human health and the and the natural environment remains as **negligible adverse** which is considered **not significant**.

12.8 Assessment of Cumulative Effects

Intra-cumulative effects

- 12.8.1 The assessment is holistic in nature and therefore has already considered the interrelationships between individual topics covered within the ES. No significant residual effects have been identified. No further assessment is therefore required.

Inter-cumulative effects

- 12.8.2 There is a possibility that two or more developments could cause/make worse a major accident or disaster or exacerbate effects on the Proposed Development as a result of a major accident or disaster.
- 12.8.3 However, owing to strict planning guidance and regulation it is assumed that all committed development, as outlined in Chapter 2, will have to demonstrate that appropriate prevention measures, in relation to major accidents and disasters, have been incorporated into their site design and will be in place during all phases/periods. This assessment assumes that the mitigation measures of the other developments would be implemented.
- 12.8.4 Each technical chapter of relevance to this assessment has considered the potential for cumulative effects. No significant cumulative effects of relevance were identified within the relevant chapters. A summary of inter-cumulative effects can be found in Chapter 13 of this ES.
- 12.8.5 Owing to the fact no significant residual effects have been identified the above potential cumulative effects arising as a result of other major developments in combination with the Proposed Development are considered to be no greater than Moderate Adverse and not significant.

12.9 Summary

- 12.9.1 This chapter has sought to identify whether there is potential for significant effects as a result of major accidents and/or disasters associated with the Proposed Development.
- 12.9.2 Utilising a scoping process, a list of major accidents and disasters of relevance to the Proposed Development was devised. This focussed on events of low likelihood but potentially high consequence, in accordance with IEMA's Major Accidents and Disasters in EIA: A Primer.

12.9.3 An assessment of the scoped in events was then undertaken considering the potential for the Proposed Development to, where relevant:

- cause/make worse a major accident or disaster; and
- be affected by the major accident or disaster.

12.9.4 With the implementation of the embedded design measures and additional mitigation proposed, and assuming standard practice and regulatory compliance is followed, it is not anticipated that the Proposed Development will cause/make worse, or be affected by, a major accident and/or disaster that will result in significant effects on emergency services, human health, the natural environment or built infrastructure (including Langstone Bridge).

13 SUMMARY OF RESIDUAL AND CUMULATIVE EFFECTS

13.1 Residual Effects

13.1.1 A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects, i.e. the mitigation measures, has been set out within each technical chapter. These measures have been used to reduce impacts to the lowest practicable level consistent with the overall objectives of the scheme.

13.1.2 Each technical chapter has assessed the effectiveness of these measures in order to identify the residual effects.

13.1.3 Following the implementation of the mitigation measures outlined within each technical chapter, the majority of residual environmental effects have been assessed as being not significant, as summarised within Table 13.1 below. Further details are provided within the relevant technical chapter.

Table 13.1: Summary of Significant Residual Effects	
Technical Chapter	Significant Residual Effects?
<i>Air Quality</i>	No
<i>Ecology</i>	No
<i>Transport</i>	No
<i>Soils and Agricultural Land</i>	Yes (<i>adverse</i>)
<i>Water Environment</i>	No
<i>Rights of Way, Access and Recreation</i>	No
<i>Vulnerability to Accidents and Disasters</i>	No

13.1.4 As stated above within Table 13.1, the Proposed Development will result in significant residual effects on agricultural land.

13.1.5 The Proposed Development results in the irreversible loss of 11.5 ha (7.2 ha of Grade 2 and 4.3ha of Subgrade 3a) of Best and Most Versatile (BMV) quality agricultural land. The loss would be permanent, and the residual effect is significant.

13.2 Cumulative Effects

13.2.1 Schedule 4 of the EIA Regulations states that an ES must include a description of the likely significant effects of the development, including reference to possible cumulative effects.

13.2.2 When considering potential significant cumulative impacts, the assessments have (where appropriate) considered:

- Intra-cumulative effects (i.e. those occurring as a result of the Proposed Development in isolation).
- Inter-cumulative effects (i.e. those occurring as a result of the Proposed Development in combination with other development).

13.2.3 An assessment of the potential cumulative effects was undertaken within each of the technical chapters.

13.2.4 A summary of the cumulative effects of the scheme are provided below and within Table 13.2, with further details provided within each technical chapter (Chapters 6 – 12).

Intra-cumulative effects

13.2.5 The EIA has taken into consideration where a significant residual impact is expected to occur on a particular receptor as a consequence of collective actions, aspects or effects of the Proposed Development. These inter-relationships have been considered as relevant, and no significant intra-cumulative effects were identified.

Inter-cumulative effects

13.2.6 In relation to inter-cumulative effects, the EIA has considered committed development projects and Local Plan Allocations in the area (as set out in Chapter 2) which, in conjunction with the Proposed Development, could collectively impose a significant effect on the environment.

13.2.7 A summary of the cumulative effects of the scheme are provided within Table 13.2, with further details provided within each technical chapter.

Table 13.2: Summary of Inter-Cumulative Effects	
Technical Chapter	Summary of Cumulative Effects
<i>Air Quality</i>	It is assumed that those developments, including the Proposed Development, granted planning permission would have their own construction dust mitigation measures implemented via CEMPs, DMPs etc. to reduce residual effects to an anticipated “not significant” level. Should the construction of the Proposed Development overlap with the construction phases of other developments effects would only be temporary in nature, lasting only for the duration of any period of overlap of construction works, and are not considered to be significant.



