Habitat Regulations Assessment of the Portsmouth Local Plan

Regulation 19

Portsmouth Council

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Quality information

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1. Introduction

Background

1.1 AECOM was appointed by Portsmouth City Council (PCC) in 2020 to undertake Habitats Regulations Assessments of its Local Plan (the PLP). An HRA including both Test of Likely Significant Effects and Appropriate Assessment was produced in 2021 to accompany the Regulation 18 Draft Local Plan. This current report is a Habitats Regulations Assessment (HRA) of its Regulation 19 Draft Local Plan and builds on the previous HRA for the Regulation 18 version. The objective of this assessment was to identify any aspects of the Plan that might cause Likely Significant Effects (LSEs) on, or adverse effects on the integrity of, Habitats sites (also known as "European sites"), namely Special Areas of Conservation (SACs), Special Protection Areas (SPAs), candidate Special Areas of Conservation (SACs), potential Special Protection Areas (pSPAs) and, as a matter of Government policy, Ramsar sites. The assessment is undertaken alone and where necessary in-combination with other plans and projects. Under the Conservation of Habitats and Species Regulations 2017 (as amended), an Appropriate Assessment is required where a plan or project is likely to have a significant effect upon a Habitats Site, either individually or 'in combination' with other projects. Should the HRA identify potential adverse effects, it also advises on appropriate policy mechanisms for delivering mitigation. Should it not prove possible to avoid or mitigate all adverse effects on integrity a further post-Appropriate Assessment stage is required which involves a series of derogation tests which must be passed before the Local Plan can be adopted.

1.2 Portsmouth City lies adjacent to the Solent on the southern coast of England. Being an island, it has a unique geographic location and relationship to the sea. The authority comprises approx. 40.1km^2 and is home to approx. 208,100 people, with a population density higher than some parts of London. The Reg 19 PLP seeks to deliver an ambitious vision of sustainable growth across the plan period 2020 – 2040. It allocates overall quanta for development and growth, including at Strategic Sites where this growth will be focused. The PLP provides a target of 13,603 new residential dwellings and 138,429m^2 of employment floorspace in Portsmouth City between 2020 and 2040. This does not meet the housing need in the City as defined by the standard methodology and explored further in the Housing and Economic Development Needs Assessment (HEDNA[1]) due to its constrained geography and the need to protect the City's rich environmental, cultural and historical heritage.

1.3 Despite its highly urban nature, Portsmouth City is also surrounded by statutory sites designated for their conservation interest: the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar, the Solent & Dorset Coast SPA and the Solent Maritime SAC. Further Habitats sites lie within 10km of the city's boundary, including the Solent & Isle of Wight Lagoons SAC and the Solent & Southampton Water SPA / Ramsar.. These SPAs / Ramsars / SACs have a special significance for their breeding (in the case of tern species) and overwintering bird populations of international importance and (in the case of the Solent Maritime SAC) for a range of maritime and coastal habitats.

1.4 The wider Solent area is generally regarded as a region of significant ecological value and sensitivity. Given the urban nature of southern Hampshire, an extensive evidence base relating to potential impact pathways has been developed. Furthermore, there are well-established issues (e.g. recreational disturbance and functionally linked habitat loss) for which strategic mitigation measures have already been developed. These include the Bird Aware Solent project and the Solent Waders and Brent Goose Strategy (SWBGS), from which the HRA draws where relevant. Furthermore, the PLP includes several proposals (e.g. Policy PLP3) that will require their own bespoke assessment when proposals are more developed for subsequent planning applications and Transport & Works Act Orders. However, they are discussed as fully as possible at this time in the Regulation 19 HRA.

Legislation

1.5 The UK left the EU on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 ("the Withdrawal Act"). The UK is no longer a member of the European Union. However, Habitats Regulations Assessment continues as set out in the Conservation of Habitats and

[1] Housing and Economic Development Needs Assessment

Species (Amendment) (EU Exit) Regulations 2019[2]. Figure 1 below sets out the legislative basis for the HRA.

1.6 The HRA process applies the 'Precautionary Principle'[3] to Habitats sites. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity (coherence of structure and function) of the Habitats site(s) in question. Plans and projects with predicted adverse impacts on Habitats sites may still be permitted if there are no alternatives to them and there are imperative reasons of overriding public interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network. In order to ascertain whether or not site integrity will be affected, an Appropriate Assessment should be undertaken of the plan or project in question. If site integrity will be harmed a series of derogation tests (Alternative Solutions, IROPI and Compensatory Measures) must be passed before the Local Plan can be adopted.

Conservation of Habitats and Species Regulations 2017 (as amended)

Regulation 105
Where a land use plan—
(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and
(b) is not directly connected with or necessary to the management of the site,
the plan-making authority for that plan must, before the plan is given effect, make an appropriate assessment of the implications for the site in view of that site's conservation objectives.
(2) The plan-making authority must for the purposes of the assessment consult the appropriate nature conservation body and have regard to any representations made by that body within such reasonable time as the authority specifies.
(3) The plan-making authority must also, if it considers it appropriate, take the opinion of the general public, and if it does so, it must take such steps for that purpose as it considers appropriate.
(4) In the light of the conclusions of the assessment, and subject to regulation 107, the plan-making authority must give effect to the land use plan only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be).

Regulation 107
(1) If the plan-making authority is satisfied that, there being no alternative solutions, the land use plan must be given effect for imperative reasons of overriding public interest (which, subject to paragraph (2), may be of a social or economic nature), it may give effect to the land use plan notwithstanding a negative assessment of the implications for the European site or the European offshore marine site (as the case may be).
(2) Where the site concerned hosts a priority natural habitat type or a priority species, the reasons referred to in paragraph (1) must be either—
(a) reasons relating to human health, public safety or beneficial consequences of primary importance to the environment; or
(b) any other reasons which the plan-making authority, having due regard to the opinion of the European Commission, considers to be imperative reasons of overriding public interest.

Regulation 109
Where in accordance with regulation 107 a land use plan is given effect notwithstanding a negative assessment of the implications for a European site or a European offshore marine site, the appropriate authority must secure that any necessary compensatory measures are taken to ensure that the overall coherence of the National Site Network is protected.

Figure 1: The legislative basis for the HRA process

[2] these don't replace the 2017 Regulations but are just another set of amendments
[3] The Precautionary Principle, The Precautionary Principle assists the decision-making process in the face of a lack of scientific certainty. The Rio Declaration 1992 defines the principle as follows: "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

1.7 For the purposes of the Portsmouth Local Plan and the associated HRA, Portsmouth City Council is the plan-making authority (essentially, the competent authority for the plan). The 'appropriate authority' for the purpose of regulation 109 is the Secretary of State.

1.8 Over time the phrase 'Habitats Regulations Assessment' (HRA) has come into wide currency to describe the overall process set out in the Regulations from screening through to IROPI. This has arisen in order to distinguish the process from the individual stage described in the law as an 'Appropriate Assessment'.

1.9 As the legislative basis for HRAs derives, historically, from EU law, much of the relevant case law that defines the meaning and scope of the requirements of HRA is from the European Court of Justice. Although no longer binding in UK law, the jurisprudence of the European Court of Justice is still considered relevant and persuasive and is referred to in this HRA.

Scope of the Project

1.10 There is no guidance that dictates the physical scope of an HRA of a Plan document in all circumstances. Therefore, in considering the physical scope of the assessment, AECOM was guided primarily by the identified impact pathways (called the source-pathway-receptor model). Briefly defined, impact pathways are routes by which the implementation of a policy within a Local Plan document can lead to an effect upon a Habitats designated site. An example of this would be new residential development resulting in an increased population and thus increased recreational pressure, which could then affect Habitats sites by, for example, disturbance of wintering or breeding birds. The following Habitats sites were included in the scope of assessment:

- All sites within the boundary of Portsmouth City; and,
- Other sites shown to be linked to development within the authority boundary through a known impact 'pathway' (discussed below); generally, to a distance of 10km.

1.11 These distances were then refined for individual impact pathways based upon guidance and data discussed in Section 4.

1.12 In order to fully inform the screening process and / or Appropriate Assessment, a number of documents and studies have been consulted to form the evidence base for this HRA. These include:

- Future development proposed in the Local Plans for adjoining authorities and their accompanying HRAs (where available):
    - Eastleigh Local Plan (adopted 2022)
    - Southampton Local Plan (Core Strategy and Local Plan Review adopted 2015)
    - Fareham Local Plan (adopted 2023)
    - Gosport Local Plan (adopted 2015, new Regulation 18 Local Plan dated 2021)
    - Havant Local Plan (adopted 2011, new Local Plan being developed)
    - East Hampshire Local Plan (Joint Core Strategy adopted 2014, new Local Plan being produced)
    - New Forest District Local Plan (adopted 2020)
    - New Forest National Park Local Plan (adopted 2020)
    - Winchester Local Plan (Core Strategy adopted 2013, new Local Plan being produced)
    - Chichester Local Plan (adopted 2015, new Local Plan being produced)
    - Isle of Wight Local Plan (adopted 2012; new Local Plan being produced)

- Solent Disturbance and Mitigation Project (SDMP) Phases 1 to 3 (the SDMP involved numerous research studies, including visitor surveys, bird disturbance fieldwork and a modelling study) and the resulting Bird Aware Solent mitigation project[4];
- Solent Waders and Brent Goose Strategy (SWBGS, identifies supporting habitats important to Solent's SPAs / Ramsars)[5];
- Conservation Objectives and Supplementary Advice on the Conservation Objectives for Habitats sites;
- Traffic modelling undertaken on behalf of Portsmouth City Council;
- Partnership for South Hampshire Spatial Position Statement 2023[6]
- The 2022 Water Resources Management Plan (WRMP) and East Hampshire Drainage and Wastewater Management Plan published by Portsmouth Water and their HRAs;
- The UK Air Pollution Information System (www.apis.ac.uk); and
- Multi Agency Geographic Information for the Countryside (MAGIC) and its links to SSSI citations and the JNCC website (www.magic.gov.uk)

The Layout of this Report

1.13 Chapter 2 of this report explains the methodology by which this HRA has been carried out, including the three core stages (screening for Likely Significant Effects, Appropriate Assessment (including mitigation) and Derogations) that constitute the HRA process. Chapter 3 provides detail on the Habitats sites relevant to Portsmouth City, including an introduction to the sites, a summary of their qualifying habitats / species, Natural England Conservation Objectives and the current threats and pressures operating in these sites. Detailed background on the main impact pathways identified in relation to the PLP and Habitats Sites is provided in Chapter 4. Chapter 5 sets out the screening assessment of Likely Significant Effects (LSEs) of the Plan's policies (see Appendix B for the screening tables of Plan policies and site allocations). Chapter 6 presents the Appropriate Assessment of the impact pathways and Plan policies for which LSEs could not be excluded. The conclusions and recommendations arising from the HRA process are set out in Chapter 7. Chapter 8 assesses those parts of the Local Plan that are considered to have adverse effects on the integrity of designated sites against the statutory derogation tests.

Quality Assurance

1.14 This report was undertaken in line with AECOM's Integrated Management System (IMS). Our IMS places great emphasis on professionalism, technical excellence, quality, environmental and Health and Safety management. All staff members are committed to establishing and maintaining our certification to the international standards BS EN ISO 9001:2008 and 14001:2004 and BS OHSAS 18001:2007. In addition, our IMS requires careful selection and monitoring of the performance of all sub-consultants and contractors.

1.15 All AECOM Ecologists working on this project are members (at the appropriate level) of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct (CIEEM, 2017).

[4] http://www.solentems.org.uk/natural_environment_group/SRMP/SDMP/
[5] https://solentwbgs.wordpress.com/
[6] PfSH Spatial Position Statement 2023 - Partnership for South Hampshire (push.gov.uk)

2. Methodology

Introduction

2.1 The HRA has been carried out with reference to the general European Commission guidance on HRA[7] and that produced in July 2019 and February 2021 (minor updates December 2023) by the UK government[8].

2.2 Figure 2 below outlines the stages of HRA according to current UK government guidance. The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations, and any relevant changes to the plan.

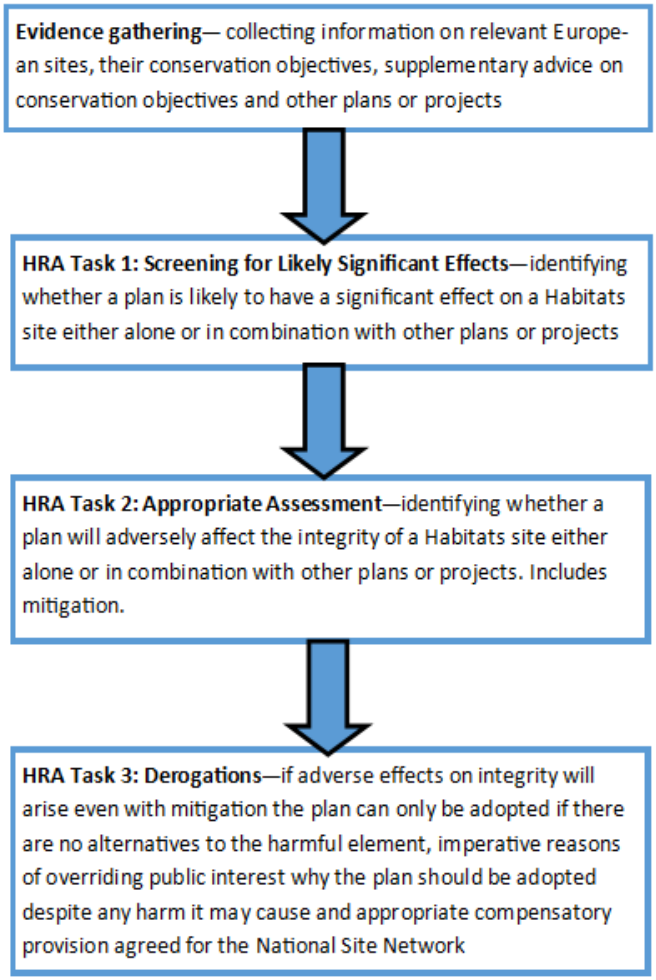

Figure 2: Three Stage Approach to Habitats Regulations Assessment.

Description of HRA Tasks

HRA Task 1 – Screening for Likely Significant Effects (LSE)

2.3 Following evidence gathering, the first stage of any Habitats Regulations Assessment is a Likely Significant Effect (LSE) test also known as Screening - essentially a risk assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is: "*Is the project,*

[7] European Commission (2022): Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive.
[8] https://www.gov.uk/guidance/appropriate-assessment and Habitats regulations assessments: protecting a European site - GOV.UK (www.gov.uk)

either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon Habitats sites?"

2.4 Case law has established that, 'likely' in the context of this stage means 'possible' and a 'significant' effect is one where reasonable scientific doubt remains as to whether it would affect the ability of a Habitats site to achieve its Conservation Objectives. Screening for LSE comprises a two-fold approach of (a) identifying whether any policies are associated with negative impact pathways and (b) determining whether Habitats sites might be affected. The HRA appraises each plan policy or allocation and concludes whether it can be dismissed from consideration, primarily because it will not promote or deliver housing, infrastructure, or employment development. The HRA then considers the Habitats sites that may be impacted by identified policies or allocations, based on known sensitivities and the presence of any linking impact pathways.

2.5 The objective is to 'screen out' those plans and projects where likely significant effects upon Habitats sites can be excluded. This stage is set out in Chapter 5 of this report and in Appendix B.

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

2.7 In spring 2018 the 'Sweetman' European Court of Justice ruling[9] clarified that 'mitigation' (i.e. measures that are specifically introduced to avoid or reduce a harmful effect on a Habitats site that would otherwise arise) should not be taken into account when forming a view on likely significant effects. Mitigation should instead only be considered at the Appropriate Assessment stage. This HRA has been cognisant of that ruling.

HRA Task 2 – Appropriate Assessment (AA)

2.8 Where it is determined that Likely Significant Effects cannot be excluded the analysis has proceeded to the next stage of HRA known as Appropriate Assessment. Case law has clarified that 'Appropriate Assessment' is <u>not</u> a technical term. In other words, there are no particular technical analyses, or level of technical analysis, that are classified by law as belonging to appropriate assessment rather than determination of likely significant effects.

2.9 By virtue of the fact that it follows the screening process, there is a clear implication that the analysis will be more detailed than undertaken at the previous stage. One of the key considerations during Appropriate Assessment is whether there is available mitigation that would entirely address the potential effect. In practice, this Appropriate Assessment considers those policies and allocations where LSEs could not be excluded through screening and assesses the potential for adverse effects in more detail, with a view to concluding whether there would actually be an adverse effect on site integrity (in other words, disruption of the coherent structure and function of the Habitats site(s)).

2.10 Further, this AA also considers the effects of policies and allocations on habitat types and species that are not themselves listed but are necessary to the conservation of the designated habitat types and species , as required by the Holohan ruling[10]. Among other provisions paragraph 39 of the ruling states that '*As regards other habitat types or species, which are present on the site, but for which that site has not been listed, and with respect to habitat types and species located outside that site, … typical habitats or species must be included in the appropriate assessment, <u>if they are necessary to the conservation of the habitat types and species listed for the protected area</u>*' [emphasis added]. This has been considered in relation to the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC, which all support mobile overwintering waterfowl and waders.

Avoidance and Mitigation

2.11 Where necessary, this HRA recommends measures for incorporation into the Plan in order to avoid or mitigate adverse effects on Habitats sites. When discussing 'mitigation' for a Local Plan document, one is concerned primarily with the policy framework to enable the delivery of such mitigation rather than the detail of the mitigation measures themselves since the Local Plan document is a high-level policy document.

2.12 In accordance with established precedent, the level of detail required in the PLP to avoid or mitigate adverse effects is therefore dependent on the nature of the impacts. For example, for recreational impacts, it is not

[9] People Over Wind and Sweetman v Coillte Teoranta (C-323/17)
[10] Case C-461/17

necessary for all measures that will be deployed to be fully developed prior to adoption of the Plan, but the Plan must provide an adequate policy framework within which these measures can be delivered.

2.13 The Court of Appeal has ruled that providing the Council (plan making authority and competent authority) is duly satisfied that proposed mitigation could be '*achieved in practice*' to satisfy that the proposed development would have no adverse effect, then this will suffice at the plan-making stage [11].

HRA Task 3 – Derogations

2.14 In certain circumstances, a plan making authority/competent authority can adopt a plan or permit a proposal, notwithstanding the fact that the AA concludes it will have adverse effects on the integrity of a Habitats site. This is known as a derogation. A Local Plan (or the relevant part of the Local Plan that triggers the derogations) must pass each of the following three sequential legal tests for a derogation to be granted.

1. There are no feasible alternative solutions that would be less damaging to the Habitats site while still meeting the objective of the plan or proposal.
2. The proposal needs to be carried out for imperative reasons of overriding public interest.
3. The necessary compensatory measures can be secured.

2.15 There is a distinction between the level of detail required in a Local Plan for it to pass the derogation tests, and that required for a subsequent planning application. This is because a plan is an intentionally higher-tier document that by design does not present all the details for a particular proposal and leaves flexibility for design of a subsequent planning application including as regards avoidance, mitigation and compensation of adverse effects on a Habitats site. In contrast, once planning permission is granted there is no further tier in the planning approval process. As such all matters regarding the derogations including compensation must be fully detailed at the time planning consent is granted.

2.16 HRA is required at both the plan-making stage and the planning application stage. However, this tiered approach to the level of detailed required at each stage reflects Advocate-General Kokott's advice on HRA in multi-stage planning processes : *'It would also hardly be proper to require a greater level of detail in preceding plans [than lower tier plans or planning applications] or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated on one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure'*[12].

At the plan-making stage, the decision maker must be satisfied that the derogation test are met at the strategic plan level and are capable of being met at the project level.

Test 1: Consider Alternative Solutions

2.17 To allow a derogation the plan making authority must decide that there is no alternative solution that would be less damaging to the site while still meeting the objective of the plan. The plan making authority should work with the proposer and consider whether any alternative solutions are available. This might include considering whether the proposal could:

- be delivered at a different location
- use different routes across a site
- change its scale, size, design, method or timing

2.18 To constitute a genuine alternative solution, the alternative must:

- achieve the same overall objective as the original proposal

[11] No Adastral New Town Ltd v Suffolk Coastal DC [2015] EWCA Civ 88; see also *R (Wingfield) v Canterbury CC* [2019] EWHC 1974 (Admin)
[12] Opinion of Advocate General Kokott, 9th June 2005, Case C-6/04. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland, paragraph 49.
http://curia.europa.eu/juris/document/document.jsf?docid=58359&doclang=EN

- be financially, legally and technically feasible
- be less damaging to the relevant Habitats site and not have an adverse effect on the integrity of any other Habitats site

2.19 If there are, or appear to be, one or more alternative solutions, the plan making authority cannot include the original proposal within the local plan. In those circumstances, there is no need to do test 2 or test 3.

2.20 If there are no alternative solutions, the proposal passes test 1 and the plan making authority can move to test 2.

Test 2: Consider imperative reasons of overriding public interest

2.21 If there are no feasible alternative solutions, the plan making authority must next be able to show that there are imperative reasons of overriding public interest (IROPI) why the proposal must go ahead.

2.22 The plan making authority must decide if the need for the proposal is:

- imperative - it is essential that it proceeds
- in the public interest – it delivers a public interest benefit, not just benefits for private interests
- overriding - the imperative public interest outweighs the harm, or risk of harm, to the integrity of the Habitats site that is predicted by the appropriate assessment.