	Committed developments have been incorporated into the main air quality assessment. It can therefore be concluded that there will be no significant cumulative effects on air quality.
Ecology	No significant cumulative effects will occur upon bats and reptile species given each development will include appropriate mitigation measures. A payment of the applicable financial contribution to the Solent Recreation Mitigation Strategy will be made prior to occupation of the Proposed Development. This will be used to fund strategic measures designed to ensure there are no significant cumulative effects upon the Chichester and Langstone Harbours SPA, Ramsar site or SSSIs as a result of recreation pressure. The Proposed development will be 'nitrogen-negative' (i.e. a betterment on neutrality), and will therefore have no significant cumulative effect on the European sites of the East Solent system (Chichester and Langstone Harbours SPA and Ramsar site, Portsmouth Harbour SPA and Ramsar site, Solent Maritime SAC, Solent and Dorset Coast SPA, Solent and Southampton Water SPA and Ramsar site or Solent and Isle of Wight Lagoons SAC) as a result of eutrophication linked to foul drainage impacts to water quality. It has been determined that air pollutants are unlikely to be capable of adversely affecting the qualifying habitats and species within the Chichester and Langstone Harbours SPA and Ramsar site (and SSSIs), Solent Maritime SAC and Portsmouth Harbour SPA and Ramsar site. Where relevant each scheme, including the Proposed Development, will include mitigation to fully compensate any impacts upon wintering birds. No significant cumulative effects are therefore anticipated. Increased abstraction could, in principle, impact fresh water inputs to European sites and the waterfowl they support. Portsmouth Water confirm that there is currently a surplus of supply for the period to 2044, therefore impacts on site features arising from increases in water abstraction will not result in significant cumulative effects
Transport	It is assumed that those developments, including the Proposed Development, granted planning permission would have their own Construction Traffic Management Plans (CTMPs) to mitigate construction impacts. Live applications have been considered alongside the Proposed Development. It is concluded that there will be no significant cumulative effects during the construction and operational phase.
Soils and Agricultural Land	There will be no cumulative effects upon soil resources. The cumulative loss of BMV agricultural land would not equate to more than 1% of the average five-year national land loss. In the national context there will be no significant cumulative effect. However cumulatively the schemes will result in a quantum of BMV land loss that would result in a significant adverse effect in a local context.
Water Environment	All developments, including the Proposed Development, do or will comply with DEFRA non-statutory SuDS guidance, PPG:7 and CIRIA C753 guidance on flooding, surface water discharge rates, volume control and water quality control to minimise individual impacts on the aquatic environment. This will



	include the incorporation of drainage strategies and flood risk abatement techniques. In summary no significant cumulative effects are anticipated.
<i>Rights of Way, Access and Recreation</i>	No cumulative effects will occur upon the land associated with Hayling Island Holiday Park as it is in private ownership. It is considered that the Chichester Harbour NL has the ability to absorb an increase in visitor numbers without resulting in an increase in adverse effects. It is anticipated that that additional users of the sports facilities at Hayling Park will be relatively low in number. The increase in residents is likely to increase the use of footpaths in the area. Where necessary the schemes include for recreation provision in the form of areas of open space, public realm, play areas and footpaths depending on the scale of the proposals. These measures will help absorb some of the recreation requirements of the new residents. In summary no significant cumulative effects are anticipated.
<i>Vulnerability to Accidents and Disasters</i>	Owing to strict planning guidance and regulation it is assumed that all committed development will have to demonstrate that appropriate prevention measures, in relation to major accidents and disasters, have been incorporated into their site design and will be in place during all phases/periods. This assessment assumes that the mitigation measures of the other developments would be implemented. Owing to the fact no significant residual effects have been identified no significant cumulative effects are anticipated.

STATEMENT OF EXPERTISE

This Environmental Statement (ES) has been prepared by competent experts, and the following statement outlines the relevant expertise and qualifications of the EIA Co-ordinator and the lead author of each technical chapter.

EIA Coordination

The ES has been prepared and the EIA co-ordinated by Thomas Hackett BSc (Hons) PISEP, Principal Environmental EIA Co-ordinator at SLR. Thomas has a BSc (Hons) in Geography from the University of Derby. Thomas has over seven years of experience of co-ordinating EIAs and preparing ESs for a range of developments, including mixed-use/residential, renewable energy and waste projects. Thomas is also a Practitioner member of the Institute of Sustainability and Environmental Professionals (ISEP) (formerly the Institute of Environmental Management and Assessment (IEMA)).

The ES has been reviewed by Susan Raine, BSc MSc PISEP, Technical Director at SLR. Susan has an MSc in Environmental Impact Assessment and Management from the University of Manchester and is also a Practitioner member of ISEP. Susan has extensive experience in the co-ordination of EIAs and the preparation of ESs for a range of developments.

SLR is a registrant of the IEMA EIA Quality Mark, demonstrating their commitment to excellence in their EIA activities. Susan and Thomas assist in the management of SLR's registration to the EIA Quality Mark, ensuring the high standard of the scheme is adhered to.

Air Quality

The air quality chapter has been prepared by Dr Paul Sanderson at SLR. Paul has over 8 years' experience in the environmental sector, is a full member of the Institution of Environmental Sciences (MIEnvSc) and Institute of Air Quality Management (MIAQM) and holds a BSc (Hons) degree in Chemistry and a PhD in Environmental Health. Paul has experience of undertaking a number of large, complex EIA projects examining the air quality impact of various schemes including commercial and residential developments. He has wide experience in the use of ADMS-Roads advanced dispersion model for undertaking detailed air quality modelling, regularly liaising with transport consultants on traffic data requirements for input into the model, as well as experience in air quality monitoring using nitrogen dioxide diffusion tubes across sites within the UK.

For ensuring that the air quality aspects of the Air Quality chapter has been appropriately addressed, technical support has been provided by Mariam Weatherley at SLR. Mariam is a Chartered Environmental Scientist and a full member of the Institution of Environmental

Sciences (MIEnvSc) and Institute of Air Quality Management (MIAQM) and holds a BSc (Hons) degree in Environmental Sciences / Environmental Biology and an MSc in Environmental Management. Mariam has experience in the environmental profession predominantly in relation to air quality, gained from over 15 years employment in this sector. Mariam's background in environmental consultancy has provided her with a good range of skills and knowledge through the involvement in air quality projects both as individual commissions and as part of EIAs for public and private sector clients, as well as leading teams of air quality specialists on technical assessments.

Ecology

The ecology chapter has been prepared by Mark Rose at CSA Environmental. Mark is an experienced practitioner with 15 years' full time experience in ecological consultancy, research and education. He holds a BSc in Zoology and MSc in Biodiversity Conservation from the University of Southampton, is a Chartered Ecologist and a full Member of the Chartered Institute of Ecology and Environmental Management. He is proficient in Ecological Impact Assessment (EclA) and mitigation planning in both statutory EIA and non-EIA projects. Mark is skilled in issues surrounding Habitat Regulations Assessment (HRA) and Biodiversity Net Gain (BNG), and securing European Protected Species (EPS) mitigation licences. He holds personal survey licences for bats, great crested newts, rare reptiles and dormice.

Transport

The transport chapter has been prepared by David Stoddart, Associate Director at Prime Transport Planning. David has over 20 years' experience in transport planning consultancy, is a chartered member of the Chartered Institute of Logistics and Transportation (CILT) and a member of the Chartered Institution of Highways and Transportation (CIHT) and holds a BA (Hons) degree in Geography. David has experience of undertaking numerous Environmental Statements, Transport Assessments and Travel Plans for developments of varying land uses across the UK. This has included designing and deriving mitigation measures to address traffic impact and enhance the accessibility by sustainable modes of transportation.

Soils and Agricultural Land

This chapter has been prepared by Mike Palmer, Director of Land Research Associates, a company specialising in soils and agricultural land assessment for over thirty years. Mike holds a PhD in agricultural land management and is a member of the British Society of Soil Science. He has over twenty years' experience in soil science quality and land quality assessment and has completed over forty EIA assessments on this topic.

Water Environment

The Water and Environment chapter has been prepared by Eric O'Connor at Enzygo. Eric has over 11 years' experience in hydrology consultancy and is a Chartered Member for the Institute for Water and Environmental Management (C.WEM). Eric holds a BSc (Hons) degree in physical geography and an MSc in River Basin Dynamics and Management. Eric has experience of undertaking numerous Flood Risk Assessments, Drainage Strategies and Environmental Statements and making recommendations for flood risk mitigation and enhancements across a range of sites and development projects in the UK.

Rights of Way, Access and Recreation

The Rights of Way, Access and Recreation ES chapter has been prepared by Sam Daly of FPCR Environment and Design Ltd (FPCR). Sam holds a Post Graduate Diploma in Landscape Architecture and has nearly 10 years' experience working as a Landscape Architect. Sam is also a Chartered Member of the Landscape Institute (CMLI). Sam has experience of carrying out Landscape and Visual Impact Assessments on a wide variety of projects and has worked on other ESs. Through his landscape work, Sam regularly considers the needs of rights of way users, the accessibility and connectivity of development proposals and recreation needs which influences design proposals through the provision of mitigation and enhancements for users.

Vulnerability to Major Accidents and Major Disasters

The Vulnerability to Major Accidents and Disasters chapter has been prepared by Thomas Hackett BSc PISEP of SLR. Thomas has a BSc in Geography and is also a Practitioner member of ISEP. Thomas has over seven years' professional experience working within the Environmental Planning sector and is experienced in the co-ordination of EIAs and the preparation of ESs for a range of developments, including the collation of assessment information across a range of disciplines and consideration of interrelationships between effects.

The chapter has been reviewed by Susan Raine, BSc (Hons) MSc PISEP, Technical Director (EIA) at SLR. Susan has an MSc in Environmental Impact Assessment and Management from the University of Manchester and is also a Practitioner member of ISEP. Susan has extensive experience in the coordination and preparation of EIAs for a range of developments.

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In accordance with Schedule 4 of the EIA Regulations, the following provides a reference list of the sources used in the preparation of the ES.