2.23 According to government guidance, plans or projects that only provide short-term or very localised benefits are less likely to be able to show imperative reasons of overriding public interest than more strategic plans or projects.

2.24 Some of the designated habitats and species of SACs are considered to be a Europe-wide 'priority habitats' in danger of disappearance, as defined in the Habitats Directive. Where such priority habitats are at play, there is a stricter test applied at the IROPI stage. However, there are no such habitats in affected Habitats sites associated with the Portsmouth Local Plan.

Test 3: Secure compensatory measures

2.25 If there are no feasible alternative solutions and the plan making authority has shown that there are imperative reasons of overriding public interest, it is necessary to make sure that suitable compensatory measures are capable of being secured at the planning application stage. Such measures will need to fully offset the harm to coherence of structure and function (effect on integrity) which will or could be caused to the site.

2.26 While there is no precedent in the UK for a local authority to have relied on derogations in the adoption of a local plan, there is considerable precedent within the realm of coastal defence, where it is common for Shoreline Management Plans and Coastal Strategies to rely on the derogations. For example, the North Solent Shoreline Management Plan was adopted in reliance on the derogations tests, while the Hayling Island Coastal Management Strategy is currently being assessed against the derogations tests. In these and similar examples the focus at the plan-making stage is to ensure that there is scope for suitable compensatory provision (including its scale, its technical feasibility, and the likelihood that adequate areas for compensation can be identified), with the precise details of the specific compensation parcels to be secured, and technical matters such as landowners agreements, to be deferred to the individual scheme (planning application) level.

2.27 The derogation section of this HRA therefore seeks to explore whether a sufficient framework exists to ensure that suitable compensation is capable of being delivered when and where it is needed, and that there is a high degree of confidence that sufficient land in appropriate places will be available for the compensation to be delivered.

2.28 Once the derogation tests have been satisfied, there will be a pre-submission consultation. The consultation results will be considered in regard to the test of soundness, and the Local Plan will then be submitted for examination. Following examination, the derogations documentation will be finalised and submitted to the 'appropriate authority' (the relevant Secretary of State) in line with Regulation 107 of the Habitats Regulations, which provides that the appropriate authority has 21 days to prohibit adoption of the Local Plan, based on the derogations materials. The appropriate authority may do this either indefinitely or during such period as may be specified in the direction.

Geographic Scope of the HRA

2.29 There are no standard criteria for determining the ultimate physical scope of an HRA. Rather, the source-pathway-receptor model should be used to determine whether there is any potential pathway connecting development to any Habitats sites. In the case of Portsmouth City, it was determined that for the initial coarse screen the following Habitats Sites required consideration:

- Portsmouth Harbour SPA / Ramsar;
- Chichester and Langstone Harbours SPA / Ramsar;
- Solent Maritime SAC;
- Solent and Dorset Coast SPA;
- Solent & Southampton Water SPA / Ramsar; and
- Solent & Isle of Wight Lagoons SAC.

2.30 This was based upon a search within Portsmouth City and up to 10km surrounding the authority boundary. All above sites were subjected to the initial screening exercise. It should be noted that the presence of a conceivable impact pathway linking the emerging PLP to a Habitats site does not mean that Likely Significant Effects (LSEs) will occur.

3. Habitats Sites

Introduction

3.1 The following Habitats sites are situated within 10km of the Portsmouth City boundary:

- Portsmouth Harbour SPA / Ramsar;
- Chichester and Langstone Harbours SPA / Ramsar;
- Solent Maritime SAC;
- Solent and Dorset Coast SPA;
- Solent & Southampton Water SPA / Ramsar; and
- Solent and Isle of Wight Lagoons SAC.

3.2 Due to development being within the 10km screening distance, there are potential negative impacts on these sites of conservation interest. They thus need to be considered in more detail. The following section provides an introduction, the qualifying features, the conservation objectives and the threats / pressures to each of these Habitats sites.

Portsmouth Harbour SPA / Ramsar

Introduction

3.3 This Habitats site is an industrialised estuary located centrally on the Solent. It comprises one of the four largest expanses of mud-flats and tidal creeks in southern England. These mud-flats support a diverse assemblage of aquatic plants, including narrow-leaved eelgrass *Zostera angustifolia*, dwarf eelgrass *Zostera noltii* and sea lettuce *Ulva lactuca*. Portsmouth Harbour is connected to the sea via a narrow section of the Solent and only receives small quantities of freshwater (e.g. from the River Wallington), therefore possessing a unique hydrology. The site supports significant numbers of wintering dark-bellied brent geese *Branta b. bernicla*, which are known to feed extensively in surrounding agricultural areas outside the SPA boundary.

SPA Qualifying Features[13]

3.4 This site qualifies under **Article 4.2** of the Directive (79/409/EEC) by supporting populations of Habitats importance of the following migratory species:

Over winter:

- Dark-bellied brent goose *Branta bernicla bernicla*: 2,847 individuals representing at least 0.9% of the wintering Western Siberia / Western Europe population (5 year peak mean 1991/2 – 1995/6)
- Red-breasted merganser *Mergus serrator*: 87 individuals (non-breeding)
- Dunlin *Calidris alpina alpina*: 5,123 individuals (non-breeding)
- Black-tailed godwit *Limosa limosa islandica*: 31 individuals (non-breeding)

Ramsar Qualifying Features[14]

3.5 Portsmouth Harbour qualifies as a Ramsar site under the following criteria:

[13] Available at: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9011051.pdf [Accessed on the 20/12/2023]
[14] Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11055.pdf [Accessed on the 20/12/2023]

Criterion 3

The intertidal mudflat areas possess extensive beds of eelgrass *Zostera angustifolia* and *Zostera noltei* which support the grazing dark-bellied brent geese populations. The mud-snail *Hydrobia ulvae* is found at extremely high densities, which helps to support the wading bird interest of the site. Common cord-grass *Spartina anglica* dominates large areas of the saltmarsh and there are also extensive areas of green algae *Enteromorpha* spp. and sea lettuce *Ulva lactuca*. More locally the saltmarsh is dominated by sea purslane *Halimione portulacoides* which gradates to more varied communities at the higher shore levels. The site also includes a number of saline lagoons hosting nationally important species.

Criterion 6 Species / populations occurring at levels of international importance

Qualifying species / populations (as identified at designation):

Species with peak counts in winter

- Dark-bellied brent goose *Branta bernicla bernicla*; 2,105 individuals, representing an average of 2.1% of the GB population (5 year peak mean 1998/9 – 2002/3)

SPA Conservation Objectives[15]

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

3.7 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

Threats / Pressures to Site Integrity[16]

3.8 The following threats and pressures to the integrity of the Portsmouth Harbour SPA have been identified in the Natural England Site Improvement Plan:

- Public access / disturbance
- Costal squeeze
- Fisheries: Commercial marine and estuarine
- Water pollution
- Changes in species distribution
- Climate change
- Change to site conditions
- Invasive species
- Direct land take from development
- Biological resource use
- Change in land management

[15] Available at: http://publications.naturalengland.org.uk/publication/4857883850178560 [Accessed on the 03/11/2020]
[16] Available at: http://publications.naturalengland.org.uk/publication/4692013588938752 [Accessed on the 03/11/2020]

- Inappropriate pest control
- Air pollution: Impact of atmospheric nitrogen deposition
- Hydrological changes
- Extraction: Non-living resources

Chichester and Langstone Harbours SPA / Ramsar

Introduction

3.9 The Chichester and Langstone Harbours SPA / Ramsar is a complex of large, sheltered estuarine basins comprising sand- and mud-flats that are exposed at low tide. The two harbours are connected via a stretch of water that separates Hayling Island from the mainland. Some tidal channels drain the basin and reach far inland. The mud-flats harbour a rich assemblage of invertebrates and algae, such as *Enteromorpha* spp. and eelgrasses *Zostera* spp. The wide range of habitats present in the Chichester and Langstone Harbours SPA / Ramsar support key animal communities. These include significant numbers of waterbirds during migration and over winter. Furthermore, the site supports important colonies of breeding terns, which are rare in southern England.

SPA Qualifying Features[17]

3.10 This site qualifies under **Article 4.1** of the Directive (79/409/EEC) by supporting populations of Habitats importance of the following species listed on Annex I of the Directive:

During the breeding season:

- Little tern *Sterna albifrons*; 100 pairs representing up to 4.2% of the breeding population in Great Britain (5 year mean, 1992 – 1996)
- Sandwich tern *Sterna sandvicensis*; 158 pairs representing up to 1.1% of the breeding population in Great Britain (1998)
- Common tern *Sterna hirundo*; 126 pairs (5 year mean, 2011-2015)

On passage:

- Little egret *Egretta garzetta*; 137 individuals representing up to 17.1% of the population in Great Britain (Count as at 1998)

Over winter:

- Bar-tailed godwit *Limosa lapponica*; 1,692 individuals representing up to 3.2% of the wintering population in Great Britain (5 year peak mean 1991/2 – 1995/6)
- Little egret *Egretta garzetta*; 100 individuals representing up to 20% of the wintering population in Great Britain (Count as at 1998)

3.11 This site qualifies under **Article 4.2** of the Directive (79/409/EEC) by supporting populations of Habitats importance of the following migratory species:

On passage:

- Ringed Plover *Charadrius hiaticula*; 2,471 individuals representing up to 4.9% of the Europe/Northern Africa - wintering population (5 year peak mean 1991/2 - 1995/6

Over winter:

- Black-tailed Godwit *Limosa limosa islandica*; 1,003 individuals representing up to 1.4% of the wintering Iceland - breeding population (5 year peak mean 1991/2 - 1995/6)

[17] Available at: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9011011.pdf [Accessed on the 20/12/2023]

- Dark-bellied brent Goose *Branta bernicla bernicla*; 17,119 individuals representing up to 5.7% of the wintering Western Siberia/Western Europe population (5 year peak mean 1991/2 - 1995/6)
- Dunlin *Calidris alpina alpina*; 44,294 individuals representing up to 3.2% of the wintering Northern Siberia/Europe/Western Africa population (5 year peak mean 1991/2 - 1995/6)
- Grey Plover *Pluvialis squatarola*, 3,825 individuals representing up to 2.5% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6)
- Redshank *Tringa totanus*; 1,788 individuals representing up to 1.2% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6)
- Ringed Plover *Charadrius hiaticula*, 846 individuals representing up to 1.7% of the wintering Europe/Northern Africa - wintering population (5 year peak mean 1991/2 - 1995/6)
- Common shelduck *Tadorna tadorna*; 1,096 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Eurasian wigeon *Anas Penelope*; 3,947 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Eurasian teal *Anas crecca*; 1,953 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Northern pintail *Anas acuta*; 338 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Northern shoveler *Anas clypeata*; 106 individuals wintering populations (5 year peak mean 2009/10 – 2013/14)
- Red-breasted merganser *Mergus serrator*; 366 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Sanderling *Calidris alba*; 216 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Eurasian curlew *Numenius arquata*; 3,181 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Ruddy turnstone *Arenaria interpres*; 501 individuals wintering population (5 year peak mean 2009/10 – 2013/14)

3.12 Assemblage qualification: A wetland of international importance.

The area qualifies under **Article 4.2** of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl

Over winter, the area regularly supports 93,142 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: Wigeon *Anas penelope*, Bar-tailed Godwit *Limosa lapponica*, Dark-bellied brent Goose *Branta bernicla bernicla*, Ringed Plover *Charadrius hiaticula*, Grey Plover *Pluvialis squatarola*, Dunlin *Calidris alpina alpina*, Black-tailed Godwit *Limosa limosa islandica*, Redshank *Tringa totanus*, Little Grebe *Tachybaptus ruficollis*, Little Egret *Egretta garzetta*, Shelduck *Tadorna tadorna*, Curlew *Numenius arquata*, Teal *Anas crecca*, Pintail *Anas acuta*, Shoveler *Anas clypeata*, Red-breasted Merganser *Mergus serrator*, Oystercatcher *Haematopus ostralegus*, Lapwing *Vanellus vanellus*, Knot *Calidris canutus*, Sanderling *Calidris alba*, Cormorant *Phalacrocorax carbo*, Whimbrel *Numenius phaeopus*.

Ramsar Qualifying Features[18]

3.13 The Chichester and Langstone Harbours qualify as a Ramsar site under the following criteria:

Criterion 1

Two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The site includes intertidal mudflats, saltmarsh, sand and shingle spits and sand dunes.

[18] Available at: http://jncc.defra.gov.uk/pdf/RIS/UK11013.pdf [Accessed on the 03/11/2020]

Criterion 5

Assemblages of international importance

Species with peak counts in winter

76,480 waterfowl (5 year peak mean 1998/99 – 2002/03)

Criterion 6 Species / populations occurring at levels of international importance

Qualifying species / populations (as identified at designation):

Species with peak counts in spring / autumn

- Ringed plover *Charadrius hiaticula*, Europe / Northwest Africa: 853 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9 – 2002/3)
- Black-tailed godwit *Limosa limosa islandica*, Iceland / W Europe: 906 individuals, representing an average of 2.5% of the population (5 year peak mean 1998/9 – 2002/3)
- Common redshank *Tringa totanus totanus*: 2,577 individuals, representing an average of 1% of the population (5 year peak mean 1998/9 – 2002/3)

Species with peak counts in winter

- Dark-bellied brent goose *Branta bernicla bernicla*: 12,987 individuals, representing an average of 6% of the population (5 year peak mean 1998/9 – 2002/3)
- Common shelduck *Tadorna tadorna*, NW Europe: 1,468 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9 – 2002/3)
- Grey plover *Pluvialis squatarola*, E Atlantic / W Africa – wintering: 3,043 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9 – 2002/3)
- Dunlin *Calidris alpine alpine*, W Siberia / W Europe: 33,436 individuals, representing an average of 2.5% of the population (5 year peak mean 1998/9 – 2002/3)

Species / populations identified subsequent to designation for possible future consideration under criterion 6.

Species regularly supported during the breeding season

- Little tern *Sterna albifrons albifrons*, W Europe: 130 apparently occupied nests, representing an average of 1.1% of the breeding population

SPA Conservation Objectives[19]

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

3.15 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

[19] Available at: http://publications.naturalengland.org.uk/publication/5789102905491456 [Accessed on the 03/11/2020]

Threats / Pressures to Site Integrity[20]

3.16 The following threats and pressures to the integrity of the Portsmouth Harbour SPA have been identified in the Natural England Site Improvement Plan:

- Public access / disturbance
- Costal squeeze
- Fisheries: Commercial marine and estuarine
- Water pollution
- Changes in species distribution
- Climate change
- Change to site conditions
- Invasive species
- Direct land take from development
- Biological resource use
- Change in land management
- Inappropriate pest control
- Air pollution: Impact of atmospheric nitrogen deposition
- Hydrological changes
- Extraction: Non-living resources

Solent Maritime SAC

Introduction

3.17 The Solent comprises a major estuarine system on the south coast of England with four coastal plain estuaries and four bar-built estuaries. The maritime SAC is the only site that contains a cluster of physiographic sub-types of estuary. Furthermore, in contrast to all other Habitats estuaries, the Solent has a unique hydrographic regime consisting of four tides per day.

3.18 The site also harbours a complex array of marine and estuarine habitats. Sediment habitats in the estuarine system include extensive estuarine flats with intertidal areas, supporting eelgrass *Zostera* spp., green algae, sand and shingle spits, and shoreline transitions. Mudflat habitats range from low or variable salinity in the upper reaches of the estuaries to fully marine mudflats in Chichester and Langstone Harbours. Unusual species in these habitats include rare sponges, communities of a polychaete *Sabellaria spinulosa* and smooth cord-grass *Spartina alterniflora*.

3.19 Within the Solent Maritime SAC, the second-largest aggregation of Atlantic salt meadows in south / south-west England is located. The saltmarsh is present as a large number of disjointed habitat patches. This ungrazed aquatic plant community is dominated by sea-purslane *Atriplex portulacoides*, common sea-lavender *Limonium vulgare* and thrift *Armeria maritima*. Overall, the site is less disturbed by man-made structures than other parts of the southern coast.

Qualifying Features[21]

3.20 Annex I habitats that are a primary reason for selection of this site:

[20] Available at: http://publications.naturalengland.org.uk/publication/4692013588938752 [Accessed on the 03/11/2020]
[21] Available at: https://sac.jncc.gov.uk/site/UK0030059[Accessed on the 20/12/2023]

- Estuaries
- Spartina swards (*Spartinion maritimae*)
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

3.21 Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- Sandbanks which are slightly covered by sea water all the time
- Mudflats and sandflats not covered by sea water at low tide
- Coastal lagoons
- Annual vegetation of drift lines
- Perennial vegetation of stony banks
- *Salicornia* and other annuals colonizing mud and sand
- Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')

3.22 Annex II species present as a qualifying feature, but not a primary reason for site selection

- Desmoulin's whorl snail *Vertigo moulinsiana*

Conservation Objectives[22]

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

3.24 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

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

Threats / Pressures to Site Integrity[23]

3.25 The following threats and pressures to the integrity of the Portsmouth Harbour SPA have been identified in the Natural England Site Improvement Plan:

- Public access / disturbance
- Costal squeeze
- Fisheries: Commercial marine and estuarine
- Water pollution
- Changes in species distribution
- Climate change
- Change to site conditions

[22] Available at: http://publications.naturalengland.org.uk/publication/4857883850178560 [Accessed on the 03/11/2020]
[23] Available at: http://publications.naturalengland.org.uk/publication/4692013588938752 [Accessed on the 03/11/2020]

- Invasive species
- Direct land take from development
- Biological resource use
- Change in land management
- Inappropriate pest control
- Air pollution: Impact of atmospheric nitrogen deposition
- Hydrological changes
- Extraction: Non-living resources

Solent and Dorset Coast SPA

Introduction

3.26 The Solent and Dorset Coast was designated as a SPA on the 16th of January 2020. The site is approx. 89,078.02ha in size and extends from the isle of Purbeck in the west to Bognor Regis in the east, following the coastline of southern England. The site boundary includes the sub-tidal areas not encompassed by the other SPAs / Ramsars in the Solent, with the landward boundary at the mean low water (MLW) line where it abuts other SPAs / Ramsars and the mean high water (MHW) line elsewhere (to provide protection to the intertidal zone).

3.27 The SPA was designated to specifically protect essential foraging areas at sea used by qualifying tern species (common tern, sandwich tern and little tern) of other nearby SPA / Ramsar sites. All three tern species use the open water along the coastline to plunge dive for foraging resources. The site (as outlined in 2020) supports over 1% of the GB breeding population of all three tern species. The overall site boundary of the SPA has been established using data on the foraging ranges of terns (e.g. mean and maximum foraging ranges for little terns of 2.1km and 6.3km respectively) and applying these as buffer zones around known tern nesting sites.

Qualifying Features[24]

3.28 This site qualifies under Article 4 of the Birds Directive (2009/147/EC) by supporting populations of European importance of the following species listed on Annex I of the Directive:

During the breeding season;

- Sandwich tern *Sterna sandvicensis*, 441 pairs representing at least 4.01% of the breeding population in Great Britain (2008-2014)
- Common tern *Sterna hirundo*, 492 pairs representing at least 4.77% of the breeding population in Great Britain (2008-2014)
- Little tern *Sterna albifrons*, 63 pairs representing at least 3.31% of the breeding population in Great Britain (2008-2014)

Conservation Objectives[25]

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

3.30 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features

[24] Available at: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9020330.pdf [Accessed on the 20/12/2023]
[25] Available at: http://publications.naturalengland.org.uk/publication/5294923917033472 [Accessed on the 20/12/2023]

- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

Threats / Pressures to Site Integrity

3.31 To date, a Site Improvement Plan for the Solent and Dorset Coast SPA has not been published. However, given similar qualifying species to the Portsmouth Harbour SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar, it is likely that the threats and pressures to site integrity will be similar. The following issues have been identified in the Site Improvement Plan for the wider Solent area[26] (note only the ones relevant to terns are presented here):

- Public access / disturbance
- Fisheries: Commercial marine and estuarine
- Water pollution
- Changes in species distribution
- Climate change
- Change to site conditions
- Biological resource use
- Change in land management
- Air pollution: Impact of atmospheric nitrogen deposition
- Hydrological changes

Solent and Southampton Water SPA / Ramsar

Introduction

3.32 The Solent and Southampton Water SPA / Ramsar covers an expansive area on the south England coast from Hurst Spit to Hill Head on the coast of Hampshire, and from Yarmouth to Whitecliff Bay along the north coast of the Isle of Wight. It is composed of several estuaries and harbours with mudflats, saltmarshes, saline lagoons, shingle beaches, reedbeds, damp woodland and grazing marsh.

3.33 The mudflats support beds of *Enteromorpha* spp. and *Zostera* spp., and harbour a rich assemblage of invertebrates that forms the main food source for estuarine birds. In the breeding season in summer, the site is important for seabirds such as gulls and terns. In winter the SPA holds a significant assemblage of waterfowl, including geese, ducks and waders. The brent goose *Branta bernicla bernicla* is known to feed in areas of surrounding agricultural land.