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GLOSSARY

Terminology	Explanation
AADT	Annual Average Daily Traffic. The total volume of traffic using a road averaged across a year. A standard measurement of traffic volume.
Above Ordnance Datum (aOD)	Ordnance Datum is the vertical datum used by ordnance survey as the basis for deriving altitudes on maps. Topography may be described using the level in comparison or 'above' ordnance datum.
Access	For the purpose of this report, access will include footpaths, cycleways and common land that form part of the existing Site context and those proposed as part of the development.
Agricultural Land Classification	Agricultural Land Classification is a standardised method for classifying the quality of agricultural land in England and Wales into one of five grades: Grade 1 (excellent), Grade 2 (very good), Grade 3 (good to moderate), divided into Subgrades 3a (good) and 3b (moderate), Grade 4 (poor), and Grade 5 (very poor).
Air Quality Management Areas (AQMA)	Areas designated by local authorities because they are not likely to achieve national air quality objectives by the relevant deadlines.
Air Quality Objectives	Pollutant objectives that local authorities have a duty to meet, as set out in the Air Quality Standards Regulation (2010).
Ambient	Background levels.
Analysis (Landscape)	The process of breaking the landscape down into its component parts to understand how it is made up.
aOD	Above Ordnance Datum
AONB	Areas of Outstanding Natural Beauty
APHA	Animal Plant and Health Agency
Aquifer	A body of permeable rock which can contain or transmit groundwater.
ASR	Annual Status Report
Assemblage (Ecology)	A group of species found in the same location.
Assessment (Landscape)	An umbrella term for description, classification and analysis of landscape.
Atmospheric Dispersion Modelling System (ADMS)	The air dispersion model used to predict NO ₂ , PM ₁₀ and PM _{2.5} concentrations.
Attenuation Pond	A pond which holds water and is designed to control the passage of water from surface run-off and/or flooding to the chosen drainage system i.e. watercourse, sewer.
Automatic Urban and Rural Network (AURN)	Continuous monitoring station for pollutants, NO ₂ , PM ₁₀ and PM _{2.5} .
Average Annual Daily Traffic (AADT)	AADT is the typical daily (7 day) weekly flow averaged over a one-year period.
Avoidance	Prevention of impacts occurring, having regard to predictions about potentially negative environmental effects (e.g. project decisions about site location or design).
AWHP	Adverse Weather and Health Plan
Baseline (traffic scenario)	The existing highway network at the current year or in a future year without any interventions other than previously consented physical changes.
Baseline conditions	The conditions that would pertain in the absence of the proposed project at the time that the project would be constructed / operated / decommissioned. The definition of these baseline conditions should be informed by changes arising from other causes (e.g. other consented developments).
Bedrock	Bedrock more than 2.6 million years old, and generally underlying superficial deposits.

Terminology	Explanation
Best and most versatile agricultural land	Land in grades 1, 2 and 3a of the Agricultural Land Classification; agricultural land that it is important to retain free from development.
BGS	British Geological Survey
Biodiversity	The biological diversity of the earth's living resources. The total variability among organisms and ecosystems. In common usage, and within these Guidelines, biodiversity is used to describe the conservation of the natural environment, rather than describing the variation within it.
BN	British National
Borehole	A hole drilled into the ground to measure the level of water below the ground and the geology of the ground in that area.
Carrying capacity (Ecology)	The maximum number of organisms or amount of biomass that can be supported in a given area or by an ecosystem.
CBRN	Chemical, Biological, Radiological and Nuclear
CCC	Climate Change Committee
CEMP	Construction Environmental Management Plan. The CEMP details how the construction project will avoid, minimise and mitigate its environmental impact.
CERC	Cambridge Environmental Research Consultants (Environmental Software and Services).
CET	Central England Temperature
CFCs	Chlorofluorocarbons (greenhouse gas). The collective term used to describe chemicals made up of atoms containing Carbon and Fluorine.
CFR	Case fatality rate
Classification	A process of sorting the landscape into different types using selected criteria but without attaching relative values to different sorts of landscape.
Clean Air Zone (CAZ)	Where certain types of vehicles cannot enter without meeting set emission standards or facing a penalty charge.
CME	Coronal Mass Ejection
COMAH	Control of Major Accident Hazard
CNI	Critical National Infrastructure
Committed Development	Development that benefits from planning consent.
Compensation	The measures taken to offset or compensate for residual adverse effects which cannot be mitigated or for which mitigation cannot entirely eliminate adverse effects.
Competent person (to prepare site investigation information)	A person with a recognised relevant qualification, sufficient experience in dealing with the type(s) of pollution or land instability, and membership of a relevant professional organisation.
Completed Development	Within the ES this phase refers to the Proposed Development when fully built and operational.
Confluence	The meeting of two or more waterbodies.
Connectivity (ecology)	A measure of the functional availability of the habitats needed for a particular species to move through a given area. Examples include the flight lines used by bats to travel between roosts and foraging areas or the corridors of appropriate habitat needed by some slow colonising species if they are to spread.
Conservation (for heritage policy)	The process of maintaining and managing change to a heritage asset in a way that sustains and, where appropriate, enhances its significance.
Conservation Area	An area of special environmental or historical importance that is protected from changes by law.

Terminology	Explanation
Conservation objective (ecology)	Objective for the conservation of biodiversity (e.g. specific objective within a management plan or broad objectives of policy).
Constraints Map	Map showing the location of important resources and receptors.
Countryside	The rural environment and its associated communities (including the coast).
CTMP	Construction Traffic Management Plan. A formal document devised to minimise the impact of construction traffic on the highway network.
Cumulative effects	The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.
Design Manual for Roads and Bridges	A comprehensive series of documents, including standards, specifications and standard details, for the design of new road infrastructure.
Designated heritage asset	A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation.
Designated Site	Areas of nature and countryside that have a special status and are protected because of their natural and cultural importance.
Development plan	This includes adopted Local Plans, neighbourhood plans and the London Plan, as defined in section 38 of the Planning and Compulsory Purchase Act 2004 (regional strategies have all been abolished by Order using powers taken in the Localism Act 2011).
Distribution (ecology)	The geographical presence of a feature. This can depend on factors such as climate and altitude.
Diversity	Where a variety of qualities or characteristics occurs.
Do Minimum (traffic scenario)	The existing highway network in the future with Local Plan based growth and committed development based growth.
Do Nothing Situation	Continued change/evolution of landscape or of the environment in the absence of the proposed development.
Do Something (traffic)	As per the Do Minimum (traffic) but with mitigation measures added to the highway network.
Do-nothing scenario	The predicted future environmental conditions which would exist in the absence of the development.
Drainage Board (DB)	Drainage boards are an integral part of water level management in the UK. Each DB is a local public authority established in areas of special drainage need in England and Wales. They have permissive powers to manage water levels within their respective drainage districts. They undertake works to reduce flood risk to people and property and manage water levels to meet local needs.
DSIT	Department for Science, Innovation and Technology
DTM	Digital Terrain Model
EAB	Emerald Ash Borer
Ecological feature	Habitats, species or ecosystems.
Ecological networks	These link sites of biodiversity importance.
Ecosystem	A community of interdependent plants and animals together with the environment which they inhabit and with which they interact.
Ecosystem services	The benefits people obtain from ecosystems such as, food, water, flood and disease control and recreation.
Effect	A physical or measurable change to the environment attributable to the project.