SPA Qualifying Features[27]

3.34 This site qualifies under **Article 4.1** of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:

During the breeding season;

- Common tern *Sterna hirundo*, 267 pairs representing at least 2.2% of the breeding population in Great Britain (5 year peak mean, 1993-1997)

[26] Available at: http://publications.naturalengland.org.uk/publication/4692013588938752 [Accessed on the 15/12/2020]
[27]Available at: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9011061.pdf Accessed on the 20/12/2023]

- Little tern *Sterna albifrons*, 49 pairs representing at least 2% of the breeding population in Great Britain (5 year peak mean, 1993-1997)
- Mediterranean gull *Larus melanocephalus*, 2 pairs representing 8.2 - 13.9% of the breeding population in Great Britain (5 year peak mean, 1994-1998)
- Roseate tern *Sterna dougallii*, 2 pairs representing at least 3.1% of the breeding population in Great Britain (5 year peak mean, 1993-1997)
- Sandwich tern *Sterna sandvicensis*, 231 pairs representing at least 1.7% of the breeding population in Great Britain (5 year peak mean, 1993-1997)

3.35 This site also qualifies under **Article 4.2** of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

Over winter;

- Black-tailed godwit *Limosa limosa islandica*, 1,125 individuals representing at least 1.6% of the wintering Iceland - breeding population (5 year peak mean, 1992/3-1996/7)
- Dark-bellied brent goose *Branta bernicla bernicla*, 7,506 individuals representing at least 2.5% of the wintering Western Siberia/Western Europe population (5 year peak mean, 1992/3-1996/7)
- Ringed plover *Charadrius hiaticula*, 552 individuals representing at least 1.1% of the wintering Europe/Northern Africa - wintering population (5 year peak mean, 1992/3-1996/7)
- Teal *Anas crecca*, 4,400 individuals representing at least 1.1% of the wintering Northwestern Europe population (5 year peak mean, 1992/3-1996/7)

3.36 Assemblage qualification: A wetland of international importance.

The area qualifies under **Article 4.2** of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl

Over winter, the area had a 5 year peak mean of 51,361 birds (1992/92 – 1996/97) including: Gadwall *Anas strepera*, Teal *Anas crecca*, Ringed Plover *Charadrius hiaticula*, Black-tailed Godwit *Limosa limosa islandica*, Little Grebe *Tachybaptus ruficollis*, Great Crested Grebe *Podiceps cristatus*, Cormorant *Phalacrocorax carbo*, Dark-bellied brent Goose *Branta bernicla bernicla*, Wigeon *Anas penelope*, Redshank *Tringa totanus*, Pintail *Anas acuta*, Shoveler *Anas clypeata*, Red-breasted Merganser *Mergus serrator*, Grey Plover *Pluvialis squatarola*, Lapwing *Vanellus vanellus*, Dunlin *Calidris alpina alpina*, Curlew *Numenius arquata*, Shelduck *Tadorna tadorna*.

Ramsar Qualifying Features[28]

3.37 The Solent and Southampton Water qualify as a Ramsar site under the following criteria:

Criterion 1

The site is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. It includes many wetland habitats characteristic of the biogeographic region: saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs.

Criterion 2

The site supports an important assemblage of rare plants and invertebrates. At least 33 British Red Data Book invertebrates and at least eight British Red Data Book plants are represented on site.

Criterion 5

Assemblages of international importance

[28] Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11063.pdf [Accessed on the 20/12/2023]

Species with peak counts in winter

51,343 waterfowl (5 year peak mean 1998/99 – 2002/03)

Criterion 6 Species / populations occurring at levels of international importance

Qualifying species / populations (as identified at designation):

Species with peak counts in spring / autumn

- Ringed plover *Charadrius hiaticula*, Europe / Northwest Africa: 853 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9 – 2002/3)

Species with peak counts in winter

- Dark-bellied brent goose *Branta bernicla bernicla*: 12,987 individuals, representing an average of 6% of the population (5 year peak mean 1998/9 – 2002/3)
- Eurasian teal *Anas crecca*, NW Europe: 5,514 individuals, representing an average of 1.3% of the population (5 year peak mean 1998/9 – 2002/3)
- Black-tailed godwit *Limosa limosa islandica*, Iceland / W Europe: 1,240 individuals, representing an average of 3.5% of the population (5 year peak mean 1998/9 – 2002/3)

Conservation Objectives[29]

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

3.39 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

Threats / Pressures to Site Integrity[30]

3.40 The following threats and pressures to the integrity of the Portsmouth Harbour SPA have been identified in the Natural England Site Improvement Plan:

- Public access / disturbance
- Costal squeeze
- Fisheries: Commercial marine and estuarine
- Water pollution
- Changes in species distribution
- Climate change
- Change to site conditions
- Invasive species
- Direct land take from development

[29] Available at: http://publications.naturalengland.org.uk/publication/6567218288525312 [Accessed on the 03/11/2020]
[30] Available at: http://publications.naturalengland.org.uk/publication/4692013588938752 [Accessed on the 03/11/2020]

- Biological resource use
- Change in land management
- Inappropriate pest control
- Air pollution: Impact of atmospheric nitrogen deposition
- Hydrological changes
- Extraction: Non-living resources

Solent and Isle of Wight Lagoons SAC

Introduction

3.41 The Solent encompasses a series of coastal lagoons, including percolation, isolated and sluiced lagoons. This site includes several lagoons in the marshes near Keyhaven – Pennington, at Farlington Marshes in Chichester Harbour, at Bembridge Harbour and at Gilkicker near Gosport. These lagoons have a range of salinities and substrates, ranging from soft mud to muddy sand with a high proportion of shingle. Farlington Marshes is an isolated lagoon in marsh pasture, which is separated from the sea by a sea wall. It receives sea water only during spring tides. Its fauna is dominated by low-medium salinity insects. The lagoons at Bembridge Harbour lie in a depression behind the sea wall and sea water enters through percolation. Species diversity here is very high, including high densities of *N. vectensis*.

3.42 The habitats present in the Solent and Isle of Wight Lagoons SAC support high diversity faunal communities, including the rare foxtail stonewort *Lamprothamnium papulosum*, the scarce lagoon sand shrimp *Gammarus insensibilis* and the scarce starlet sea anemone *Nematostella vectensis.*

Qualifying Features[31]

3.43 Annex I habitats that are a primary reason for selection of this site:

- Coastal lagoons

Conservation Objectives[32]

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

3.45 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

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

Threats / Pressures to Site Integrity[33]

3.46 The following threats and pressures to the integrity of the Portsmouth Harbour SPA have been identified in the Natural England Site Improvement Plan:

- Hydrological changes
- Inappropriate weed control

[31] Available at: https://sac.jncc.gov.uk/site/UK0017073 [Accessed on the 20/12/2023]
[32] Available at: http://publications.naturalengland.org.uk/publication/5646122018144256 [Accessed on the 03/11/2020]
[33] Available at: http://publications.naturalengland.org.uk/publication/5670639268528128 [Accessed on the 03/11/2020]

- Coastal squeeze
- Invasive species
- Air pollution: Risk of atmospheric nitrogen deposition

4. Background to Impact Pathways

Introduction

4.1 This section sets out the impact pathways that have been identified for consideration in the HRA of the Local Plan based on professional knowledge of the Habitats sites involved, review of the Natural England Site Improvement Plans, review of the Supplementary Advice on the Conservation Objectives for each Habitats site and review of HRAs for surrounding Local Plans.

Recreational Pressure

4.2 There is concern over the cumulative impacts of recreation on key nature conservation sites in the UK, as most sites must fulfil conservation objectives while also providing recreational opportunity. Various research reports have provided compelling links between changes in housing and access levels and impacts on Habitats protected sites[34] [35]. This applies to any habitat, but recreational pressure from housing growth has particularly strong impacts in Habitats sites designated for their bird interest. Different Habitats sites are subject to different types of recreational pressures and have different vulnerabilities. HRAs of planning documents tend to focus on recreational sources of disturbance as a result of new residents[36].

4.3 Studies across a range of species have shown that the effects from recreation can be complex. Human activity can affect birds either directly (e.g. by eliciting flight responses) or indirectly (e.g. through damaging their habitat or reducing their fitness in less obvious ways e.g. stress). The most obvious direct effect is that of immediate mortality such as death by shooting, but human activity can also lead to much subtler behavioural (e.g. alterations in feeding behaviour, avoidance of certain areas and use of sub optimal areas etc.) and physiological changes (e.g. an increase in heart rate). While these are less noticeable, they might result in major population-level changes by altering the balance between immigration / birth and emigration / death[37].

4.4 Concern regarding the effects of disturbance on birds stems from the fact that they are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding[38]. Disturbance therefore risks increasing energetic expenditure of birds while reducing their energetic intake, which can adversely affect the 'condition' and ultimately survival of the birds. Additionally, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they then must sustain a greater number of birds[39]. Moreover, the higher proportion of time a breeding bird spends away from its nest, the more likely it is that eggs will cool and the more vulnerable they, or any nestlings, are to predators. Recreational effects on ground-nesting birds are particularly severe, with many studies concluding that urban sites support lower densities of key species, such as stone curlew and nightjar[40] [41].

4.5 Several factors (e.g. seasonality, type of recreational activity) may have pronounced impacts on the nature of bird disturbance. Recreation disturbance in winter can be more impactful because food shortages make birds more vulnerable at this time of the year. In contrast, there are often fewer recreational users in the winter months and some effects of disturbance may be reduced because birds are not breeding. Evidence

[34] Liley D, Clarke R.T., Mallord J.W., Bullock J.M. 2006a. The effect of urban development and human disturbance on the distribution and abundance of nightjars on the Thames Basin and Dorset Heaths. Footprint Ecology report for Natural England.
[35] Liley D., Clarke R.T., Underhill-Day J., Tyldesley D.T. 2006b. Evidence to support the appropriate Assessment of development plans and projects in south-east Dorset. Footprint Ecology report for Dorset County Council.
[36] The RTPI report 'Planning for an Ageing Population' (2004) which states that 'From being a marginalised group in society, the elderly are now a force to be reckoned with and increasingly seen as a market to be wooed by the leisure and tourist industries. There are more of them and generally they have more time and more money.' It also states that 'Participation in most physical activities shows a significant decline after the age of 50. The exceptions to this are walking, golf, bowls and sailing, where participation rates hold up well into the 70s'.
[37] Riley, J. 2003. Review of Recreational Disturbance Research on Selected Wildlife in Scotland. *Scottish Natural Heritage*.
[38] Riddington, R. *et al*. 1996. The impact of disturbance on the behaviour and energy budgets of Brent geese. *Bird Study* **43**:269-279
[39] Gill, J.A., Sutherland, W.J. & Norris, K. 1998. The consequences of human disturbance for estuarine birds. *RSPB Conservation Review* **12**: 67-72
[40] Clarke R.T., Liley D., Sharp J.M., Green R.E. 2013. Building development and roads: Implications for the distribution of stone curlews across the Brecks. *PLOS ONE*. doi:10.1371/journal.pone.
[41] Liley D., Clarke R.T. 2003. The impact of urban development and human disturbance on the numbers of nightjar *Caprimulgus europaeus* on heathlands in Dorset, England. *Biological Conservation* **114**: 219-230.

in the literature suggests that the magnitude of disturbance clearly differs between different types of recreational activities. For example, dog walking leads to a significantly higher reduction in bird diversity and abundance compared to hiking[42]. Scientific evidence also suggests that key disturbance parameters, such as areas of influence and flush distance, are significantly greater for dog walkers than hikers[43]. Furthermore, differences in on-site route lengths and usage patterns likely imply that key spatial and temporal parameters (such as the area of a site potentially impacted and the frequency of disturbance) will also differ between recreational activities. This suggests that activity type is a factor that should be taken into account in HRAs.

Non-breeding birds (September to March)

4.6 Both the Portsmouth Harbour SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar directly adjoin Portsmouth City. These Habitats sites are designated for overwintering waterfowl and waders, and this section discusses academic research available on these broad groups of birds.

4.7 Evans & Warrington found that on Sundays total water bird numbers (including shoveler and gadwall) were 19% higher on Stocker's Lake LNR in Hertfordshire and attributed this to observed greater recreational activity on surrounding water bodies at weekends relative to weekdays displacing birds into the LNR. However, in this study, recreational activity was not quantified in detail, nor were individual recreational activities evaluated separately.

4.8 Tuite et al[44] used a large (379 sites), long-term (10-year) dataset (September – March species counts) to correlate seasonal changes in wildfowl abundance with the presence of various recreational activities. They determined that the shoveler was one of the most sensitive species to recreational activities, such as sailing, windsurfing and rowing. Studies on recreation in the Solent have established that human leisure activities cause direct disturbance to wintering waterfowl populations[45] [46].

4.9 A study on recreational disturbance on the Humber[47] assesses different types of noise disturbance on waterfowl referring to previous research relating to aircraft (see Drewitt 1999[48]), traffic (Reijnen, Foppen, & Veenbaas 1997[49]), dogs (Lord, Waas, & Innes 1997[50]; Banks & Bryant 2007[51]) and machinery (Delaney et al. 1999; Tempel & Gutierrez 2003). It identifies that there is still relatively little work on the effects of different types of water-based craft and the impacts from jet skis, kite surfers, windsurfers etc (see Kirby et al. 2004 for a review[52]). In general terms, both distance from the source of disturbance and the scale of the disturbance (noise level, group size) is likely to influence bird responses (Delaney et al. 1999[53]; Beale & Monaghan 2005[54]). On UK estuaries and coastal sites, a review of WeBS data showed that among the volunteer WeBS surveyors, driving of motor vehicles and shooting were the two activities most perceived to cause disturbance (Robinson & Pollitt 2002[55]).

4.10 Disturbing activities present themselves on a continuum. Generally, activities that involve irregular, infrequent and loud noise events, movement or vibration are likely to be most disturbing. For example, the

[42] Banks P.B., Bryant J.Y. 2007. Four-legged friend or foe? Dog walking displaces native birds from natural areas. *Biology Letters* **3**: 14pp.
[43] Miller S.G., Knight R.L., Miller C.K. 2001. Wildlife responses to pedestrians and dogs. 29: 124-132.
[44] Tuite, C.H., Hanson, P.R. & Owen, M. 1984. Some ecological factors affecting winter wildfowl distribution on inland waters in England and Wales and the influence of water-based recreation. *Journal of Applied Ecology* **21**: 41-62
[45] Footprint Ecology. 2010. Recreational Disturbance to Birds on the Humber Estuary.
[46] Footprint Ecology, Jonathan Cox Associates & Bournemouth University. 2010. Solent Disturbance and Mitigation Project – various reports.
[47] Fearnley H., Liley D. & Cruickshanks K. (2012) Results of Recreational Visitor Survey across the Humber Estuary. Footprint Ecology.
[48] Drewitt, A. (1999) Disturbance effects of aircraft on birds. *English Nature Reports*, Peterborough.
[49] Reijnen, R., Foppen, R. & Veenbaas, G. (1997) Disturbance by traffic of breeding birds: evaluation of the effect and considerations in planning and managing road corridors. *Biodiversity and Conservation* **6**: 567-581.
[50] Lord, A., Waas, J.R. & Innes, J. (1997) Effects of human activity on the behaviour of northern New Zealand dotterel *Charadrius obscurus aquilonius* chicks. *Biological Conservation* **82**:15-20.
[51] Banks, P.B. & Bryant, J.V. (2007) Four-legged friend of foe? Dog-walking displaces native birds from natural areas. *Biology Letters* **3**: 611-613.
[52] Kirby, J.S., Clee, C. & Seager, V. (1993) Impact and extent of recreational disturbance to wader roosts on the Dee estuary: some preliminary results. *Wader Study Group Bulletin* **68**: 53-58.
[53] Delaney, D.K., Grubb, T.G., Beier, P., Pater, L.L.M. & Reiser, H. (1999) Effects of Helicopter Noise on Mexican Spotted Owls. *The Journal of Wildlife Management* **63**: 60-76.
[54] Beale, C.M. & Monaghan, P. (2005) Modeling the Effects of Limiting the Number of Visitors on Failure Rates of Seabird Nests. *Conservation Biology* **19**: 2015-2019.
[55] Robinson, J.A. & Pollitt, M.S. (2002) Sources and extent of human disturbance to waterbirds in the UK: an analysis of Wetland Bird Survey data, 1995/96 to 1998/99: Less than 32% of counters record disturbance at their site, with differences in causes between coastal and inland sites. *Bird Study* **49**: 205.

presence of dogs around water bodies generate substantial disturbance due the type of habitats accessed (e.g. intertidal mudflats and saltmarsh), the area affected and dogs' impacts on bird behaviour. Birds are least likely to be disturbed by activities that involve regular, frequent, predictable and quiet patterns of sound, movement or vibration. The further any activity is from the birds, the less likely it is to result in disturbance. Overall, the factors that determine species responses to disturbance include species sensitivity, timing/duration of the recreational activity and the distance between source and receptor of disturbance.

4.11 As part of the Bird Aware Solent Project, a study monitoring bird disturbance across 20 different locations was undertaken between December 2009 and February 2010[56]. This involved recording all recreational activities and relating these to behavioural responses of birds in pre-defined focal areas of intertidal habitat. The study recorded a total of 2,507 potential disturbance events, generating 4,064 species-specific behaviours. Roughly 20% of recorded events resulted in disturbance to waterfowl, including behaviours such as becoming alert, walking / swimming away, short flights (< 50m) or major flights. Generally, the likelihood of disturbance decreased with increasing distance to the disturbance stimulus (i.e. the recreational activity being undertaken). Importantly, the study also illustrated that recreational activities in the intertidal zone have the highest disturbance potential (41% of recorded events resulted in disturbance), followed by water-based activities (25%) and shore-based activities (12%).

4.12 The specific distance at which a species takes flight when disturbed is known as the 'tolerance distance' (also called the 'escape distance') and greatly differs between species. The tolerance distances of the study carried out for the Bird Aware project are summarised in Table 1. It is reasonable to assume from this evidence that disturbance is unlikely to be relevant at distances of beyond 300m. The data show that disturbance sensitivity differs between species, but that intra-specific variation is equally important. It was also examined how disturbance to different recreational activities varies between species, but for most species the number of recorded events was insufficient for comparison (except for brent goose, oystercatcher and redshank). Again, there may be inter-specific differences in responses to different types of recreation. For example, brent geese responded to dog walkers much further away than oystercatchers and redshanks.

Table 1: Tolerance distances in metres of 16 species of waterfowl to various forms of recreational disturbance, as found in recent disturbance fieldwork[57]. The distances are provided both as a median and a range.

Species	Disturbance Distance (metres from stimulus)		Activity			
	Median	Range	Cycling	Dog walking	Jogging	Walking
Brent goose	51.5	5 – 178	100	95	30	50
Oystercatcher	46	10 – 200	150	45		50
Redshank	44.5	75 – 150	125	50	40	58
Curlew	75	25 – 200				
Turnstone	50	5 – 100				
Coot	12	10 – 20				
Mute swan	12	8 – 50				
Grey plover	75	30 – 125				
Little egret	75	30 – 200				
Wigeon	75.5	20 – 125				
Dunlin	75	25 – 300				
Shelduck	77.5	50 – 140				
Great-crested grebe	100	50 – 100				
Lapwing	75	18 – 125				
Teal	60	35 – 200				
Mallard	25	10 – 50				

[56] Liley D., Stillman R. & Fearnley H. 2011. The Solent Disturbance and Mitigation Project Phase 2: Results of Bird Disturbance Fieldwork 2009/10. Report by Footprint Ecology for the Solent Forum.
[57] Ibid.

4.13 Mitigation measures to avoid recreational pressure effects usually involve a combination of access and habitat management, and the provision of alternative recreational space. Typically, Local Authorities (in their role as Competent Authorities) can set out frameworks for improved habitat and access management, in collaboration with other adjoining Local Planning Authorities. Provision of alternative recreational space can help to attract recreational users away from sensitive Habitats sites and reduce pressure on the sites. However, the location and habitat type of such alternative destinations must be carefully selected to be effective.

4.14 Visitor surveys conducted in the Solent in winter 2017 / 2018, indicated that visitors travelled distances between 76m and 300km to visit the Solent, with a mean distance of 8.4km and a median distance of 1.4km. While the region is clearly visited by people from across England, recreational pressure in these Habitats sites is largely driven by local residents. This is reflected in the Interim Solent Recreation Mitigation Strategy (SRMS), which established a Zone of Influence (ZoI) of 5.6km around the SPAs in the Solent, comparable to ZoIs of other Habitats sites such as the Thames Basin Heaths SPA and the Dorset Heathlands SPA. According to the SRMS, all housing developments within this catchment are to provide financial contributions to mitigation interventions designed to protect these sites from adverse effects. This catchment zone is relevant to the Portsmouth Local Plan, as the Plan area directly adjoins the Portsmouth Harbour SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar.

4.15 A follow up survey (Solent SANGs Visitor Survey[58]) was undertaken in the winter of 2021/22 by Footprint Ecology at five inland Suitable Alternative Natural Greenspace (SANG) sites along the Solent (namely: Firestone Copse, Shoreburs Greenway, River Hamble Country Park, Alver Valley Country Park, and Minerva Heights). Post code data indicates that the sites are generally used by people in a relatively local and small catchment with little overlap between them. This suggests that there is potential for further SANGs to "fill in the gaps". Usage figures appear to be increasing significantly from previous surveys in 2015/16 although an element of caution needs to be applied to the data.

Breeding Birds (April to September)

4.16 In addition to their overwintering bird assemblages, the Chichester and Langstone Harbours SPA / Ramsar is also designated for several breeding bird species, including sandwich tern, common tern and little tern. These species are present in the SPA / Ramsar and reproduce in the summer months, meaning that the recreational pressure impact pathway in the Solent is not limited to the overwintering period. Terns are ground-nesting species that form their nest as a shallow scrape on bare ground. They are particularly vulnerable to recreational pressure, including disturbance from dogs, trampling damage, egg theft and vandalism.

4.17 Disturbance to birds during the pre-incubation, incubation and chick provisioning stages may lead to the abandonment of potential nesting sites, eggs or chicks, resulting in failure to reproduce or in reduced calorific intake by chicks. If disturbance is pervasive, the failure to produce viable offspring may result in reduced fitness at the population level. Disturbance from dog walkers is a particular threat to ground-nesting birds, which tend to have lower disturbance tolerances because their nests are at higher risk from predators[59].

4.18 This is supported in the literature. For example, a study assessing the breeding success of little tern and least tern found that nest success was significantly higher (82%) in artificial habitats than on natural sandy beaches (58%)[60]. This was primarily due to recreational disturbance on the beaches (which was absent in artificial habitats). Furthermore, even in successful nests, the number of unhatched eggs was twice as high in the natural habitat, most likely due to disturbance leading to the cooling of eggs.

4.19 Recreational pressures on the tern colonies in the Solent are well documented and a significant threat to the viability of the species' populations. Generally, all three tern species nest on protected islands (Baker's Island, South Binness Island, Round Nap Island) within the SPA / Ramsar, which are patrolled to reduce the

[58] Pakanen V-M., Hongell H., Aikio S. & Koivula K. (2014). Little tern breeding success in artificial and natural habitats: Modelling population growth under uncertain vital rates. *Population Ecology* **56**: 581-591.
[59] 662-Solent-SANGs-Visitor-Survey-report-FINAL.pdf (birdaware.org)
[60] Pakanen V-M., Hongell H., Aikio S. & Koivula K. (2014). Little tern breeding success in artificial and natural habitats: Modelling population growth under uncertain vital rates. *Population Ecology* **56**: 581-591.

impact of human disturbance. South Binness Island and other islands in the lagoon were purchased by the RSPB in 1978, turned into bird sanctuaries and unauthorised access was forbidden.

4.20 The terns forage within the shallow coastal waters throughout the harbours and in the wider Solent amidst recreational boats, ships and personal watercraft. Given that the nesting colonies are inaccessible to the general public, the biggest source of recreational pressure is likely to arise from water-based activities, such as boating, jet-skiing, kite-surfing, surfing and sailing.

4.21 Footprint Ecology prepared a report in November 2023, reviewing the likelihood of impacts on breeding birds around the Solent from increasing recreational disturbance from new housing. The report considered the impact on five species of breeding birds, namely Mediterranean gull, sandwich tern, common tern, Little tern and roseate tern. All of these bird species are qualifying features of the Solent and Southampton Water SPA. The sandwich tern, common tern and little term are qualifying features of Chichester and Langstone Harbours SPA.

4.22 Mediterranean gulls do not have much specific literature regarding their sensitivity to disturbance. The Footprint Ecology report concludes that they are likely only vulnerable to incursions into their colonies or when water-based activities are done in close proximity to them. Sandwich terns tend to nest in small numbers of large colonies, which can be rapidly abandoned. Common terns breed in smaller scattered colonies. This report concludes that both they are vulnerable to human disturbance, with incursions into colonies and water-based activities in close proximity are key concerns. There is strong evidence for disturbance of little terns impacting distribution and breeding success. Given they nest on open beaches Sandwich terns are the most vulnerable of the species discussed in this report. The roseate tern does not have any regular breeding sites around the Solent but nests with other terns and is so likely similarly vulnerable. It's rarity amplifies this vulnerability.

Conclusion

4.23 The available baseline information suggests that the following Habitats Sites are potentially sensitive to recreational pressure, particularly due to the presence of waterfowl and wader species through the year (**the sites in bold are taken forward into the following chapters**):

- **Portsmouth Harbour SPA / Ramsar**
- **Chichester and Langstone Harbours SPA / Ramsar**
- **Solent and Southampton Water SPA / Ramsar**
- **Solent and Dorset Coast SPA**

Loss of Functionally Linked Habitat

4.24 While most Habitats sites have been geographically defined to encompass the key features that are necessary for coherence of their structure and function, and the support of their qualifying features, this is not necessarily the case. A diverse array of qualifying species including birds, bats and amphibians are not always confined to the boundary of designated sites.

4.25 For example, the highly mobile nature of both wader and waterfowl species implies that areas of habitat of crucial importance to the integrity of their populations lie outside the physical limits of Habitats sites. Despite not being part of the formal designation, these habitats are integral to the maintenance of the structure and function of the designated site, for example by encompassing important foraging grounds. Therefore, land use plans that may affect such functionally linked habitat require further assessment.

4.26 There is now an abundance of authoritative examples of HRA cases on plans affecting bird populations, where Natural England recognised the potential importance of functionally linked land[61]. For example, bird surveys in relation to a previous HRA established that approximately 25% of the golden plover population in the Somerset Levels and Moors SPA were affected while on functionally linked land, and this required the inclusion of mitigation measures in the relevant plan policy wording. Another important case study originates from the Mersey Estuary SPA / Ramsar, where adjacently located functionally linked land had a peak survey

[61] Chapman C & Tyldesley D. 2016. Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects – A review of authoritative decisions. *Natural England Commissioned Reports* **207**. 73pp

count of 108% of the 5 year mean peak population of golden plover. This finding led to considerable amendments in the planning proposal to ensure that the site integrity was not adversely affected.

4.27 Generally, the identification of an area as functionally linked habitat is not always a straightforward process. The importance of non-designated land parcels may not be apparent and thus might require the analysis of existing data sources (e.g. Bird Atlases or data from records centres) to be firmly established. In some instances, data may not be available at all, requiring further survey work.

4.28 The Solent Waders and Brent Goose Strategy (SWBGS)[62], a conservation partnership project focusing particularly on brent geese and wading birds in the Solent, has undertaken surveys over three winters between 2016 and 2019. The strategy is an attempt to identify the sites these birds rely on in the Solent, outside the boundaries of the formally designated sites. This network of functionally linked feeding and roosting sites has been mapped, identifying Core Areas, Primary Support Areas, Secondary Support Areas, Low Use areas and Candidate sites. For example, one of the key parcels of functionally linked habitat within Portsmouth City is Southsea Common (P35), a Core feeding Area for brent geese. This HRA assesses the likelihood of all development sites to constitute functionally linked habitat, based on some key parameters including site area, habitat type, proximity to Habitats sites and the nature of flightlines from / to designated sites. It will consult the SWBGS to identify the main parcels of functionally linked habitat in relation to the emerging PLP.

4.29 Overall, the available baseline information suggests that the following Habitats Sites are sensitive to the loss of functionally linked habitats due to the presence of mobile waterfowl (**the sites in bold are taken forward into the following chapters**):

- **Portsmouth Harbour SPA / Ramsar**
- **Chichester and Langstone Harbours SPA / Ramsar**
- **Solent and Southampton Water SPA / Ramsar**

4.30 Solent and Dorset Coast is an open water site designated for foraging terns. Therefore, the SPA is not at risk of likely significant effects due to loss of functionally linked habitat to construction from Local Plan.

Recreational Pressure in Functionally Linked Habitat

4.31 Recreational pressure can also impact the usage of functionally linked habitats by qualifying SPA / Ramsar waterfowl and waders. As highlighted in the previous section, the integrity of Solent's Habitats sites depends on a network of functionally linked supporting habitats. Birds using such land parcels outside designated site boundaries are also sensitive to recreational usage of the site.

4.32 Assessments of recreational impacts on functionally linked habitats are less straightforward than for Habitats sites. This is because there typically is no visitor data available for such sites and therefore it is difficult to establish a baseline of site usage. Functionally linked habitats are unlikely to have the same draw on recreational users than the higher-profile designated sites, because they are often relatively small greenfield sites (e.g. short grassland or agricultural land). However, other functionally linked habitats (e.g. Southsea Common along Portsmouth City's waterfront) may experience high levels of usage, owing to their nature and location adjacent to sites with a strong recreational draw (the coastline in this instance).

4.33 The distance to allocations proposed in development plans is likely to be a key predictor of site usage, with functionally linked habitats typically only considered to be a recreation destination if within 1km from new residential development. However, a site-by-site assessment is important, due to the different types of supporting habitats.

4.34 The following Habitats Sites are sensitive to recreational pressure in functionally linked habitats from Portsmouth City due to the presence of mobile waterfowl (**the sites in bold are taken forward into the following chapters**):

- **Portsmouth Harbour SPA / Ramsar**

[62] Solent Waders and Brent Goose Strategy Steering Group. November 2020. Solent Waders and Brent Goose Strategy. 37pp. Available at: https://solentwbgs.wordpress.com/page-2/ [Accessed on the 14/12/2023]

- **Chichester and Langstone Harbours SPA / Ramsar**
- **Solent and Southampton Water SPA / Ramsar**

4.35 This impact pathway is not considered a risk to Solent and Dorset Coast SPA for the reasons already given for recreational pressure and loss of functionally-linked land.

Disturbance from Construction (in Habitats Sites and Functionally Linked Habitat)

4.36 Development schemes can result in the disturbance of qualifying SPA / Ramsar bird species in Habitats sites or functionally linked habitats through several mechanisms. Noise and visual disturbance arising from construction activities may result in behavioural changes (e.g. flight from the nest, cessation of foraging) in birds. Furthermore, post-construction disturbance from site usage, road traffic and operational lighting might also arise. Three of the most important factors determining the magnitude of disturbance appear to be species sensitivity, proximity of the disturbance source and timing / duration of the disturbance.

4.37 An increasing amount of research on visual and noise disturbance of waterfowl from construction (and other activities) is now available. Both visual and noise stimuli may elicit disturbance responses, potentially affecting the fitness and survival of waterfowl and waders. Noise is a complex disturbance parameter requiring the consideration of multiple parameters, including the fact that it is not described on a linear scale, its nonadditive effect and the source-receptor distance. A high level of noise disturbance constitutes a sudden noise event of over 60dB or prolonged noise of over 72dB. Bird responses to high noise levels include major flight or the cessation of feeding, both of which might affect the survival of birds if other stressors are present (e.g. cold weather, food scarcity).

4.38 Generally, research has shown that above noise levels of 84dB waterfowl show a flight response, while at levels below 55dB there is no effect on their behaviour[63]. These two thresholds are therefore considered useful as defining two extremes. The same authors have shown that regular noise levels should be below 70dB at the bird, as birds will habituate to noise levels below this level[64]. Generally, noise is attenuated by 6dB with every doubling of distance from the source. Impact piling, the noisiest construction process of approx. 110 dB at 0.67m from source, will therefore reduce to 67-68dB by 100m away from the source. The loudest construction noise should therefore have fallen to below disturbing levels by 100m, and certainly by 200m, away from the source even without mitigation.

4.39 Visual disturbance is generally considered to have a higher impact than noise disturbance as, in most instances, visual stimuli will elicit a disturbance response at much greater distances than noise[65]. For example, a flight response is triggered in most species when they are approached to within 150m across a mudflat. Visual disturbance can be exacerbated by workers operating equipment outside machinery, undertaking sudden movements and using large machinery. Several species are particularly sensitive to visual disturbance[66], including curlew (taking flight at 275m), redshank (at 250m), shelduck (at 199m) and bar-tailed godwit (at 163m), all of which are qualifying species of the Portsmouth SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar. Overall, specific regard should be given to assemblage composition when identifying threshold levels for both visual and noise disturbance.

4.40 Disturbance can also result post-construction, although substantial changes in traffic flow are generally needed for significant noise disturbance to arise from roads. For example, a 25% increase in road traffic (e.g. through a road scheme) will result in only a 1dB(A) increase at the roadside, with a 100% increase needed to result in a 3dB(A) increase – the lowest increase in noise that is thought to be even perceivable by humans and birds. In contrast, the introduction of operational lighting of schemes into areas that are not currently lit can result in disturbance of animal species within Habitats sites or those that rely on functionally linked habitats. At the same time, it must be noted that the Portsmouth area is already generally a brightly lit urban frontage.

[63] Cutts N & Allan J. 1999. Avifaunal Disturbance Assessment. Flood Defence Works: Saltend. Report to Environment Agency).
[64] Cutts, N., Phelps, A. and Burdon, D. (2009) Construction and waterfowl: Defining Sensitivity, Response, Impacts and Guidance. Report to Humber INCA, Institute of Estuarine and Coastal Studies, University of Hull.
[65] Research undertaken by the Institute of Estuarine & Costal Studies, University of Hull. 2013. Available at: http://bailey.persona-pi.com/Public-Inquiries/M4%20-%20Revised/11.3.67.pdf [Accessed on the 28/10/2020]
[66] Ibid. Response distances to visual stimuli are given in the Estuarine & Coastal Studies report.

4.41 The following Habitats sites within 10km of Portsmouth City are sensitive to visual and noise disturbance in both the sites themselves and functionally linked habitats as a result of Local Plan development, both during and post construction **(the sites in bold are taken forward into the following chapters):**

- **Portsmouth Harbour SPA / Ramsar**
- **Chichester and Langstone Harbours SPA / Ramsar**
- **Solent and Southampton Water SPA**

4.42 Since they are on the wing and foraging over a large area predominantly in the marine environment, foraging terns for which Solent and Dorset Coast SPA is designated are not considered to be at significant risk of disruption of foraging from onshore construction works.

Water Quality

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

- At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour.
- Eutrophication, the enrichment of water with nutrients, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing bioavailable nitrogen.
- Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life.

4.44 The most notable issue in relation to the PLP is the discharge of treated sewage effluent, which is likely to increase the concentration of nutrients in Habitats sites that are dependent on the input of high-quality water. In marine Habitats sites (e.g. the Portsmouth Harbour and the Chichester and Langstone Harbours SPA / Ramsar) nitrogen is the main limiting nutrient and an increase in nutrients may cause eutrophication. Given that Portsmouth City (and the WwTW serving it) lie on the coast, there is little time for natural attenuation before these nutrients reach the respective marine sites.

4.45 Site condition assessments undertaken by Natural England in 2018 and 2019, have identified a strategic issue of nitrogen pollution in the wider Solent area. High concentrations of nitrogen (and phosphorus) are being input to these Habitats sites, primarily from agriculture sources and treated wastewater effluent. There is a high degree of certainty that nitrogen is causing eutrophication (leading to the growth of dense algal mats) and affecting the qualifying species of the Solent's Habitats sites. For example, 81% of the component SSSIs are currently in unfavourable condition. As a result, Natural England advises that new residential development in hydrological connectivity with the Solent must achieve nitrogen neutrality[67], or, if neutrality cannot be achieved, provide adequate mitigation measures.

4.46 In January 2024, the Solent was formally designated a sensitive catchment area to nitrogen under s96C of the Water Industry Act 1991. Given that both SPA's / Ramsar's adjoin Portsmouth City, impacts of surface water runoff from hardstanding on the marine water quality also need consideration. Water from overflowing sewage systems and from industrial leakages and / or spillages may contribute to the overall nutrient loading in the marine environment.

4.47 The Local Plan assessed in this HRA provides for development in the geographic area covered by Southern Water, responsible for the public water supply and wastewater treatment within Portsmouth City and the

[67] Natural England. (June 2020). Advice on Achieving Nutrient Neutrality for new Development in the Solent Region. Version 5. 56pp.

wider area surrounding it. The potential HRA implications of sewage discharge for Habitats sites associated with residential and industrial development are outlined in Table 2.

Table 2: Wastewater Treatment Works serving Portsmouth City, the potential growth accommodated and its HRA implications.

WwTW Catchment	Development quanta allocated in the Portsmouth Local Plan	HRA implications
Portsmouth and Havant WwTW (operated by Southern Water and Portsmouth Water)	13,603 residential dwellings and at least 138,429m^2 of employment floorspace	Discharge of treated sewage effluent and industrial pollutants directly into Solent's Habitats sites or into local freshwater bodies (ultimately entering the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC)

4.48 The available baseline information suggests that the following Habitats Sites are vulnerable to a decline in water quality (**the sites in bold are taken forward into the following chapters**):

- **Portsmouth Harbour SPA / Ramsar**
- **Chichester and Langstone Harbours SPA / Ramsar**
- **Solent and Southampton Water SPA**
- **Solent and Dorset Coast SPA**
- **Solent Maritime SAC**
- Solent and Isle of Wight Lagoons SAC

4.49 There is no direct hydrological connectivity between the Solent and Isle of Wight Lagoons SAC and the marine environment, except through percolation. Therefore, this site is screened out from further assessment relating to the impact pathway water quality.

Water Quantity, Level and Flow

4.50 The water level, its flow rates and the mixing conditions are important determinants of the condition of Habitats sites and their qualifying features. Hydrological processes are critical in influencing habitat characteristics in wetlands and coastal waters, including current velocity, water depth, dissolved oxygen levels, salinity and water temperature. In turn these parameters determine the short- and long-term viability of plant and animal species, as well as overall ecosystem composition. Changes to the water flow rate within an estuary can be associated with a multitude of further impact pathways, including substratum loss, smothering and changes in wave exposure, and often interact with coastal squeeze.

4.51 The unique nature of wetlands combines shallow water and conditions that are ideal for the growth of organisms at the basal level of food webs, which feed many species of birds, mammals, fish and amphibians. Overwintering, migrating and breeding wetland bird species are particularly reliant on these food sources, as they need to build up enough nutritional reserves to sustain their long migration routes or feed their hatched chicks.

4.52 Coastal habitats rely on hydrological connections with other surface waters, such as rivers, streams and lakes. A constant supply of freshwater is fundamental to maintaining the ecological integrity of coastal marine areas. However, while the natural fluctuation of water levels within narrow limits is desirable, excess or too little water supply might cause the water level to be outside of the required range of qualifying birds, invertebrate or plant species. In extreme cases, this might lead to the loss of the structure and functioning of marine ecosystems. There are two mechanisms through which urban development might negatively affect freshwater supply to Habitats Sites:

- The supply of new housing with potable water will require increased abstraction of water from surface water and groundwater bodies. Depending on the level of water stress in the geographic region, this may decrease freshwater input to Habitats sites sharing the same catchment.

- The proliferation of impermeable surfaces in urban areas increases the volume and speed of surface water runoff. As traditional drainage systems often cannot cope with the volume of stormwater, sewer overflows are designed to discharge excess water directly into watercourses. This can contribute to so-called flash floods and increased water flow into Habitats sites. Some of the knock-on impacts of surface water runoff include increases in sedimentation, turbidity and anthropogenic pollutants.

4.53 Water abstraction for the potable water supply is of particular concern in areas with little rainfall (and limited recharge potential) or where water resources are already depleted. In 2013 the Environment Agency published a map of water-stressed areas, highlighting that the south-east of England is generally identified as an area of high water stress (see Figure 3 below). This is due to its large population, high water demand and the lower annual rainfall in this area of England.

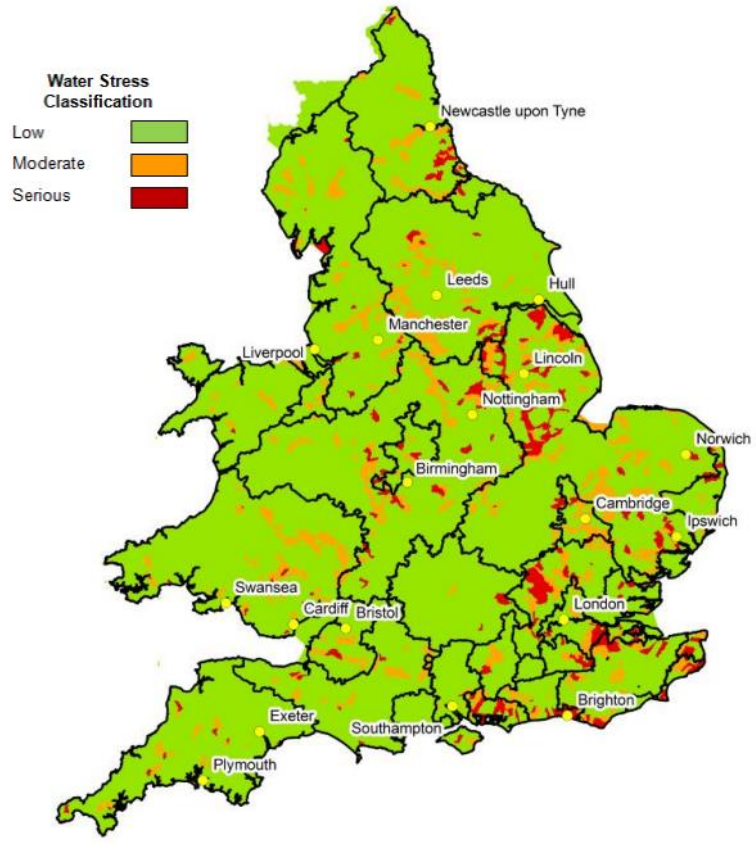

Figure 3: Areas of water stress within England.

4.54 Portsmouth City lies adjacent to several coastal Habitats sites, all of which are sensitive to changes in hydrological regime. Specifically, the Site Improvement Plan for the Solent[68] (encompassing the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC) identifies hydrological changes as a threat to the qualifying features of these sites. It states that '*Titchfield Haven has a high level of water abstraction licenses – if all were used then water levels would be too low in the SAC / SPA*'.