Terminology	Explanation
Effect (ecology)	Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow.
EIA Directive	Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment. Reproduced in the Guide to Procedures.
EIA Planning Regulations	In England and Wales these are The Town and Country Planning (Environmental Impact Assessment) Regulations 2017, plus amendments.
Element	A component part of the landscape (e.g. roads, hedges, woods).
Enhancement	Landscape improvement through restoration, reconstruction or creation.
Enhancement (ecology)	Improved management of ecological features or provision of new ecological features, resulting in a net benefit to biodiversity, which is unrelated to a negative impact or is 'over and above' that required to mitigate/compensate for an impact.
Environment	Our physical surroundings including air, water and land.
Environment Agency	The EA is a non-departmental public body of the Department for Environment Food and Rural Affairs. Its purpose is, "to protect or enhance the environment, taken as a whole" (section 4, Environment Act 1995) to promote the objective of achieving sustainable development.
Environmental Assessment	A process by which information about the environmental effects of a project is collected, both by the developer and from other sources, and taken into account by the relevant decision making body before a decision is given and whether the development should go ahead.
Environmental Effects	The consequences for human being in terms of health and well-being, including the well-being of ecosystems and natural systems on which human survival depends, which stem from environmental impacts.
Environmental Impact	The process whereby a change, which may be adverse, beneficial, or both, is brought about in the existing environment as a result of development activities.
Environmental impact assessment (EIA)	The evaluation of the effects of particular development proposals on the environment.
Environmental Statement (ES)	A document which sets out the developer's assessment of the likely effects of the project on the environment and which is submitted in conjunction with an application for planning permission.
EPUK	Environmental Protection UK
Erosion	The process where rocks and the channels of watercourses are broken down by the force of the flowing water.
European site	This includes candidate Special Areas of Conservation, sites of national importance, Special Areas of Conservation and Special Protection Areas, and is defined in regulation 12 of the Conservation of Habitats and Species Regulations 2017 (as amended). Consistent with their treatment in national policy, Ramsar sites are taken to be European sites.
EV	Electric Vehicle
Exceptions Test	The Exceptions Test ensures that development is permitted in flood risk areas only in exceptional circumstances and when strict qualifying conditions have been met. It is carried out if the Sequential Test demonstrates that a development cannot be located in areas of low flood risk.
Existing Sensitive Receptors (ESR) (Air Quality)	Existing residential dwellings, school or care homes, located in areas that could be impacted by the air quality effects of the proposed development.
EV	Electric Vehicle

Terminology	Explanation
Fauna	All members of the animal kingdom: vertebrates (e.g. birds, mammals and fish) and invertebrates (e.g. insects).
Field Capacity Days	The number of days at which soil is saturated with water and any water from rainfall would infiltrate quickly under the force of gravity or create waterlogging.
Flood Zone 1	This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding.
Flora	All members of the plant kingdom: higher ferns, ferns and fern allies, mosses and liverworts, algae and phytoplankton, fungi and lichens.
FMI	Financial Market Infrastructures
Forecast traffic	The level of traffic anticipated in a given future year.
Friction	A number of highway conditions, both physical and behavioural, that can lead to speeds slower than the normal free flow of traffic. Such friction can include parked vehicles, loading/unloading, flooding, turning movements, poor used behaviour/ill-discipline.
Geology	The scientific study of the origin, history and structure of the earth.
GLVIA	Guidelines for Landscape and Visual Impact Assessment
Grade Separated Junction	A junction constructed across two or more levels. In this instance the A27/A3023 roundabout.
Green infrastructure (GI)	A planned network of high-quality green spaces and environmental features, designed as a multi-functional resource to deliver biodiversity and quality of life benefits while having regard to and enhancing landscape character and wildlife habitats.
Greenhouse Gas (GHG)	Gases such as carbon dioxide, methane and nitrous oxide, that trap heat in the atmosphere.
Groundwater	All water which is below the surface of the ground in the saturated zone and in direct contact with the ground or subsoil.
Groundwater Directive	Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration. Transposed into law in England and Wales via the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003.
Groundwater Special Protection Zone (SPZ)	Areas of groundwater or aquifers that are protected against any potential pollution or contaminants.
ha	hectares
Habitat	The place or type of site where an organism or population naturally occurs. Often used in the wider sense referring to major assemblages of plants and animals found together.
Habitats Regulations Assessment	An assessment of projects (or plans) potentially affecting European sites in the UK, required under the Habitats Regulations.
Heritage	Historic or cultural associations.
Heritage asset	A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage asset includes designated heritage assets and assets identified by the local planning authority (including local listing).
HGV	Heavy Goods Vehicle
Historic environment	All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.