4.55 The water supply in Portsmouth City is provided by Portsmouth Water and South-East Water (supplying a small area in the north of the city). The further assessment stages of this impact pathway will involve an appraisal of the Water Resources Management Plans (WRMPs) of the two companies, taking account of existing licensed abstractions and the supply-demand balances over the WRMPs.

4.56 Overall, the following Habitats sites within 10km of Portsmouth City are sensitive to changes in their water quantity, level and flow as a result of urban development (**the sites in bold are taken forward into the following chapters**):

[68] The Site Improvement Plan for the Solent is published by Natural England and available at: http://publications.naturalengland.org.uk/file/5319610920337408 [Accessed on the 28/10/2020]

- **Portsmouth Harbour SPA / Ramsar**
- **Solent and Dorset Coast SPA**
- **Chichester and Langstone Harbours SPA / Ramsar**
- **Solent and Southampton Water SPA**
- **Solent Maritime SAC**
- **Solent and Isle of Wight Lagoons SAC**

Atmospheric Pollution

4.57 The main pollutants of concern for Habitats sites are oxides of nitrogen (NOx), ammonia (NH_3) and sulphur dioxide (SO_2; see Table 3). Ammonia can have a directly toxic effect upon vegetation, particularly at close distances to the source such as near road verges[69]. NOx can also be toxic at very high concentrations (far above the annual average critical level). However, in particular, high levels of NOx and NH_3 are likely to increase the total N deposition to soils, potentially leading to deleterious knock-on effects in recipient ecosystems. An increase in nitrogen deposition from the atmosphere is widely known to enhance soil fertility and to lead to eutrophication. This often has adverse effects on plant community composition and the overall quality of semi-natural, nitrogen-limited terrestrial and aquatic habitats[70],[71].

Table 3: Main sources and effects of air pollutants on habitats and species[72].

Pollutant	Source	Effects on habitats and species
Sulphur Dioxide (SO_2)	The main sources of SO_2 are electricity generation, and industrial and domestic fuel combustion. However, total SO_2 emissions in the UK have decreased substantially since the 1980's. Another origin of sulphur dioxide is the shipping industry and high atmospheric concentrations of SO_2 have been documented in busy ports. In future years shipping is likely to become one of the most important contributors to SO_2 emissions in the UK.	Wet and dry deposition of SO_2 acidifies soils and freshwater and may alter the composition of plant and animal communities. The magnitude of effects depends on levels of deposition, the buffering capacity of soils and the sensitivity of impacted species. However, SO_2 background levels have fallen considerably since the 1970's and are now not regarded a threat to plant communities. For example, decreases in Sulphur dioxide concentrations have been linked to returning lichen species and improved tree health in London.
Acid deposition	Leads to acidification of soils and freshwater via atmospheric deposition of SO_2, NOx, ammonia and hydrochloric acid. Acid deposition from rain has declined by 85% in the last 20 years, which most of this contributed by lower sulphate levels. Although future trends in S emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, increased N emissions may cancel out any gains produced by reduced S levels.	Gaseous precursors (e.g. SO_2) can cause direct damage to sensitive vegetation, such as lichen, upon deposition. Can affect habitats and species through both wet (acid rain) and dry deposition. The effects of acidification include lowering of soil pH, leaf chlorosis, reduced decomposition rates, and compromised reproduction in birds / plants. Not all sites are equally susceptible to acidification. This varies depending on soil type, bed rock geology, weathering rate and buffering capacity. For example, sites with an underlying

[69] http://www.apis.ac.uk/overview/pollutants/overview_NOx.htm.
[70] Wolseley, P. A.; James, P. W.; Theobald, M. R.; Sutton, M. A. 2006**.** Detecting changes in epiphytic lichen communities at sites affected by atmospheric ammonia from agricultural sources. *Lichenologist* **38**: 161-176
[71] Dijk, N. 2011**.** Dry deposition of ammonia gas drives species change faster than wet deposition of ammonium ions: evidence from a long-term field manipulation. *Global Change Biology* **17**: 3589-3607
[72] Information summarised from the Air Pollution Information System (http://www.apis.ac.uk/).

		geology of granite, gneiss and quartz rich rocks tend to be more susceptible.
Ammonia (NH_3)	Ammonia is a reactive, soluble alkaline gas that is released following decomposition and volatilisation of animal wastes. It is a naturally occurring trace gas, but ammonia concentrations are directly related to the distribution of livestock. At a very local level some traffic can also make a notable contribution. Ammonia reacts with acid pollutants such as the products of SO_2 and NO_X emissions to produce fine ammonium (NH_4+) - containing aerosol. Due to its significantly longer lifetime, NH_4+ may be transferred much longer distances (and can therefore be a significant trans-boundary issue). While ammonia deposition may be estimated from its atmospheric concentration, the deposition rates are strongly influenced by meteorology and ecosystem type.	The negative effect of NH_4+ may occur via direct toxicity, when uptake exceeds detoxification capacity and via N accumulation. Its main adverse effect is eutrophication, leading to species assemblages that are dominated by fast-growing and tall species. For example, a shift in dominance from heath species (lichens, mosses) to grasses is often seen. As emissions mostly occur at ground level in the rural environment and NH_3 is rapidly deposited, some of the most acute problems of NH_3 deposition are for small relict nature reserves located in intensive agricultural landscapes.
Nitrogen oxides (NO_x)	Nitrogen oxides are mostly produced in combustion processes. Half of NO_X emissions in the UK derive from motor vehicles, one quarter from power stations and the rest from other industrial and domestic combustion processes. Nitrogen oxides have been consistently falling for decades due to a combination of coal fired power station closures, abatement of other combustion point sources and improved vehicle emissions technology. They are expected to continue to fall over the plan period.	Direct toxicity effects of gaseous nitrates are likely to be important in areas close to the source (e.g. roadside verges). A critical level of NOx for all vegetation types has been set to 30 ug/m3. Deposition of nitrogen compounds (nitrates (NO_3), nitrogen dioxide (NO_2) and nitric acid (HNO_3)) contributes to the total nitrogen deposition and may lead to both soil and freshwater acidification. In addition, NO_x contributes to the eutrophication of soils and water, altering the species composition of plant communities at the expense of sensitive species.
Nitrogen deposition	The pollutants that contribute to the total nitrogen deposition derive mainly from oxidized (e.g. NO_X) or reduced (e.g. NH_3) nitrogen emissions (described separately above). While oxidized nitrogen mainly originates from major conurbations or highways, reduced nitrogen mostly derives from farming practices. The N pollutants together are a large contributor to acidification (see above).	All plants require nitrogen compounds to grow, but too much overall N is regarded as the major driver of biodiversity change globally. Species-rich plant communities with high proportions of slow-growing perennial species and bryophytes are most at risk from N eutrophication. This is because many semi-natural plants cannot assimilate the surplus N as well as many graminoid (grass) species. N deposition can also increase the risk of damage from abiotic factors, e.g. drought and frost.
Ozone (O_3)	A secondary pollutant generated by photochemical reactions involving NOx, volatile organic compounds (VOCs) and sunlight. These precursors are mainly released by the combustion of fossil fuels (as discussed above). Increasing anthropogenic emissions of ozone precursors in the UK have led to an increased number of days when ozone levels rise above 40ppb ('episodes' or 'smog'). Reducing ozone pollution is	Concentrations of O_3 above 40 ppb can be toxic to both humans and wildlife, and can affect buildings. High O_3 concentrations are widely documented to cause damage to vegetation, including visible leaf damage, reduction in floral biomass, reduction in crop yield (e.g. cereal grains, tomato, potato), reduction in the number of flowers, decrease in forest production and altered species composition in semi-natural plant communities.

	believed to require action at international level to reduce levels of the precursors that form ozone.	

4.58 Sulphur dioxide emissions overwhelmingly derive from power stations and industrial processes that require the combustion of coal and oil, as well as (particularly on a local scale) shipping[73]. Ammonia emissions mainly originate from agricultural practices[74], with some chemical processes and vehicle exhaust emissions also making notable contributions. As such, it is unlikely that material increases in SO_2 emissions will be associated with the PLP but increases in NOx and NH_3 probably would at a local level.

4.59 NOx emissions in particular are dominated by the output of vehicle exhausts (more than half of all emissions). A 'typical' housing development will contribute by far the largest portion to its overall NOx footprint (92%) through its associated road traffic. Other sources, although relevant, are of minor importance (8%) in comparison[75]. The emerging PLP, which allocates 13,603 net new dwellings in Portsmouth City, can therefore be reasonably expected to increase emissions of NOx through an increase in vehicular traffic.

4.60 According to the World Health Organisation, the critical NOx concentration (critical threshold) for the protection of vegetation is 30 μgm^{-3}; the threshold for sulphur dioxide is 20 μgm^{-3}. In addition, ecological studies have determined 'critical loads'[76] of atmospheric nitrogen deposition (that is, NOx combined with ammonia NH_3). The critical level for ammonia is 3 μgm^{-3}, or 1 μgm^{-3} where lower plants are of particular relevance.

4.61 According to the Department of Transport's Transport Analysis Guidance, beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is insignificant (Figure 4 and see reference [77]). This is therefore the distance that has been used throughout this HRA to identify major commuter routes along Habitats Sites, which are likely to be significantly affected by an increase in commuter traffic.

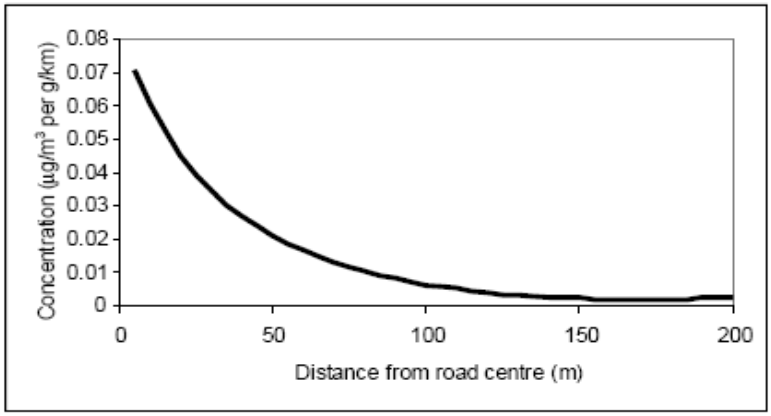

Figure 4: Traffic contribution to concentrations of pollutants at different distances from a road (Source: DfT[78])

4.62 The following Habitats sites within 10km of Portsmouth City are sensitive to atmospheric pollution arising from the Local Plan development, such as through an increase in the number of two-way vehicle trips within 200m of these sites (**the sites in bold are taken forward into the following chapters**):

- **Portsmouth Harbour SPA / Ramsar**
- **Chichester and Langstone Harbours SPA / Ramsar**
- **Solent and Southampton Water SPA**

[73] http://www.apis.ac.uk/overview/pollutants/overview_SO2.htm.
[74] Pain, B.F.; Weerden, T.J.; Chambers, B.J.; Phillips, V.R.; Jarvis, S.C. 1998. A new inventory for ammonia emissions from U.K. agriculture. *Atmospheric Environment* **32**: 309-313
[75] Proportions calculated based upon data presented in Dore CJ et al. 2005. UK Emissions of Air Pollutants 1970 – 2003. UK National Atmospheric Emissions Inventory. http://www.airquality.co.uk/archive/index.php
[76] The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur.
[77] See: http://www.dft.gov.uk/webtag/documents/expert/unit3.3.3.php#013 [Accessed on the 03/11/2020].
[78] Available at: http://www.dft.gov.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf [Accessed on the 03/11/2020].

- **Solent Maritime SAC**
- **Solent and Isle of Wight Lagoons SAC**

4.63 The Solent and Dorset Coast SPA is c.890 km^2 in area, much of which is open sea. The plunge diving tern species for which it is designated are not specialised feeders and unlike waterfowl and waders are not heavily dependent on intertidal habitats vulnerable to atmospheric nitrogen deposition. Therefore, LSEs of the emerging PLP on this site can be excluded and it is screened out of Appropriate Assessment.

Impacts of Tall Buildings on Flight Lines and Sight Lines

4.64 Tall, manmade structures have various potential ecological impacts, particularly on bird species. It is now well known that such structures can interfere with the commuting or migration routes of birds. Furthermore, tall buildings are also a physical obstacle, representing a direct risk of collision mortality.

4.65 The magnitude of a potential disturbance effect of such infrastructure is determined by several design parameters (e.g. building height, number of windows, level of illumination) and its location relative to roosting and foraging habitats. For example, the constant illumination of some buildings such as hotels is thought to lead to an entrapment effect, preventing birds from successfully completing their commuting / migratory routes. Tall structures are likely to have much higher impacts if they are positioned in established commuting or migratory corridors. This might prevent the birds' ability to use established feeding territories beyond newly built structures or alter the amount of energy required to get there.

4.66 Local Plans typically do not provide sufficient detail regarding the design of buildings, such it is often not possible to investigate this impact pathway at the plan level. A more thorough assessment on the impact of tall buildings was undertaken in the HRA of the Portsmouth Seafront Masterplan, which forms part of the overall development plan in Portsmouth City.

4.67 The PLP provides for a both employment and residential developments that could be sufficiently tall to affect bird sight lines and flight lines. This HRA will set the development proposals into ecological context (where sufficient details on their design are available), to identify whether they might represent a threat to the ranging or commuting behaviour of SPA / Ramsar birds.

4.68 The available baseline information suggests that the following Habitats sites are sensitive to the effects of tall buildings on flightlines due to their qualifying species (**the sites in bold are taken forward into the following chapters of the HRA**):

- **Portsmouth Harbour SPA / Ramsar**
- **Chichester and Langstone Harbours SPA / Ramsar**
- Solent and Southampton Water SPA / Ramsar
- Solent & Dorset Coast SPA

4.69 The closest section of the Solent and Southampton Water SPA / Ramsar, i.e. the part to the south across a small section of sea, is 4.5km from the closest point in Portsmouth City. Given this distance, it is more likely that brent geese from the SPA / Ramsar will be using functionally linked habitats on the Isle of Wight. Any geese using habitat parcels in the Portsmouth City area, are unlikely to be impacted by the PLP as emerging development is unlikely to lie in their flight trajectory. Therefore, the Solent and Southampton Water SPA / Ramsar is screened out from further assessment in relation to this impact pathway. The tern species for which Solent and Dorset Coast SPA is designated plunge-dive in open water habitats as part of their foraging behaviour and make no use of terrestrial habitat except when visiting their nesting colonies which are all immediately on the coast. Therefore, potential for impacts of the emerging PLP on the Solent & Southampton Water SPA / Ramsar and Solent & Dorset Coast SPA can be excluded.

Coastal Squeeze

4.70 Coastal squeeze[79] is a term that originates from coastal management, whereby intertidal habitats used by SPA / Ramsar birds are lost as the sea level rises and inland brownfield development (e.g. a sea wall or an industrial complex) prevents the inland migration of habitats (e.g. saltmarsh) and its associated species. As a result, the habitat is 'squeezed' and reduces in size. This is a significant process, particularly in geographic areas that are highly urbanised or that are rapidly transitioning from an undeveloped to developed state.

4.71 Additionally, as development frequently takes place immediately inland from the sea wall, flood defences generally cannot be moved landwards to accommodate managed retreat of threatened habitats. This may result in gradually reducing areas of saltmarsh and mudflat habitats adjacent to built-up areas. In areas where sediment availability is low, the coastal squeeze also includes an increasingly steep beach profile and foreshortening of the seaward zones.

4.72 The Chichester and Langstone Harbours have the North Solent Shoreline Management Plan[80] (NSSMP) in place and this indicates that there will be a combination of 'Hold the Line', 'Managed Realignment' and 'Adaptive Management' strategies. An HRA of the draft plan indicated that Hold the Line will have no effect on habitats behind the defences, whilst Managed Realignment would likely "*have a significant detrimental effect resulting in loss of designated terrestrial habitats including coastal grazing marsh, saline lagoons and grasslands*." Managed Realignment is proposed in the short term for part of Chichester Harbour. Although Hold the Line is the preferred approach for most of the shoreline, the plan notes that further studies along the Chichester and Langstone Harbours may result in a revision of the NSSMP for significant lengths of shoreline in the inner harbours.

4.73 In order to conclude that development allocated in the PLP would not result in LSEs regarding coastal squeeze, the Local Plan should not require NSSMP (or the resulting Coastal Strategy) policies for the frontage to be altered. Development would not be situated in locations that require new defences in currently undefended parts of the coastline or in areas allocated for managed realignment (i.e. adjustments to coastal flood defences). To assess this impact pathway, residential and employment sites allocated in the PLP will be assessed as to their relative distance to coastal habitats, whether they are on greenfield sites (very few are present in the urban fabric of Portsmouth) and if they lie within sections of the coast identified for managed realignment.

4.74 The following Habitats sites within 10km of Portsmouth City are sensitive to coastal squeeze and the loss of habitat as a result of Local Plan development (**the sites in bold are taken forward into the following chapters**):

- **Portsmouth Harbour SPA / Ramsar**
- **Chichester and Langstone Harbours SPA / Ramsar**
- **Solent and Southampton Water SPA**
- **Solent and Dorset Coast SPA**

Permanent Habitat Loss in the Portsmouth Harbour SPA / Ramsar

4.75 The purpose of the Conservation of Habitats and Species Regulations 2017 (as amended) is to protect Habitats Sites in England and Wales, including some the country's most important habitats and species. Any plans or projects that would result in adverse effects on a designated site (either alone or in-combination) that cannot be adequately mitigated or avoided, cannot be advanced through Local Plans or by way of planning consent unless further tests can be met. By definition, any permanent irreversible habitat loss from a designated site, above a nugatory scale, is likely to have adverse effect on integrity, as in the case of SPAs / Ramsars, this will result in the loss of foraging and / or roosting ground for birds.

[79] For a comprehensive review of coastal squeeze please see: Doody J.P. (2013). Coastal squeeze and managed realignment in southeast England, does it tell us anything about the future? *Ocean & Coastal Management* **79**: 34-41.
[80] New Forest District Council. (December 2010). North Solent Shoreline Management Plan – including Chichester, Langstone and Portsmouth Harbours & Southampton Water. Available at: http://www.northsolentsmp.co.uk/article/10025 [Accessed on the 03/11/2020].

4.76 Various developments can result in the loss of habitat in Habitats Sites, either temporary or permanent. Temporary habitat loss (e.g. such as resulting from the excavation of spoil for entrenching of piping) is reversible and there is a potential for deploying mitigation measures to avoid adverse effects on site integrity. In contrast, the permanent loss of foraging habitat might reduce the carrying capacity of a site, as a result of lower prey abundance and increased competition for resources.

4.77 Plans or projects that result in the loss of land from an SPA / Ramsar must meet the derogations tests described in Chapter 2 above.

4.78 All Habitats sites within 10km of Portsmouth City are sensitive to direct permanent habitat loss. Review of the emerging PLP indicates that one proposed site allocation will result in direct habitat loss, namely the Tipner West & Horsea Island East Strategic Site. (**the Habitats sites in bold are taken forward into the following chapters**):

- **Portsmouth Harbour SPA / Ramsar**
- **Solent & Dorset Coast SPA**

5. Test of Likely Significant Effects (LSEs)

Introduction

5.1 This stage of the HRA assesses all policies in the emerging PLP for impact pathways linking to Habitats sites. The screening assessments of all policies contained in the plan are also provided in Appendix B.

Recreational Pressure

Solent and Dorset Coast SPA

5.2 Solent and Dorset Coast is an open water site designated for foraging terns. In general foraging terns, which forage over a large area. Of the five species of tern which regularly breed in Great Britain, little tern has the most limited foraging range from its nest colonies, but even for this species the mean range is 2.1km[81]. Foraging (plunge diving) terns spend relatively little time in a specific location and are thus much less susceptible to recreational disturbance than nesting terns which are in a fixed location. Moreover, while they forage across the intertidal zone they do so when the tide is high (and thus recreational use of the foreshore is low to negligible) as they are plunge-diving birds. It is considered that the SPA is not at risk of likely significant effects due to recreational pressure from Local Plan growth, although measures implemented to protect other Habitats sites (such as Portsmouth Harbour SPA/Ramsar) would also convey protection to the intertidal parts Solent and Dorset Coast SPA.

Portsmouth Harbour SPA / Ramsar

5.3 Portsmouth Harbour SPA / Ramsar is designated for four overwintering species of waterfowl and waders: dark-bellied brent goose, dunlin and black-tailed godwit, while the Ramsar site is also designated for the intertidal mudflat and saline lagoons including eelgrass beds. It adjoins Portsea Island on its north-western side around Tipner and Horsea. The qualifying species of the SPA / Ramsar are sensitive to recreational pressure, especially because such disturbance is likely to reduce the time spent foraging and to increase energy expenditure (such as by taking flight). This is a particular threat for overwintering species, which critically depend on building up their nutritional reserves before migrating back to their breeding grounds. Natural England's Site Improvement Plan (SIP) and the Supplementary Advice on the Conservation Objectives identify public access and disturbance as the primary threat to the integrity of the site, with various research projects and mitigation measures to be progressed in the Solent. Considering that the PLP allocates 13,603 dwellings, that Portsmouth city is situated immediately east and north-east of the SPA/Ramsar, and that the PLP also promotes tourism opportunities in the plan period, it is considered that LSEs on the Portsmouth Harbour SPA / Ramsar cannot be excluded.

Chichester and Langstone Harbours SPA / Ramsar

5.4 The Chichester and Langstone Harbours SPA / Ramsar is designated for its assemblage of overwintering and breeding birds. This includes waterfowl (e.g. shelduck, wigeon, dark-bellied brent goose), waders (e.g. redshank, curlew, bar-tailed godwit) and seabirds (e.g. sandwich, common and little tern). This SPA / Ramsar adjoins Portsea Island on its eastern side, stretching into Chichester District. The recreational pressures on overwintering birds are similar to those discussed in relation to the Portsmouth Harbour SPA / Ramsar and Natural England's SIP for the Solent and Supplementary Advice on Conservation Objectives also covers this site. One marked difference to the Portsmouth Harbour SPA / Ramsar is that this site is also partly designated for breeding terns, meaning that recreational disturbance is a year-round issue in the Chichester and Langstone Harbours SPA / Ramsar. Crucially, recreational disturbance might reduce the breeding success of the ground-nesting terns, due to the cooling of eggs, reduced chick food provisioning, direct trampling damage or vandalism. Considering that the PLP allocates 13,603 dwellings, that Portsmouth

[81] Natural England. 2016. Solent and Dorset Coast Departmental Brief. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/560622/solent-dorset-departmental-brief.pdf

City is located immediately west and north-west of Langstone Harbour, and that the PLP also promotes tourism opportunities in the plan period, it is considered that LSEs on the Chichester and Langstone Harbours SPA / Ramsar cannot be excluded.

Solent & Southampton Water SPA / Ramsar

5.5 The Solent & Southampton Water SPA / Ramsar is designated for an assemblage of overwintering and breeding birds. The qualifying species include dark-bellied brent goose, black-tailed godwit and four breeding tern species (sandwich, common, little and roseate tern). As in the Chichester & Langstone Harbours SPA & Ramsar, recreational pressure is therefore a threat across all seasons, potentially affecting the overwinter foraging and the breeding success of SPA / Ramsar species. The Solent & Southampton Water SPA / Ramsar lies approx. 3.4km to the west of Portsmouth City (considerably more distant than the two Habitats sites discussed earlier in this section), and likely to be somewhat less impacted by recreational pressure from Portsmouth City residents. It is well documented that the likelihood of recreational site use reduces with distance from home.

5.6 Notwithstanding this, the SPA / Ramsar lies within the core recreational catchment (CRC) identified for the Solent Habitats sites (5.6km as identified by the work in the Bird Aware Solent project). Considering that the PLP allocates 13,603 dwellings and promotes tourism opportunities in the plan period, it is considered that LSEs on the Solent & Southampton Water SPA / Ramsar cannot be excluded.

Solent Maritime SAC

5.7 The Solent Maritime SAC is designated for a range of habitats, plant communities and the Desmoulin's whorl snail. These qualifying features are important in their own right and many (e.g. the Atlantic salt meadows and mudflats) provide critical support to bird features of the overlapping Chichester & Langstone Harbours SPA / Ramsar. Most qualifying habitats are sensitive to the abrasion and reworking of sediment on or below the surface of the seabed, which may result in significant changes to local levels of oxygenation and turbidity, as well as dislodging / destroying plant assemblages. Such impacts may result from a variety of recreational activity (e.g. dog walking, horse riding, swimming), but are most likely to result from off-roading or the mooring and anchoring associated with water-based craft, including powerboating and sailing. Natural England's SIP indicates that more research is needed regarding the effect of recreation on the annual vegetation of drift lines and the perennial vegetation of stony banks. Considering that the PLP allocates 13,603 dwellings and promotes tourism opportunities in the plan period, it is considered that LSEs on the Solent Maritime SAC cannot be excluded, given its position immediately east of the City of Portsmouth.

Screening of Policies – Recreational Pressure

5.8 The Portsmouth Harbour SPA / Ramsar, the Chichester & Langstone Harbours SPA / Ramsar, the Solent & Southampton Water SPA / Ramsar and the Solent Maritime SAC are all sensitive to the impacts of recreational pressure. It is determined that an Appropriate Assessment of potential adverse effects of the PLP on these sites is required.

5.9 The following policies in the PLP are screened in for Appropriate Assessment in relation to the impact pathway recreational pressure because they allocate new residential growth or encompass projects that are likely to increase the overall footfall in the Portsmouth City area:

- Policy PLP3: Tipner West and Horsea Island East – allocates 814 to 1250 new dwellings
- Policy PLP4: Tipner East – Allocates 1,056 new dwellings; these are already subject to two submitted planning applications (or 835 new homes from Vivid Homes (22/01292/FUL) and the application for 221 new homes from Bellway (21/01357/FUL) both of which are pending the completion of legal agreements at the time of writing (spring 2024).
- Policy PLP6: Portsmouth City Centre – Allocates 4,158 new dwellings and 1,546 m^2 gross commercial floorspace (20,000 m^2 net).
- Policy PLP7: Fratton Park and The Pompey Centre – Allocates the expansion of the football stadium from 21,000 to 26,000 capacity, 710 new dwellings and hotel with mixed conference and event facilities.

- Policy PLP8: St James' and Langstone Campus – Allocates 417 dwellings
- Policy PLP11: Port Solent – Allocates 500 dwellings
- Policy PLP12: St John's College – Allocates 212 dwellings
- Policy PLP13: Fraser Range – Allocates 134 dwellings
- Policy PLP14: The News Centre, Hilsea – Allocates 100 dwellings
- Policy PLP15: Somers Orchard – Allocates 565 dwellings (292 net)
- Policy PLP16: Housing Target – Provides for the provision of 13,603 net new dwellings between 2020 and 2040
- Policy PLP28: Town Centres – promotes projects that result in greater footfall and extended duration of activity uses in Portsmouth City
- Policy PLP30: Cultural and tourism economy– supports the delivery of cultural and tourism facilities, particularly in the coastal area of the city

Loss of Functionally Linked Habitat

Portsmouth Harbour SPA / Ramsar

5.10 Portsmouth Harbour SPA / Ramsar is designated for mobile waterfowl and wader species, which routinely roost and / or forage beyond the designated site boundary. For example, dark-bellied brent geese feed in different habitats depending on the state of the tide. At low tide, they feed on seagrass beds in the harbour, especially at Paulsgrove Lake, Portchester, and Forton Lake. Most low-tide foraging sites are included within the SPA / Ramsar designation. In contrast, at high tide the geese feed on grassland and wheat fields near the harbour, many of which lie outside the SPA / Ramsar boundary but are functionally linked habitat due to their critical importance in providing feeding grounds. Similarly, black-tailed godwits are not limited exclusively to foraging in the intertidal zone. In wet winters, this species feeds on wet grasslands, such as at RNAD Gosport, which lie outside the SPA / Ramsar boundary. The PLP allocates 13,603 net new dwellings and at least 138,429m^2 of employment land, which could involve the loss of greenfield sites that are functionally linked to the Portsmouth Harbour SPA / Ramsar. Therefore, LSEs of the emerging PLP on the SPA / Ramsar cannot be excluded and the site is screened in for Appropriate Assessment.

Chichester and Langstone Harbours SPA / Ramsar

5.11 The Chichester and Langstone Harbour SPA / Ramsar on the eastern side of Portsmouth City is designated for waterfowl, waders and seabirds that routinely move beyond the designated site boundary. During high tide, its dark-bellied brent geese feed on grassland and wheat fields inland from the harbours. Curlew, another of the site's qualifying species, will use arable and grassland fields to roost, such as on Hayling Island, at Bosham and Chidham Peninsulas and West Wittering. The allocation of greenfield sites in the emerging PLP could lead to the loss of functionally linked habitats for these species, if such sites were to be sufficiently large, comprise suitable habitats and lie within the routine commuting distances for these species. Natural England's Supplementary Advice on the Conservation Objectives for the SPA / Ramsar specifies that supporting habitats for most qualifying species lie beyond the designated site boundary. It is to be noted that most of the bird species roost or feed on shingle, saltmarsh, grazing marsh and open water. These species are not expected to be impacted by greenfield development allocations. The PLP allocates 13,603 net new dwellings and at least 138,429m^2 of employment land, which may involve development on greenfield sites that are functionally linked to the Chichester and Langstone Harbours SPA / Ramsar. Therefore, LSEs of the emerging PLP on the SPA / Ramsar cannot be excluded and the site is screened in for Appropriate Assessment.

Solent & Southampton Water SPA / Ramsar

5.12 The closest section of Portsmouth City lies approx. 4km from the Solent & Southampton Water SPA / Ramsar. The bird species most likely to depend on functionally linked habitats are dark-bellied brent geese and, to a lesser extent, black-tailed godwit. Owing to the distance between the SPA / Ramsar and

Portsmouth City, and the fact that there are extensive areas of arable fields and grassland closer to the SPA / Ramsar in Fareham District, the loss of functionally linked habitats relating to the emerging PLP is perhaps least likely for this Habitats site. Notwithstanding this, the Habitats sites designated for birds are best assessed as a unit of interdependent sites and it is determined that a further assessment of the Solent & Southampton Water SPA / Ramsar is required. The PLP allocates 13,603 net new dwellings and at least 138,429m^2 of employment land, which may result in the loss of greenfield sites that are functionally linked to the Solent & Southampton Water SPA / Ramsar. Therefore, LSEs of the emerging PLP on this site cannot be excluded and the site is screened in for Appropriate Assessment.

Screening of Policies – Loss of Functionally Linked Habitat

5.13 The Portsmouth Harbour SPA / Ramsar, the Chichester & Langstone Harbours SPA / Ramsar and the Solent & Southampton Water SPA / Ramsar are sensitive to the loss of greenfield sites that have a supporting role for its wildlife, either as roosting or foraging habitat. It is determined that an Appropriate Assessment of potential adverse effects of the PLP on these sites is required.

5.14 The following policies in the PLP are screened in for Appropriate Assessment in relation to the impact pathway loss of functionally linked habitat because they allocate development sites that could be used by SPA / Ramsar waterfowl and / or waders:

- Policy PLP3: Tipner West and Horsea Island East – allocates 814 to 1250 new dwellings
- Policy PLP4: Tipner East – Allocates 1,056 new dwellings; these are already subject to two submitted planning applications (or 835 new homes from Vivid Homes (22/01292/FUL) and the application for 221 new homes from Bellway (21/01357/FUL) both of which are pending the completion of legal agreements at the time of writing (spring 2024).
- Policy PLP5: Lakeside North Harbour – Allocates 50,000m^2 of employment space
- Policy PLP6: Portsmouth City Centre – Allocates 4,158 new dwellings and 1,546 m^2 gross commercial floorspace (20,000 m^2 net)
- Policy PLP7: Fratton Park and The Pompey Centre – Allocates the expansion of the football stadium from 21,000 to 26,000 capacity, 710 new dwellings and hotel with mixed conference and event facilities
- Policy PLP8: St James' and Langstone Campus – Allocates 417 dwellings
- Policy PLP10: Land West of Portsdown Technology Park – Allocates 12,500^2 of employment floorspace
- Policy PLP11: Port Solent – Allocates 500 dwellings
- Policy PLP12: St John's College – Allocates 212 dwellings
- Policy PLP13: Fraser Range – Allocates 134 dwellings
- Policy PLP14: The News Centre, Hilsea – Allocates 100 dwellings
- Policy PLP15: Somers Orchard – Allocates 565 dwellings (292 net), approximately 500sqm commercial space and approximately 440sqm community space.
- Policy PLP16: Housing Target – Provides for the provision of 13,603 net new dwellings between 2020 and 2040
- Policy PLP25: Employment Target – Provides for the provision of at least 138,429 m^2 of employment land between 2020 and 2040
- Policy PLP28: Town Centres – promotes projects that result in greater footfall and extended duration of activity uses in Portsmouth City
- Policy PLP30: Cultural and tourism economy– supports the delivery of cultural and tourism facilities, particularly in the coastal area of the city

Recreational Pressure in Functionally Linked Habitat

Portsmouth Harbour SPA / Ramsar

5.15 As highlighted in an earlier section, the qualifying waterfowl and waders in the Portsmouth Harbour SPA / Ramsar are sensitive to recreational pressure. By extension, this also applies to any functionally linked supporting habitats that these species depend on. Functionally linked habitats comprise amenity grassland, sections of beaches, sports grounds and commons, all of which are accessible to the public. If there is sufficient residential growth to lead to an increase in the recreational baseline, there is a potential for the site usage of birds to be impacted. The PLP allocates 13,603 net new dwellings, which is likely to increase the local recreational footfall. Therefore, LSEs of the emerging PLP on the Portsmouth Harbour SPA / Ramsar cannot be excluded and the site is screened in for Appropriate Assessment.

Chichester and Langstone Harbours SPA / Ramsar

5.16 The Chichester and Langstone Harbours SPA / Ramsar is also designated for mobile waterfowl and wader species that critically depend on functionally linked habitats beyond the site boundary. A significant increase in recreational pressure in functionally linked habitat, may reduce the way in which SPA / Ramsar birds use supporting habitats. This is primarily due to the interruption of roosting or foraging and the increased energy expenditure associated with flight and avoidance behaviours. The PLP allocates 13,603 net new dwellings, which is likely to increase the local recreational footfall. Therefore, LSEs of the emerging PLP on the Chichester and Langstone Harbours SPA / Ramsar cannot be excluded and the site is screened in for Appropriate Assessment.

Screening of Policies – Recreational Pressure in Functionally Linked Habitat

5.17 The Portsmouth Harbour SPA / Ramsar and the Chichester & Langstone Harbours SPA / Ramsar are sensitive to the impacts of recreational pressure in functionally linked habitats. It is determined that an Appropriate Assessment of potential adverse effects of the PLP on these sites is required.

5.18 The following policies in the PLP are screened in for Appropriate Assessment in relation to the impact pathway recreational pressure because they allocate new residential growth or encompass projects that are likely to increase the overall footfall in the Portsmouth City area:

- Policy PLP3: Tipner West and Horsea Island East – allocates 814 to 1250 new dwellings
- Policy PLP4: Tipner East – Allocates 1,056 new dwellings; these are already subject to two submitted planning applications (or 835 new homes from Vivid Homes (22/01292/FUL) and the application for 221 new homes from Bellway (21/01357/FUL) both of which are pending the completion of legal agreements at the time of writing (spring 2024).
- Policy PLP6: Portsmouth City Centre – Allocates 4,158 new dwellings and 1,546 m^2 gross commercial floorspace (20,000 m^2 net).
- Policy PLP7: Fratton Park and The Pompey Centre – Allocates the expansion of the football stadium from 21,000 to 26,000 capacity, 710 new dwellings and hotel with mixed conference and event facilities.
- Policy PLP8: St James' and Langstone Campus – Allocates 417 dwellings
- Policy PLP11: Port Solent – Allocates 500 dwellings
- Policy PLP12: St John's College – Allocates 212 dwellings
- Policy PLP13: Fraser Range – Allocates 134 dwellings
- Policy PLP14: The News Centre, Hilsea – Allocates 100 dwellings
- Policy PLP15: Somers Orchard – Allocates 565 dwellings (292 net)

- Policy PLP16: Housing Target – Provides for the provision of 13,603 net new dwellings between 2020 and 2040
- Policy PLP28: Town Centres – promotes projects that result in greater footfall and extended duration of activity uses in Portsmouth City
- Policy PLP30: Cultural and tourism economy– supports the delivery of cultural and tourism facilities, particularly in the coastal area of the city

Disturbance from Construction (in Habitats Sites and Functionally Linked Habitats)

Portsmouth Harbour SPA / Ramsar

5.19 The emerging PLP will result in construction works being undertaken to deliver new residential dwellings, employment opportunities or other infrastructure. Construction works may result in disturbance of SPA / Ramsar waterfowl either due to visual or noise disturbance. Research indicates that there are approximate threshold values for noise levels and distance of visual stimuli that, if exceeded, are likely to elicit behaviour changes in birds similar to those of recreational disturbance (e.g. increased vigilance, cessation of roosting / foraging and flight). The Reg.19 PLP does not allocate all individual sites (e.g. windfall) and a degree of uncertainty regarding the distribution of development therefore remains until individual planning application HRAs are produced. However, the plan contains broad Strategic Allocations in which the majority of construction is expected to occur. Regarding the Portsmouth Harbour SPA / Ramsar, the Strategic Allocations at Tipner (Policy PLP3 and PLP4) have the highest potential to result in construction disturbance. The proposal includes some requirement for land reclamation and a bridge between Tipner and Horsea Island as part of PLP3, for which construction within the SPA / Ramsar would be required. Overall, at least some of the construction works to deliver the 13,603 net new dwellings and at least 138,429m^2 of employment land will be carried out within or directly adjacent to the Portsmouth Harbour SPA / Ramsar. Therefore, LSEs of the emerging PLP on the SPA / Ramsar cannot be excluded and the site is screened in for Appropriate Assessment.

Chichester and Langstone Harbours SPA / Ramsar

5.20 The Chichester and Langstone Harbour SPA / Ramsar directly borders the eastern side of Portsmouth City. Any construction works carried out to deliver the PLP's policies within close proximity to the SPA / Ramsar, have the potential to result in disturbance of the site's waterfowl and waders. The St. James' and Langstone Campus Strategic Allocation (Policy PLP8) adjoins part of the Chichester and Langstone Harbours SPA / Ramsar and also contains established functionally linked supporting habitat parcels for SPA / Ramsar waterfowl. Construction works carried out in this site have the potential to result in visual and noise disturbance on birds. Overall, at least some of the construction works to deliver the 13,603 net new dwellings and at least 138,429m^2 of employment land will be carried out within or directly adjacent to the Chichester and Langstone Harbours SPA / Ramsar. Therefore, LSEs of the emerging PLP on the site cannot be excluded and the site is screened in for Appropriate Assessment.

Screening of Policies – Disturbance from Construction (in Habitats Sites and Functionally Linked Habitat)

5.21 The Portsmouth Harbour SPA / Ramsar and the Chichester & Langstone Harbours SPA / Ramsar are sensitive to visual and noise disturbance resulting from construction. It is determined that an Appropriate Assessment of potential adverse effects of the PLP on these sites is required.

5.22 The following policies in the PLP are screened in for Appropriate Assessment in relation to this impact pathway because construction works are likely to be required for their implementation:

- Policy PLP3: Tipner West and Horsea Island East – allocates 814 to 1250 new dwellings
- Policy PLP4: Tipner East – Allocates 1,056 new dwellings; these are already subject to two submitted planning applications (or 835 new homes from Vivid Homes (22/01292/FUL) and the

application for 221 new homes from Bellway (21/01357/FUL) both of which are pending the completion of legal agreements at the time of writing (winter 2023).

- Policy PLP5: Lakeside North Harbour – Allocates 50,000m^2 of employment space
- Policy PLP6: Portsmouth City Centre – Allocates 4,158 new dwellings and 1,546 m2 gross commercial floorspace (20,000 m^2 net)
- Policy PLP7: Fratton Park and The Pompey Centre – Allocates the expansion of the football stadium from 21,000 to 26,000 capacity, 710 new dwellings and hotel with mixed conference and event facilities
- Policy PLP8: St James' and Langstone Campus – Allocates 417 dwellings
- Policy PLP10: Land West of Portsdown Technology Park – Allocates 12,500m^2 of employment floorspace
- Policy PLP11: Port Solent – Allocates 500 dwellings
- Policy PLP12: St John's College – Allocates 212 dwellings
- Policy PLP13: Fraser Range – Allocates 134 dwellings
- Policy PLP14: The News Centre, Hilsea – Allocates 100 dwellings
- Policy PLP15: Somers Orchard – Allocates 565 dwellings (292 net), approximately 500sqm commercial space and approximately 440sqm community space.
- Policy PLP16: Housing Target – Provides for the provision of 13,603 net new dwellings between 2020 and 2040
- Policy PLP25: Employment Target – Provides for the provision of at least 138,429 m^2 of employment land between 2020 and 2040
- Policy PLP28: Town Centres – promotes projects that result in greater footfall and extended duration of activity uses in Portsmouth City
- Policy PLP30: Cultural and tourism economy– supports the delivery of cultural and tourism facilities, particularly in the coastal area of the city

Water Quality

Solent and Dorset Coast SPA

5.23 During the breeding season, the qualifying tern species of the Solent and Dorset Coast SPA rely on marine foraging resources in relatively shallow coastal waters, which they hunt by plunge diving into the water column. Their prey includes small fish (e.g. sandeels) and crustaceans, which are potentially sensitive to negative changes in water quality. An increase in nitrogen in the marine environment (for example through an increase in treated wastewater discharge) could lead to cascading indirect effects on tern foraging resources, as well as direct impacts by creating oxygen-depleted habitats. Direct pollution could arise from construction works, such as for PLP3 Tipner West and Horsea Island East for the PLP4 Tipner East. Therefore, LSEs of the emerging PLP on this site cannot be excluded and the site is screened in for Appropriate Assessment.

Portsmouth Harbour SPA / Ramsar

5.24 As discussed earlier in the report, high nutrient concentrations (specifically nitrogen in the case of marine sites) in water can cause phytoplankton and macroalgae blooms. In turn eutrophication can lead to reduced dissolved oxygen (DO) concentrations, increased turbidity and changing water temperature. Such changes have the potential to alter the fish, epifaunal and infaunal communities that its qualifying waterfowl and wader species rely upon. Using the Water Framework Directive (WFD) targets for phytoplankton and macroalgae, NE's Supplementary Advice Note for the SPA / Ramsar identifies the water quality status of

the site to be in poor condition, affected by anthropogenic impacts including treated sewage effluent, diffuse agricultural fertiliser runoff and flood alleviation discharge.