Terminology	Explanation
HITA	Hayling Island Transport Assessment. A study undertaken by experienced consultants on behalf of HBC to consider the highways, transportation and traffic issues associated with the Local Plan.
HPAI	Highly Pathogenic Avian Influenza
HSE	Health and Safety Executive
HV	High Voltage
Hydrogeology	The branch of geology dealing with the waters below the earth's surface and with the geological aspects of surface waters.
Hydrology	The study of the movement, distribution, and quality of water.
IAQM	Institute of Air Quality Management
LAQM.TG	Local Air Quality Management Technical Guidance
Impact (Ecology)	Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow.
Important ecological features	Ecological features requiring specific assessment within EcIA. Ecological features can be important for a variety of reasons (e.g. quality and extent of designated sites or habitats, habitat / species rarity).
Indirect Impacts	Impacts on the environment, which are not a direct result of the development but are often produced away from it or as a result of a complex pathway. Sometimes referred to as secondary impacts.
Infiltration	The process in which water on the surface soaks into the soils and geology below it.
Infiltration basin	A pond that holds water and is designed to control the passage of water from surface run-off and/or flooding as it soaks back into the ground.
IPCC	Intergovernmental Panel on Climate Change
Journey Time	The time taken in minutes from one point to another.
kWh	kilowatt-hour
Land Use	What land is used for, based on broad categories of functional land cover, such as urban and industrial use and the different types of agriculture and forestry.
Landscape	Human perception of the land conditioned by knowledge and identity with a place.
Landscape Character	The distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement. It creates the particular sense of place of different areas of the landscape.
Landscape Effects	Change in the elements, characteristics, character and qualities of the landscape as a result of development. These effects can be positive or negative.
Landscape Feature	A prominent eye-catching element, for example, wooded hilltop or church spire.
Landscape Resource	The combination of elements that contribute to landscape context, character and value.
Landscape Value	The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons.
Lead Local Flood Authority	Lead Local Flood Authorities have responsibility for developing a Local Flood Risk Management Strategy for their area covering local sources of flooding. The local strategy produced must be consistent with the national strategy. It will set out the local organisations with responsibility for flood risk in the area, partnership arrangements to ensure co - ordination between these, an assessment of the flood risk and plans and actions for managing the risk.

Terminology	Explanation
LEAP	Locally Equipped Area for Play
Listed Building	A building, object or structure that has been judged to be of national importance in terms of architectural or historic interest and included on a special register.
Local Plan	The plan for the future development of the local area, drawn up by the local planning authority in consultation with the community. In law this is described as the development plan documents adopted under the Planning and Compulsory Purchase Act 2004. Current core strategies or other planning policies, which under the regulations would be considered to be development plan documents, form part of the Local Plan. The term includes old policies which have been saved under the 2004 Act.
Local planning authority	The public authority whose duty it is to carry out specific planning functions for a particular area.
Local Transport Plan	A document that sets out the long-term strategy for travel and transport within an area for a defined plan period.
LP	Low Pressure
LRF	Local Resilience Forum
MAGIC	Multi-Agency Geographic Information for the Countryside
Magnitude	A combination of the scale, extent and duration of an effect.
Main River	Used to describe a water course in respect of which the Environment Agency has permissive powers in relation to its management.
Major Accident	An event which threatens immediate or delayed serious environmental effects to human health, welfare and/or the environment, and requires the use of resources beyond those of the client or its appointed representatives (i.e. contractors) to manage.
MCA	Marine Coastguard Agency
Methodology	The specific approach and techniques used for a given study.
Microsimulation	An advanced method of traffic modelling which considers the operation of highway networks in a high level of detail, considering aspects such as delays, queues, capacity and journey time.
Minor Drain	Used to describe a water course owned and operated by a local Drainage Board, a Lead Local Flood Authority, or a private landowner.
Mitigation	Measures, including any process, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project.
MMO	Marine Management Organisation
Model Verification	A comparison of the modelled results versus monitoring results at relevant locations to enable the adjustment of model outputs, minimising the inherent uncertainties associated with dispersion modelling.
National Landscape	Formally Area of Outstanding Natural Beauty (AONB).
National Trails	Long distance routes for walking, cycling and horse riding.
NATO	North Atlantic Treaty Organization
Natural drainage patterns	The course in which a watercourse or surface water naturally flows and drains away.
NCSC	National Cyber Security Centre
NEAP	Neighbourhood Equipped Area for Play
NETS	National Electricity Transmission System
NGR	National Grid Reference
Nitrate Vulnerable Zone (NVZ)	An area designated as being at risk from agricultural nitrate pollution.