5.25 However, a review of the Wastewater Treatment Works (WwTW) infrastructure indicates that Portsmouth City is served by the Portsmouth and Havant WwTW, which discharges to Langstone Harbour to the east of Portsea Island. The discharge location is in an entirely different estuary compared to the Portsmouth Harbour SPA / Ramsar, separated by a distance of approx. 16km including a section of the English Channel. Given this long distance and that natural nutrient attenuation, tidal mixing and dilution factors will come into play, it is concluded that the emerging PLP will is much less likely to result in LSEs on the water quality in the Portsmouth Harbour SPA / Ramsar than in Langstone Harbour. However, direct pollution could arise from construction works, such as for PLP3 Tipner West and Horsea Island East for the PLP4 Tipner East. Therefore, as a precaution LSEs of the emerging PLP on this site cannot be excluded and the site is screened in for Appropriate Assessment.

Chichester and Langstone Harbours SPA / Ramsar

5.26 The sensitivity of the Chichester and Langstone Harbours SPA / Ramsar to negative changes in water quality is similar to that of the Portsmouth Harbour SPA / Ramsar. The Environment Agency's Weight of Evidence approach identifies the site's current water quality status in terms of macroalgal and phytoplankton markers as poor. Portsmouth City is served by the Portsmouth and Havant WwTW which discharges into Langstone Harbour via a long outfall pipe. Given that there is direct hydrological connectivity between the WwTW and the SPA / Ramsar, it is considered that nitrogen in treated sewage effluent poses a risk to the site's qualifying species and their supporting habitats.

5.27 Given its hydrological connection with development in Portsmouth City, the Chichester and Langstone Harbours SPA / Ramsar (and the Solent Maritime SAC discussed further below) are the two main sites that would be impacted by additional nitrogen discharge in treated wastewater effluent. In line with Natural England guidance, all residential proposals would need to achieve nutrient neutrality to be demonstrated by detailed nitrogen calculations. The Appropriate Assessment will discuss the issue of nutrient neutrality further.

5.28 The PLP allocates 13,603 net new dwellings and at least 138,429m^2 of employment land, which will increase the amount of wastewater produced in Portsmouth City and the volume of treated sewage effluent that will ultimately be returned to the sea south of the Portsmouth and Havant WwTW. Therefore, LSEs of the emerging PLP on this site cannot be excluded and the site is screened in for Appropriate Assessment.

Solent & Southampton Water SPA / Ramsar

5.29 The Solent & Southampton Water SPA / Ramsar, while sensitive to a decline in water quality in principle, is unlikely to be impacted by the emerging PLP. Primarily, this is due to the long distance between the discharge location of the Portsmouth and Havant WwTW and the boundary of the SPA / Ramsar. Due to the distance involved, it is considered that there is very limited to no hydrological connectivity between Langstone Harbour and the Solent & Southampton Water SPA / Ramsar. Any nutrient load from the WwTW will be subject to nutrient attenuation, tidal mixing and dilution, removing the potential for elevated nitrogen concentrations to reach the SPA / Ramsar. It is concluded that the emerging PLP will not result in LSEs on the water quality in the Solent & Southampton Water SPA / Ramsar. Therefore, this site is screened out from Appropriate Assessment in relation to this impact pathway.

Solent Maritime SAC

5.30 The Solent Maritime SAC is a complex marine site, comprising a wide range of habitats including Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), spartina swards (*Spartinion maritimae*) and *Salicornia* (and other annuals colonizing mud and sand). The community composition and overall ecological integrity in these habitats is tightly linked to water quality. Maintaining the structure of these habitats is also crucial for the overlapping SPAs / Ramsars, which are designated for birds that feed on common saltmarsh grass, invertebrates or fish. Natural England's Supplementary Advice Note for the SAC specifies that the site is currently in poor water quality condition (as shown by indicators of eutrophication). Notwithstanding this, other indicators of water quality (e.g. DO concentrations, turbidity) have been shown to be in good condition.

5.31 The Solent Maritime SAC encompasses the area around Langstone Harbour, into which treated sewage effluent from the Portsmouth and Havant WwTW will discharge. Therefore, there is direct hydrological

linkage between growth allocated in the emerging PLP and the Solent Maritime SAC, with the potential for additional nitrogen to be added into the ecosystem. The PLP allocates 13,603 net new dwellings and at least 138,429m^2 of employment land, which will increase the amount of wastewater produced in Portsmouth City and the volume of treated sewage effluent that will reach the Solent Maritime SAC. Therefore, LSEs of the emerging PLP on this site cannot be excluded and the site is screened in for Appropriate Assessment.

Screening of Policies – Water Quality

5.32 Overall, for Solent & Dorset Coast SPA, Portsmouth Harbour SPA/Ramsar site, Chichester & Langstone Harbours SPA / Ramsar and the Solent Maritime SAC LSEs relating to water quality changes cannot be excluded. It is determined that an Appropriate Assessment of potential adverse effects of the PLP on these sites is required.

5.33 The following policies in the PLP are screened in for Appropriate Assessment in relation to the impact pathway water quality because they will increase the volume of treated sewage effluent reaching the Solent:

- Policy PLP3: Tipner West and Horsea Island East – allocates 814 to 1250 new dwellings
- Policy PLP4: Tipner East – Allocates 1,056 new dwellings; these are already subject to two submitted planning applications (or 835 new homes from Vivid Homes (22/01292/FUL) and the application for 221 new homes from Bellway (21/01357/FUL) both of which are pending the completion of legal agreements at the time of writing (spring 2024).
- Policy PLP5: Lakeside North Harbour – Allocates 50,000m^2 of employment space
- Policy PLP6: Portsmouth City Centre – Allocates 4,158 new dwellings and 1,546 m2 gross commercial floorspace (20,000 m^2 net)
- Policy PLP7: Fratton Park and The Pompey Centre – Allocates the expansion of the football stadium from 21,000 to 26,000 capacity, 710 new dwellings and hotel with mixed conference and event facilities
- Policy PLP8: St James' and Langstone Campus – Allocates 417 dwellings
- Policy PLP10: Land West of Portsdown Technology Park – Allocates 12,500m^2 of employment floorspace
- Policy PLP11: Port Solent – Allocates 500 dwellings
- Policy PLP12: St John's College – Allocates 212 dwellings
- Policy PLP13: Fraser Range – Allocates 134 dwellings
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- Policy PLP15: Somers Orchard – Allocates 565 dwellings (292 net), approximately 500sqm commercial space and approximately 440sqm community space.
- Policy PLP16: Housing Target – Provides for the provision of 13,603 net new dwellings between 2020 and 2040
- Policy PLP25: Employment Target – Provides for the provision of at least 138,429 m^2 of employment land between 2020 and 2040
- Policy PLP28: Town Centres – promotes projects that result in greater footfall and extended duration of activity uses in Portsmouth City
- Policy PLP30: Cultural and tourism economy– supports the delivery of cultural and tourism facilities, particularly in the coastal area of the city

Water Quantity, Level and Flow

Solent and Dorset Coast SPA

5.34 The foraging terns for which this SPA are designated are not specialised feeders and prey on a range of fish including sandeels, clupeids such as herring and sardine, invertebrates and crustaceans. The SPA is c.890 km^2 in area, much of which is open sea and not heavily dependent on a particular volume or rate of freshwater inputs. Of the five species of tern which regularly breed in Great Britain, little tern has the most limited foraging range from its nest colonies, but even for this species the mean range is 2.1km[82] and therefore small scale local differences in freshwater input will only affect a very small part of the overall foraging area even when considered cumulatively. Therefore, LSEs of the emerging PLP on this site can be excluded and it is screened out of Appropriate Assessment.

Portsmouth Harbour SPA / Ramsar

5.35 The bird species for which the Portsmouth Harbour SPA / Ramsar is designated depend on sufficient water levels for roosting and foraging. For example, red-breasted merganser require an optimal water depth between 2-4m for efficient detection of prey species at critical times of the year. Other species such as dark-bellied brent geese and black-tailed godwits require sufficient amounts of freshwater in foraging or roosting habitats, such as mudflats and grazing marsh. The hydrology and flow in supporting habitats will have critical impacts on available water area, water depth, salinity, turbidity and dissolved oxygen concentrations.

5.36 The increasing population and employment centres in Portsmouth City will be supplied with potable water. Depending on where and how much freshwater is extracted, this might impact the amount of freshwater flowing into the SPA / Ramsar and the wider marine environment. Meeting Portsmouth's water demand may also involve the desalination of saltwater, thereby removing water directly from the marine environment. Notwithstanding the source of potable water, any water supply solution that involves the expansion of existing licensed abstractions or development of a new water resource, has the potential to affect the water quantity, level and flow in the SPA / Ramsar.

5.37 The PLP allocates 13,603 net new dwellings and at least 138,429m^2 of employment land, which will increase the amount of potable water needed to meet Portsmouth City's water demand. This may have implications on the water quantity, level and flow in the Portsmouth Harbour SPA / Ramsar. Therefore, LSEs of the emerging PLP on this site cannot be excluded and it is screened in for Appropriate Assessment.

Chichester and Langstone Harbours SPA / Ramsar

5.38 The Chichester and Langstone Harbours SPA / Ramsar is designated for bird species that all depend on natural fluctuations in water depth in their supporting habitats. For example, shovelers feed on small crustaceans and other aquatic invertebrates that they filter out from water with comb-like projections called lamellae. Given that they feed from the water surface, they depend on an optimal water depth of less than 0.3m deep. In contrast, redshank (a medium-sized wader species) feeds on molluscs and crustaceans by probing their bills into substrate. Redshank require a standing water depth between 1-5cm deep.

5.39 Various freshwater bodies contribute to Langstone harbour, including the Great Salterns Drain, Brockhampton Stream, Harts Farm Way Stream, Hermitage Stream, Bedhampton Brook, West Brook, River Ems and others. Additional abstraction in excess of the agreed abstraction licenses from any of these connecting waterways or the development of new water resources could reduce freshwater input into the Chichester and Langstone Harbours SPA / Ramsar, potentially affecting the foraging / roosting habitats of SPA / Ramsar birds.

5.40 Overall, the PLP allocates 13,603 net new dwellings and 138,429m^2 of employment land, which will increase the amount of potable water needed to meet Portsmouth City's water demand. This may have implications on the water quantity, level and flow in the Chichester and Langstone Harbours SPA / Ramsar. Therefore, LSEs of the emerging PLP on this site cannot be excluded and it is screened in for Appropriate Assessment.

Solent & Southampton Water SPA / Ramsar

5.41 The qualifying species in the Southampton Water SPA / Ramsar also depend on appropriate water depths and extents. As for other Habitats sites in the Solent, specific requirements differ between species. Owing

[82] Natural England. 2016. Solent and Dorset Coast Departmental Brief. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/560622/solent-dorset-departmental-brief.pdf

to their foraging strategy, teal ideally forage in standing water of less than 0.1m deep. In contrast, black-tailed godwits forage in slightly deeper sections of water. Maintaining appropriate availability of water is also important for ringed plovers and dark-bellied brent geese. Water supply strategies to meet the future demand for Portsmouth City's potable water demand, have the potential to alter the freshwater supply in the SPA / Ramsar.

5.42 Overall, the PLP allocates 13,603 net new dwellings and at least 138,429m^2 of employment land, which will increase the amount of potable water needed to meet Portsmouth City's water demand. This may have implications on the water quantity, level and flow in the Solent & Southampton Water SPA / Ramsar. Therefore, LSEs of the emerging PLP on this site cannot be excluded and it is screened in for Appropriate Assessment.

Solent Maritime SAC

5.43 The Solent Maritime SAC is designated for several habitats and the Desmoulin's whorl snail, all of which are sensitive to changes in the hydrological flow regime. For example, a reduction in the amount of freshwater input is likely to affect the salinity, turbidity and habitat available in the habitats of the SAC. As such, a reduced water flow in waterbodies feeding into the SAC could result in the drying up of saltmarsh in the supralittoral zone. Changes in freshwater supply may have knock-on impacts on the composition of plant communities and the associated fauna, such as the Desmoulin's whorl snail. This species is adapted to low salinity conditions and is highly sensitive to an increase in salt concentrations.

5.44 Overall, the PLP allocates 13,603 net new dwellings and at least 138,429m^2 of employment land, which will increase the amount of potable water supplied to Portsmouth City. This may have implications on the water quantity, level and flow in the Solent Maritime SAC. Therefore, LSEs of the emerging PLP on this site cannot be excluded and it is screened in for Appropriate Assessment.

Screening of Policies – Water Quantity, Level and Flow

5.45 LSEs regarding water quantity, level and flow cannot be excluded for any of the Solent's Habitats sites. It is determined that an Appropriate Assessment of potential adverse effects of the PLP on these sites is required.

5.46 The following policies in the PLP are screened in for Appropriate Assessment in relation to the impact pathway water quantity, level and flow because they directly increase the water demand in Portsmouth City:

- Policy PLP3: Tipner West and Horsea Island East – allocates 814 to 1250 new dwellings
- Policy PLP4: Tipner East – Allocates 1,056 new dwellings; these are already subject to two submitted planning applications (or 835 new homes from Vivid Homes (22/01292/FUL) and the application for 221 new homes from Bellway (21/01357/FUL) both of which are pending the completion of legal agreements at the time of writing (spring 2024).
- Policy PLP5: Lakeside North Harbour – Allocates 50,000m^2 of employment space
- Policy PLP6: Portsmouth City Centre – Allocates 4,158 new dwellings and 1,546 m2 gross commercial floorspace (20,000 m^2 net)
- Policy PLP7: Fratton Park and The Pompey Centre – Allocates the expansion of the football stadium from 21,000 to 26,000 capacity, 710 new dwellings and hotel with mixed conference and event facilities
- Policy PLP8: St James' and Langstone Campus – Allocates 417 dwellings
- Policy PLP10: Land West of Portsdown Technology Park – Allocates 12,500m^2 of employment floorspace
- Policy PLP11: Port Solent – Allocates 500 dwellings
- Policy PLP12: St John's College – Allocates 212 dwellings
- Policy PLP13: Fraser Range – Allocates 134 dwellings

- Policy PLP14: The News Centre, Hilsea – Allocates 100 dwellings
- Policy PLP15: Somers Orchard – Allocates 565 dwellings (292 net), approximately 500sqm commercial space and approximately 440sqm community space.
- Policy PLP16: Housing Target – Provides for the provision of 13,603 net new dwellings between 2020 and 2040
- Policy PLP25: Employment Target – Provides for the provision of at least 138,429 m^2 of employment land between 2020 and 2040
- Policy PLP28: Town Centres – promotes projects that result in greater footfall and extended duration of activity uses in Portsmouth City
- Policy PLP30: Cultural and tourism economy– supports the delivery of cultural and tourism facilities, particularly in the coastal area of the city.

Atmospheric Pollution

Portsmouth Harbour SPA / Ramsar

5.47 All four qualifying species (red-breasted merganser, black-tailed godwit, dark-bellied brent goose and dunlin) of the SPA / Ramsar rely on littoral sediment, which APIS identifies as being relatively tolerant of atmospheric nitrogen deposition (with a relatively high nitrogen critical load of 20-30 kg N/ha/yr, recently (Spring 2023). This was lowered to 10-20 kgN/ha/yr for upper saltmarsh in 2023 but upper saltmarsh is of less importance to the SPA/Ramsar birds than lower and pioneer saltmarsh, and SPA birds are less sensitive to subtle botanical changes than major structural changes. Therefore it is considered that for the SPA/Ramsar the higher critical load of 20 kgN/ha/yr is appropriate. For black-tailed godwits, which feed on aquatic invertebrates in mud, the effect of nitrogen addition to the system may balance out because an increase in nutrients may increase the number of prey items available to them. In contrast, dark-bellied brent geese feed on coastal saltmarsh, which could be replaced by other plant communities under elevated nutrient concentrations. Therefore, an increase in road traffic could lead to negative impacts on the geese due to the loss of suitable foraging habitat.

5.48 To establish the sensitivity of a Habitats site to atmospheric pollution arising from traffic, a detailed assessment of sensitive habitats within the site needs to be undertaken. Habitat mapping on MAGIC identifies that there are relatively few sections of coastal saltmarsh within the SPA / Ramsar in general. Only one of these habitat parcels lies within 200m of a major road, the A32 Gosport Road to the south-east of Cams Alders Sports Centre. Even here, the closest area of saltmarsh is 171m from the roadside and consists of a small patch, well beyond the zone where most of the nitrogen from the road will be deposited. This road is unlikely to constitute a major journey-to-work route for the majority of Portsmouth City residents.

5.49 However, part of the proposals for PLP3 (Tipner West and Horsea Island East) involve the creation of a bridge for buses running alongside the M275, impacting mudflat habitat. Therefore this is screened in for discussion in the appropriate assessment.

Chichester and Langstone Harbours SPA / Ramsar

5.50 While the qualifying species of the Chichester and Langstone Harbours SPA / Ramsar are not directly sensitive to atmospheric nitrogen deposition, the prey species and habitats that the waterfowl and waders rely on may be impacted by atmospheric pollutant deposition. Most waders feed on crustaceans or molluscs in littoral sediment (most often the mudflats) and this habitat has a relatively high nitrogen critical load of 20-30 kg N/ha/yr. In 2023 the critical load was lowered to 10-20 kgN/ha/yr for upper saltmarsh, but upper saltmarsh is of less importance to the SPA/Ramsar birds than lower and pioneer saltmarsh and SPA birds are less sensitive to subtle botanical changes than major structural changes. Therefore it is considered that for the SPA/Ramsar the higher critical load of 20 kgN/ha/yr is appropriate.

5.51 The SPA/Ramsar is therefore of relatively low sensitivity to atmospheric nitrogen and a review of evidence on APIS highlights that the current background nitrogen deposition rate (12.06-13.44 kgN/ha/yr) lies far below the 20 kgN/ha/yr nitrogen critical load for intertidal mudflats and lower saltmarsh. The relatively low sensitivity applies to lower saltmarsh, which provides foraging habitat for shelducks, wigeon and dark-bellied

brent geese. A section of saltmarsh within the SPA / Ramsar lies adjacent to the A27 / A3 interchange in the adjoining authority of Havant. This road is likely to form a major journey-to-work route for commuters travelling to or from Portsmouth City. As such, it is considered that LSEs of the PLP on saltmarsh habitat in the Chichester and Langstone Harbours SPA / Ramsar cannot be excluded.

5.52 The Chichester and Langstone Harbours SPA / Ramsar is also designated for three nesting seabird species: sandwich tern, common tern and little tern. Terns preferentially nest in sand dunes or vegetated shingle. Therefore, detailed habitat mapping within the Chichester and Langstone Harbours SPA / Ramsar was consulted on MAGIC to establish whether potential tern habitat lies within 200m of potential commuter routes for Portsmouth City residents. No sand dune or other suitable nesting habitat was identified within this screening distance within or outside of Portsmouth City. A section of vegetated shingle appears from MAGIC to lie directly adjacent to the A27 in Havant District within the Farlington Marshes Nature Reserve. Any new residents with employment in the Districts of Havant, Chichester or East Hampshire would pass this part of the SPA / Ramsar, as this lies along the quickest route identified on navigation software (e.g. Google Maps, Waze).

5.53 However, scrutiny of aerial photography suggests that this is a mapping error as no coastal vegetated shingle is visible in Farlington Marshes Nature Reserve. A detailed traffic and air quality impact assessment was undertaken for Havant's Local Plan[83]. This considered the SPA adjacent to the A27. Table 3-6 of that report discusses ground truthing undertaken for the HRA and for the relevant part of Farlington Marshes no vegetated shingle is mentioned, which supports the view that this is a mapping data error. The Habitats Regulations Assessment of the Havant Local Plan also states that '*the areas predicted to exceed the screening thresholds overlap the northern-most island within this reserve; however, no suitable breeding habitat for common tern is present within this area. In addition, BTO core count data indicates records of common tern have only been made for the 14/15 monitoring season at a peak count of 4 individuals. Whilst records of common tern have only been made during one monitoring season in Langstone Harbour, annual recordings of the species have been made at the adjacent Chichester Harbour. Given the isolated single-year record of this species at Langstone Harbour, and the preference of common tern for Chichester Harbour, any impacts to potentially suitable breeding habitat within the areas of exceedance are unlikely to cause adverse effects to this species.*' Given the general absence of suitable nesting habitats for terns in Langstone Harbour and the low counts of terns in this section of the SPA / Ramsar, it is concluded that the emerging PLP will not result in LSEs on nesting terns in relation to atmospheric pollution.

Solent Maritime SAC

5.54 The Solent Maritime SAC stretches along the eastern boundary of Portsmouth City. It is designated for a variety of habitats, including saltmarsh, shifting dunes and perennial vegetation of stony banks[84]. APIS identifies that both coastal dunes and perennial vegetation of stony banks are sensitive to nitrogen deposition with nitrogen critical loads of 10-20 kg N/ha/yr and 8-15 kg N/ha/yr respectively. There is sensitive saltmarsh habitat within 200m of the A27 in the adjoining authority of Havant, which has already been screened in as part of the overlapping Chichester and Langstone Harbours SPA / Ramsar. There is no sand dune habitat identified within 200m of relevant roads.