Terminology	Explanation
Non Technical Summary	A report which briefly describes the main points discussed in the Environmental Statement in a clear manner, without the use of technical jargon and phraseology.
NO _x	Nitrogen Oxides (greenhouse gas). The collective term used to describe various oxides of Nitrogen.
NO ₂	Nitrogen Dioxide
NPPF	National Planning Policy Framework
Open space	All open space of public value, including not just land, but also areas of water (such as rivers, canals, lakes and reservoirs) which offer important opportunities for sport and recreation and can act as a visual amenity.
OS	Ordnance Survey
Pathways	The routes by which impacts are transmitted through air, water, soils or plants and organisms to their receptors.
Ped	Soil particle.
Perception (of landscape)	The psychology of seeing and possibly attaching value and/or meaning (to landscape).
Perched groundwater	An area of water trapped in the ground above an aquifer that cannot drain away due to impermeable soils and/or geology.
Percolation	The downwards vertical movement of water within soil.
Permeability	The measure of the ability of a porous material (often, a rock or unconsolidated material) to allow fluids to pass through it.
Phase 1 Habitat Survey	An ecological survey technique that provides a standardised system to record vegetation and wildlife habitats. It enables a basic assessment of habitat type and its potential importance for nature conservation. Each habitat type or feature is identified and presented on a map.
Planning condition	A condition imposed on a grant of planning permission (in accordance with the Town and Country Planning Act 1990) or a condition included in a Local Development Order or Neighbourhood Development Order.
Platoon	A number of vehicles following a lead vehicle.
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less.
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less.
Pollution	Anything that affects the quality of land, air, water or soils, which might lead to an adverse impact on human health, the natural environment or general amenity. Pollution can arise from a range of emissions, including smoke, fumes, gases, dust, steam, odour, noise and light.
Population (ecology)	A collection of individuals (plants or animals), all of the same species and in a defined geographical area.
POS	Public Open Space.
Potential impacts	Impacts, which could occur in the absence of appropriate design modifications or preventative measures.
PPE	Personal Protection Equipment
Precautionary Principle	Principle applied, to err on the side of caution where significant environmental damage may occur, but knowledge on the matter is incomplete, or when the prediction of environmental effects is uncertain.
Predicted impacts	Those impacts which are predicted as a consequence of the development although the nature and severity of their effect will be conditioned by the scope for mitigation.

Terminology	Explanation
Preference	The liking by people for one particular landscape element, characteristic or feature over another.
Priority habitats and species	Species and Habitats of Principle Importance included in the England Biodiversity List published by the Secretary of State under section 41 of the Natural Environment and Rural Communities Act 2006.
Priority junction	A junction such as a T junction or crossroads that is not traffic signal or roundabout controlled.
Proposed Sensitive Receptors (PSR)	Proposed residential dwellings, school or care homes, located within the proposed development.
PRoW	Public Right(s) of Way.
Public Right(s) of Way (PRoW)	Footpaths (for walking, running, mobility scooters or powered wheelchairs); Bridleways (for walking, horse riding, bicycles, mobility scooters or powered wheelchairs); Restricted byways (for any transport without a motor and mobility scooters or powered wheelchairs); Byways open to all traffic (for any kind of transport, including cars, but mainly used by walkers, cyclists and horse riders).
Quality	(See landscape quality)
Ramsar sites	Wetlands of international importance, designated under the 1971 Ramsar Convention.
Rarity	A measure of relative abundance.
Receptor	Physical landscape resource, special interest or viewer group that will experience an effect.
Receptors	A component of the natural or man-made environment such as water, air, a building, or a plant that is affected by an impact.
Recreation	For the purpose of this report, outdoor recreation can be broadly defined to include both formal recreation and informal recreation. Formal recreation includes provision of sports facilities, such as football pitches, artificial turf pitches, sports pavilions and allotments and also equipped play areas for children. Informal recreation has a broader meaning and can include open space for games and play as well as informal footpaths and cycleways.
Regulatory Authority	The planning or other authority responsible for planning consents or project authorisation (synonymous with Determining or Competent Authority).
Residual Effects	Those effects of a development that cannot be mitigated following implementation of mitigation proposals.
RSA	Road Safety Audit. A formal audit of a proposed highway design by qualified professionals.
Runoff rates	The quantity of water that drains off an area within a specific time-period, usually measured in litres per second.
Safeguarding zone	An area defined in Circular 01/03: Safeguarding aerodromes, technical sites and military explosives storage areas, to safeguard such sites.
Scenario	A picture of a possible future.
Scoping	An initial stage in determining the nature and potential scale of the environmental impacts arising from the proposed development, and assessing what further studies are required to establish their significance.
Sedimentation	The deposition of soil and silt from watercourses and surface runoff.
Sensitive Receptor (Water Environment)	An area that is especially vulnerable to pollution, contamination or man-made change, such as a designated Site.
Sensitivity	(See landscape sensitivity)
SFRA	Strategic Flood Risk Assessment.
SGN	Scotia Gas Networks

Terminology	Explanation
Significant effect (ecology)	An effect that either supports or undermines biodiversity conservation objectives for 'important ecological features'.
Significant environmental effect (in relation to a major accidents and/or disasters assessment)	Could include the loss of life, permanent injury and temporary or permanent destruction of an environmental receptor which cannot be restored through minor clean-up and restoration.
Site investigation information	Includes a risk assessment of land potentially affected by contamination, or ground stability and slope stability reports, as appropriate. All investigations of land potentially affected by contamination should be carried out in accordance with established procedures (such as BS10175 (2001) Code of Practice for the Investigation of Potentially Contaminated Sites). The minimum information that should be provided by an applicant is the report of a desk study and site reconnaissance.
Site of Special Scientific Interest (SSSI)	Sites designated by Natural England under the Wildlife and Countryside Act 1981.
SMD	Soil moisture deficit
Soakaway testing	A test which measures the rate water can drain into the ground.
Soil	The surface layer of the Earth's crust composed of weathered rock, alive and dead organic matter (plant roots, soil fauna and microorganisms), water and air. Soil has important functions such as providing habitat for plant growth, transformation of mineral and organic compounds, carbon storage (in soil organic matter, or humus), water and air filtration, support for buildings, protection of archaeological artefacts. Soil is typically divided into horizontal layers, the main ones are: topsoil and subsoil. Topsoil is the most biologically active and fertile surface layer rich in organic matter. Typical topsoil depth is 25 to 35 cm (plough layer in arable farming). Subsoil is typically characterised by low content of organic matter (except peat or organic soils) and is less biologically active and fertile, it typically extends to 1.20m or bedrock, if the soil is shallower.
Soil series	Soil series is the lower categorical level of the soil classification used in England and Wales. Soils series are defined using a combination of three main properties, the broad type of parent material present (substrate type), the texture of the soil material (textural grouping) and the presence or absence of material with a distinctive mineralogy.
Special Areas of Conservation	Areas given special protection under the European Union's Habitats Directive, which is transposed into UK law by the Habitats and Conservation of Species Regulations 2010.
Special Protection Areas (SPA)	Areas which have been identified as being of international importance for the breeding, feeding, wintering or the migration of rare and vulnerable species of birds found within European Union countries. They are European designated sites, classified under the Birds Directive.
SSE	Scottish and Southern Energy
Superficial geology	Typically refers to geological deposits that are less than 2.6 million years old. These recent unconsolidated sediments may include stream channel and floodplain deposits, beach sands, talus gravels and glacial drift and moraine. All pre-quaternary deposits are referred to as bedrock.
Supplementary planning documents	Documents, which add, further detail to the policies in the Local Plan. They can be used to provide further guidance for development on specific sites, or on particular issues, such as design. Supplementary planning documents are capable of being a material consideration in planning decisions but are not part of the development plan.

Terminology	Explanation
Surface water runoff	An unconfined flow of water over ground surface.
Sustainability	The principle that the environment should be protected in such a condition and to such a degree that ensures new development meets the needs of the present without compromising the ability of future generations to meet their own needs.
Sustainable Drainage System (SuDS)	Sustainable Drainage Systems are drainage solutions that provide an alternative to the direct channelling of surface water through networks of pipes and sewers to nearby watercourses.
Sustainable transport modes	Any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra low emission vehicles, car sharing and public transport.
Synergistic effect	Occurs when the sum of two effects together is greater than the sum of the effects separately.
t	Tonne
Technique	Specific working process.
TfL	Transport for London
Threshold	A specified level in grading effects e.g. of magnitude, sensitivity or significance.
Topography	The natural or artificial features, level and surface form of the ground surface.
Toucan crossing	A signal-controlled crossing usable by both cyclists and pedestrians.
Traffic calming	A number of measures which can help to reduce vehicle speeds or improve driver behaviour.
Transport Assessment	A comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures will be required to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport and what measures will need to be taken to deal with the anticipated transport impacts of the development.
Transport Assessment	A comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures will be required to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport and what measures will need to be taken to deal with the anticipated transport impacts of the development.
Travel plan	A long-term management strategy for an organisation or site that seeks to deliver sustainable transport objectives through action and is articulated in a document that is regularly reviewed.
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Treated Effluent	Water that has received primary, secondary, or advanced treatment to reduce its pollution or health hazards and is subsequently released from a wastewater facility after treatment.
TRICS Database	TRICS (Trip Rate Information Computer System) is a database of trip rates for developments for transport planning purposes, specifically to quantify the trip generation of new developments.
Trip Generation	Quantification of travel patterns arising from a development proposal.
UKCP	United Kingdom Climate Projections
UKHSA	UK Health Security Agency

Terminology	Explanation
Undefended Flood Zone	Environmental Agency mapped river and sea flood water extents ignoring the presence of flood defences.
UV	Ultraviolet
Visual Amenity	The value of a particular area or view in terms of what is seen.
Visual Effect	Effects on specific views and on the general visual amenity experienced by people.
Visual Envelope	Extent of potential visibility to or from a specific area or feature.
Water body/catchment	The UK is divided into hundreds of water bodies/catchments which are areas through which water is carried away by a drainage system such as river, basins or reservoirs.
Water Framework Directive (WFD)	The WFD (more formally Directive 2000/60/EC) is designed to improve and integrate the way water bodies are managed throughout Europe. In the UK, it came into force on 22 December 2000, and was transposed into UK law (transposed) in 2003. Member States must aim to reach good chemical and ecological status in inland and coastal waters by 2015 subject to certain limited exceptions. The WFD is designed to enhance the status and prevent further deterioration of aquatic ecosystems and associated wetlands; promote the sustainable use of water; reduce pollution of water especially by 'priority' and 'priority hazardous' substances; and ensure progressive reduction of groundwater pollution. The WFD establishes a strategic framework for managing the water environment. It requires a management plan for each river basin to be developed every 6 years. The plans are based on a detailed analysis of the impacts of human activity on the water environment and incorporate a programme of measures to improve water bodies where required.
Water quality	This refers to the chemical, physical and biological characteristics of water which may have been contaminated as a result of human activities.
Water resources	Natural resources of water such as drinking water or irrigation water.

NEXT STEPS

This ES has been submitted to Havant Borough Council (HBC) for the respective Planning Officers to consider in consultation with the relevant stakeholders in the context of planning policy, prior to making a recommendation to the planning committee on the planning application.

During the period of determination, HBC will contact the relevant government bodies and agencies, and other consultees regarding the Proposed Development. Members of the public are also invited to make comments on the planning application.

Comments can be sent to:

Planning Development
Public Service Plaza
Civic Centre Road
Havant
Hampshire
PO9 2AX.

Copies of the Environmental Statement

The ES, including a copy of the planning application documents and the NTS, will be available to view online on the HBC planning website:

<https://www.havant.gov.uk/planning>

Hard copies or CDs of the ES and NTS are also available and are charged at £25 per CD and £450 per hard copy plus P+P. Hard copies can be obtained by contacting Thomas Hackett at SLR on +44 3300 886631.

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