5.55 Ground truthing carried out by Ricardo Energy & Environment for the aforementioned air quality study for Havant Borough Council suggested that there were two areas comprising perennial vegetation of stony banks within 200m of the A2030, which run alongside the SAC on a north-south axis and is otherwise bordered by intertidal mudflats. This is likely to be an important route for residents out-commuting from Portsmouth City into adjacent authorities (e.g. Havant), or people working in Portsmouth City's southern employment centres. However, detailed survey work undertaken for the NPI Phase 4 Coastal Defence Project by Coastal Partners indicated that although the substrate was shingle, the habitat was saltmarsh (primarily communities SM24 (*Elymus pycnanthus* salt-marsh community) and SM14 (*Halimione portaculoides* salt-marsh community)). These are lower marsh or otherwise low nitrogen sensitivity

[83] https://www.havant.gov.uk/sites/default/files/documents/Air%20Quality%20Habitat%20Regulations%20Assessment.pdf

[84] Note that the Habitats Directive definition of 'perennial vegetation of stony banks' does not apply to any and all perennial vegetation found on shingle but to very specific plant communities. According to the JNCC page for this habitat it is: *'namely SD1 Rumex crispus – Glaucium flavum shingle community. Narrow, less-stable structures (spits and bars or the fringing beach associated with older, fossil beaches) are more exposed to waves or salt spray. Where wave energy causes movement of the shingle, the plant communities have affinities with 1210 Annual vegetation of drift lines. The presence of the yellow horned-poppy Glaucium flavum and the rare sea-kale Crambe maritima and sea pea Lathyrus japonicus, all species that can tolerate periodic movement, is significant. In more stable areas above this zone, where sea spray is blown over the shingle, plant communities with a high frequency of salt-tolerant species such as thrift Armeria maritima and sea campion Silene uniflora occur. These may exist in a matrix with abundant lichens'.*

communities which would mean the higher critical load of 20-30 kgN/ha/yr is more applicable. Nonetheless, traffic and air quality modelling has been undertaken for this link and is discussed in the appropriate assessment.

Screening of Policies – Atmospheric Pollution

5.56 LSEs regarding atmospheric pollution cannot be excluded for the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC, due to the potential for impacts on saltmarsh habitat. It is determined that an Appropriate Assessment of potential adverse effects of the PLP on these sites is required.

5.57 The following policies in the PLP are screened in for Appropriate Assessment in relation to this impact pathway, because they are likely to lead to an increase in commuter traffic along major roads within 200m of Habitats sites:

- Policy PLP3: Tipner West and Horsea Island East – allocates 814 to 1250 new dwellings
- Policy PLP4: Tipner East – Allocates 1,056 new dwellings; these are already subject to two submitted planning applications (or 835 new homes from Vivid Homes (22/01292/FUL) and the application for 221 new homes from Bellway (21/01357/FUL) both of which are pending the completion of legal agreements at the time of writing (spring 2024).
- Policy PLP5: Lakeside North Harbour – Allocates 50,000m^2 of employment space
- Policy PLP6: Portsmouth City Centre – Allocates 4,158 new dwellings and 1,546 m2 gross commercial floorspace (20,000 m^2 net)
- Policy PLP7: Fratton Park and The Pompey Centre – Allocates the expansion of the football stadium from 21,000 to 26,000 capacity, 710 new dwellings and hotel with mixed conference and event facilities
- Policy PLP8: St James' and Langstone Campus – Allocates 417 dwellings
- Policy PLP10: Land West of Portsdown Technology Park – Allocates 12,500m^2 of employment floorspace
- Policy PLP11: Port Solent – Allocates 500 dwellings
- Policy PLP12: St John's College – Allocates 212 dwellings
- Policy PLP13: Fraser Range – Allocates 134 dwellings
- Policy PLP14: The News Centre, Hilsea – Allocates 100 dwellings
- Policy PLP15: Somers Orchard – Allocates 565 dwellings (292 net), approximately 500sqm commercial space and approximately 440sqm community space.
- Policy PLP16: Housing Target – Provides for the provision of 13,603 net new dwellings between 2020 and 2040
- Policy PLP25: Employment Target – Provides for the provision of at least 138,429 m^2 of employment land between 2020 and 2040
- Policy PLP28: Town Centres – promotes projects that result in greater footfall and extended duration of activity uses in Portsmouth City
- Policy PLP30: Cultural and tourism economy– supports the delivery of cultural and tourism facilities, particularly in the coastal area of the city

Impacts of Tall Buildings on Flight Lines and Sight Lines

Portsmouth Harbour SPA / Ramsar

5.58 The Portsmouth Harbour SPA / Ramsar is partly designated for black-tailed godwits and brent geese. Both species are reliant on functionally linked habitats outside the designated site boundary for roosting and / or foraging. It is well known that these birds preferentially seek out habitats with clear flight lines as this facilitates navigation. Furthermore, land parcels with open sight lines are preferred for the early detection of predators or the visibility of display behaviours. The PLP comprises Strategic Allocations that may involve the construction of tall buildings and are likely to increase the extent of urban frontage within Portsmouth City. If tall buildings or new urban frontages were to be constructed surrounding functionally linked habitats, this may reduce the ability of qualifying bird species to use these habitats. Overall, the PLP allocates 13,603 net new dwellings and at least which will increase the amount of urban frontage in Portsmouth City and may involve the construction of tall buildings. If close enough to functionally linked habitats, this may render this supporting land less suitable to SPA / Ramsar waterfowl and waders. Therefore, LSEs of the emerging PLP on the Portsmouth Harbour SPA / Ramsar cannot be excluded and the site is screened in for Appropriate Assessment.

Chichester and Langstone Harbours SPA / Ramsar

5.59 The Chichester and Langstone Harbours SPA / Ramsar is also designated for mobile bird species that depend on non-designated supporting habitats, preferentially those that offer clear flight lines and sight lines. Any tall buildings or new urban frontages within close proximity to functionally linked habitats could reduce the usage of such sites by birds. Review of the emerging PLP indicates that one Strategic Allocation (St. James' and Langstone Campus) has the potential to affect the flight lines and sight lines in functionally linked habitats relevant to the SPA / Ramsar. Overall, the PLP allocates 13,603 net new dwellings and at least 138,429m^2 of employment land, which will increase the amount of urban frontage in Portsmouth City and may involve the construction of tall buildings. If close enough to functionally linked habitats, this may render this supporting habitat less suitable to SPA / Ramsar waterfowl and waders. Therefore, LSEs of the emerging PLP on the Chichester and Langstone Harbours SPA / Ramsar cannot be excluded and the site is screened in for Appropriate Assessment.

Screening of Policies – Impacts of Tall Buildings on Flight Lines and Sight Lines

5.60 The Portsmouth Harbour SPA / Ramsar and the Chichester & Langstone Harbours SPA / Ramsar are sensitive to impacts of tall buildings on flight lines and sight lines of SPA / Ramsar birds, in particular relating to new buildings in the vicinity of functionally linked habitat. It is determined that an Appropriate Assessment of potential adverse effects of the PLP on these sites is required.

5.61 The following policies in the PLP are screened in for Appropriate Assessment in relation to this impact pathway because they involve the construction of new buildings and increased urban frontages:

- Policy PLP3: Tipner West and Horsea Island East – allocates 814 to 1250 new dwellings
- Policy PLP4: Tipner East – Allocates 1,056 new dwellings; these are already subject to two submitted planning applications (or 835 new homes from Vivid Homes (22/01292/FUL) and the application for 221 new homes from Bellway (21/01357/FUL) both of which are pending the completion of legal agreements at the time of writing (spring 2024).
- Policy PLP5: Lakeside North Harbour – Allocates 50,000m^2 of employment space
- Policy PLP6: Portsmouth City Centre – Allocates 4,158 new dwellings and 1,546 m2 gross commercial floorspace (20,000m^2)
- Policy PLP7: Fratton Park and The Pompey Centre – Allocates the expansion of the football stadium from 21,000 to 26,000 capacity, 710 new dwellings and hotel with mixed conference and event facilities

- Policy PLP8: St James' and Langstone Campus – Allocates 417 dwellings
- Policy PLP10: Land West of Portsdown Technology Park – Allocates 12,500m^2 of employment floorspace
- Policy PLP11: Port Solent – Allocates 500 dwellings
- Policy PLP12: St John's College – Allocates 212 dwellings
- Policy PLP13: Fraser Range – Allocates 134 dwellings
- Policy PLP14: The News Centre, Hilsea – Allocates 100 dwellings
- Policy PLP15: Somers Orchard – Allocates 565 dwellings (292 net), approximately 500sqm commercial space and approximately 440sqm community space.
- Policy PLP16: Housing Target – Provides for the provision of 13,603 net new dwellings between 2020 and 2040
- Policy PLP25: Employment Target – Provides for the provision of at least 138,429 m^2 of employment land between 2020 and 2040
- Policy PLP28: Town Centres – promotes projects that result in greater footfall and extended duration of activity uses in Portsmouth City
- Policy PLP30: Cultural and tourism economy– supports the delivery of cultural and tourism facilities, particularly in the coastal area of the city

Coastal Squeeze

Solent and Dorset Coast SPA

5.62 As described in the section on impact pathways, coastal squeeze describes the disappearance of protected habitats as a result of sea level rise and coastal defences preventing an inland migration of these habitats. The SPA encompasses the western side of Portsea Island, an area which is characterised by 'Hold the Line' defences to prevent the flooding of highly populated conurbations. Sea level rise in this area could contribute to the loss of intertidal mudflats. However, the SPA is c.890 km^2 in area, much of which is open sea, and even the tern species with the most limited foraging range (little tern) has a mean range of 2.1km[85]. Moreover, the plunge diving tern species for which the SPA is designated are not specialised feeders and unlike waterfowl and waders are not heavily dependent on intertidal habitats Therefore, LSEs of the emerging PLP on the Solent and Dorset Coast SPA /as a result of coastal squeeze can be excluded and the site is screened out of Appropriate Assessment.

Portsmouth Harbour SPA / Ramsar

5.63 As described in the section on impact pathways, coastal squeeze describes the disappearance of protected habitats as a result of sea level rise and coastal defences preventing an inland migration of these habitats. The Portsmouth Harbour SPA / Ramsar lies on the western side of Portsea Island, an area which is characterised by 'Hold the Line' defences to prevent the flooding of highly populated conurbations. Sea level rise in this area could contribute to the loss of intertidal mudflats and, to a lesser degree, saltmarsh. The PLP allows for new or replacement defence structures and any changes to the existing shoreline management could fuel further loss of designated habitats. Therefore, LSEs of the emerging PLP on the Portsmouth Harbour SPA / Ramsar as a result of coastal squeeze cannot be excluded and the site is screened in for Appropriate Assessment.

Chichester and Langstone Harbours SPA / Ramsar

5.64 The Chichester and Langstone Harbours SPA / Ramsar also encompasses important mudflat and saltmarsh habitats, the disappearance of which may significantly reduce the amount of roosting and foraging habitat

[85] Natural England. 2016. Solent and Dorset Coast Departmental Brief. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/560622/solent-dorset-departmental-brief.pdf

for SPA / Ramsar waterfowl and waders. The SPA / Ramsar lies on the eastern side of Portsmouth, which is also protected from flooding by 'Hold the Line' defences. While the existing shoreline management underwent HRA previously, any deviation from the current defence structures may result in additional impacts on the Chichester and Langstone Harbours SPA / Ramsar. Therefore, LSEs of the emerging PLP on the site due to coastal squeeze cannot be excluded and the site is screened in for Appropriate Assessment.

Screening of Policies – Coastal Squeeze

5.65 The Portsmouth Harbour SPA / Ramsar and the Chichester & Langstone Harbours SPA / Ramsar are sensitive to the process of coastal squeeze. It is determined that an Appropriate Assessment of potential adverse effects of the PLP on these sites is required.

5.66 The following policies in the PLP are screened in for Appropriate Assessment in relation to this impact pathway because they allow for new and / or replacement coastal defence structures:

- Policy PLP3: Tipner West and Horsea Island East – allocates 814 to 1250 new dwellings
- Policy PLP4: Tipner East – Allocates 1,056 new dwellings; these are already subject to two submitted planning applications (or 835 new homes from Vivid Homes (22/01292/FUL) and the application for 221 new homes from Bellway (21/01357/FUL) both of which are pending the completion of legal agreements at the time of writing (spring 2024).
- Policy PLP8: St James' and Langstone Campus – Allocates 417 dwellings
- Policy PLP11: Port Solent – Allocates 500 dwellings
- Policy PLP13: Fraser Range – Allocates 134 dwellings
- Policy PLP16: Housing Target – Provides for the provision of 13,603 net new dwellings between 2020 and 2040
- Policy PLP25: Employment Target – Provides for the provision of at least 138,429 m2 of employment land between 2020 and 2040
- Policy PLP28: Town Centres – promotes projects that result in greater footfall and extended duration of activity uses in Portsmouth City
- Policy PLP30: Cultural and tourism economy– supports the delivery of cultural and tourism facilities, particularly in the coastal area of the city

Permanent Habitat Loss of Habitats Sites

Portsmouth Harbour SPA / Ramsar and Solent & Dorset Coast SPA

5.67 Other than new flood defences (discussed above), Policy PLP3: Tipner West & Horsea Island East allocates the delivery of 58,000m^2 marine employment floor space, 814 to 1,250 residential dwellings, and a bridge between Tipner West and Horsea Island East for the use of sustainable transport modes only. In association with marine employment, the policy states that '*the deep water access to Tipner Point and the new marine hub quaysides will be maintained'*. To ensure deep water access to the new marine hub quaysides dredging of intertidal habitat within Portsmouth Harbour SPA/Ramsar site will be required, resulting in around 2.1ha permanent inter-tidal habitat loss.

5.68 Policy PLP3 requires any planning application to avoid further loss of habitat or, if that is not viable or feasible, minimise such loss to that required to enable the viable and feasible development of the site in line with the development quanta set out in the policy whilst protecting the integrity of the international, national and local nature designations.

5.69 Accordingly, any further loss of habitat depends on the design of development at the project stage and the evidence advanced as to viability/feasibility. While no further loss of habitat is inevitable under Policy PLP3,

it is likely that the bridge between Tipner West and Horsea Island East will require piers within the SPAs/Ramsar site which would result in around 0.3ha permanent intertidal habitat loss.

5.70 In addition, other aspects of development delivery may also require land-take from the SPAs/Ramsar site. The red line plan for the PLP3 allocation (Figure 4.2) shows two areas of possible subtidal reclamation from the SPAs/Ramsar site (collectively amounting to around 0.5ha) for the marine hub element, reflecting the reclamation considered to be necessary by the project promoter in both of the options currently under consideration. Further, any option that delivers the higher range of housing numbers is likely to involve development on the terrestrial part of Portsmouth Harbour SPA/Ramsar site to the south of Tipner West (up to 3.6ha).

5.71 Thus, while Policy PLP3 inevitably results in 2.1ha of permanent intertidal habitat loss from dredging, this HRA proceeds on the "realistic worst case" basis that it may also enable the permanent loss of 0.3ha of intertidal habitat arising from the potential bridge piers, up to 0.5ha of subtidal habitat from land reclamation for the functioning of the marine hub, and up to 3.6ha of terrestrial habitat to the southern extent of the allocation (to deliver more homes). The permanent habitat loss would effectively mean that a portion of the Portsmouth Harbour SPA / Ramsar would be lost to development. Any direct, permanent loss of SPA / Ramsar land will inevitably have negative impacts on qualifying waterfowl and wader species. Overall, LSEs of the emerging PLP on the Portsmouth Harbour SPA / Ramsar as a result of direct permanent habitat loss cannot be excluded and the site is therefore screened in for Appropriate Assessment.

Screening of Policies – Permanent Habitat Loss

5.72 The Solent & Dorset Coast SPA and Portsmouth Harbour SPA / Ramsar are sensitive to the direct permanent habitat loss. It is determined that an Appropriate Assessment of potential adverse effects of the PLP on this site is required.

5.73 The following policy in the PLP is screened in for Appropriate Assessment in relation to this impact pathway because it proposes land reclamation, which would result in the disappearance of habitat supporting the qualifying SPA seabirds, waterfowl and waders:

- Policy PLP3: Tipner West & Horsea Island East – between 814 and 1,250 new dwellings, a marine hub with a working quayside and up to 58,000 square metres of marine employment floorspace (class E(g) offices, research and development, light industrial, B2 general industrial and B8 storage or distribution), a bridge between Tipner West and Horsea Island East for the use of sustainable transport modes only, and flood defences along the peninsula edges of Tipner West and Horsea Island East in line with robust climate change scenarios.

6. Appropriate Assessment

Recreational Pressure

6.1 The PLP allocates 13,603 net new dwellings between 2020 and 2040, which lie in close proximity to Habitats sites designated for non-breeding and breeding bird species and intertidal habitats (in the case of Solent Maritime SAC) that are sensitive to recreational pressure. Many of the threats and pressures for these different sites will arise from similar recreational activities. Furthermore, the measure that is in place to mitigate recreational pressure effects is of strategic nature and applies to all Habitats sites in the Solent. Therefore, to avoid repetition, the discussion of all relevant sites is combined into one section below.

Portsmouth Harbour SPA / Ramsar, Chichester and Langstone Harbours SPA / Ramsar, Solent & Southampton Water SPA / Ramsar and the Solent Maritime SAC

6.2 Portsmouth City is an island city with some of its urbanised area located on the mainland separated by a creek. It is surrounded by three Habitats sites sensitive to recreational pressure (due to comprising open marine foraging waters, the Solent and Dorset Coast SPA is unlikely to be affected by recreational pressure), namely the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC. Given how intensively the Solent region is urbanised and the close proximity of Portsmouth City to these Habitats sites, it is predicted that the demand for and recreational burden in coastal sites will increase throughout the PLP period. The built-up nature of Portsea Island somewhat restricts recreational access to the SPAs / Ramsars and the Solent Maritime SAC on the island itself. However, access to the Habitats sites is less restricted in the adjoining authorities of Fareham (to the west) and Havant (to the east), both of which are only a short drive from Portsmouth City. Therefore, even if potential negative impacts of the emerging PLP were not to occur on the island itself, additional recreational footfall would very likely occur in other sensitive areas of the Solent further away.

6.3 Natural England had previously objected to a planning application to deliver housing at St James Hospital and the former Langstone Campus (Policy PLP8) due to concerns about recreational pressure on Chichester and Langstone Harbours SPA and Solent Maritime SAC which they did not consider could be alleviated solely by contributions to Bird Aware Solent. The updated Milton Common Mitigation Framework has therefore been adopted (February 2022) to alleviate the recreational impact of development at the St James Hospital and Former Langstone Campus on Chichester and Langstone Harbours SPA and Solent Maritime SAC. This framework sets out a Suitable Alternative Natural Green Space (SANG) type mitigation scheme. Visitor surveys were conducted at Milton Common in 2022. These surveys concluded that, using the standard 8ha per 1,000 people, Milton Common has 0.55ha of residual capacity. In order to compensate for the expected 1,052 visitors from the development, a further 7.866ha is required. The plan to provide this 7.866ha of addition capacity is to utilise management measures to increase the accessible area on site. This will include the clearance of scrub, improvements to the path network and maintaining amenity grassland and meadows. The framework calculates a cost of £9,528.49 per unit for the dwellings at St James and the former Langstone Campus. This should be paid by the site promoter.

6.4 With specific regard to Tipner West & Horsea Island East (Policy PLP3), the project is taking a mitigation hierarchy approach from concept masterplanning to avoid additional recreational pressures as much as possible by managing access to the European sites for new and existing residents, and discouraging and preventing access where the resultant effects would be adverse. The contribution to the wider Solent Bird Aware scheme and extension of ranger support associated with PLP3 will be considerable, and further mitigation measures will be implemented to address any residual effects that cannot be addressed by these high level strategic and masterplan-led approaches. The new residents of Tipner East and Tipner West will also both benefit from the semi-natural recreational opportunities to be provided by Horsea Island Open Space (Policy PLP9) which is being brought forward on the former Paulsgrove Landfill Site under extant Policy PCS3 (Horsea Island) of the Portsmouth Local Plan adopted in January 2012. This area of new Open Space is valuable in contributing to the mitigation of recreational pressure on the Solent Habitats sites because the SRMS stipulates that some developments may require additional mitigation due to their size or proximity to sensitive Habitats sites. The Horsea Island Open Space has emerged from initial visitor surveys for the SDMP and will provide 64ha of open space for Portsmouth City's population. The HRA of

the Portsmouth Core Strategy (July 2011) discussed that the average walking distance from home of residents in Hilsea and Milton when walking or dog-walking is between 1-2km. This suggests that residential housing on the Tipner peninsula is within the anticipated catchment of the proposed Horsea Island Open Space, especially when considering the planned Tipner-Horsea bridge connection. According to the PfSH Green Infrastructure Implementation Framework, one of the key aims of the Horsea Island Open Space is to divert recreational activities from designated Habitats sites to the less sensitive former landfill site.

6.5 In discussions over this Local Plan HRA, Natural England have also identified that Policy PLP13 (Fraser Range) for 134 dwellings should also develop a bespoke solution to recreational pressure in addition to payments into the Bird Aware Solent scheme. Based on discussions with the applicant it is understood this is likely to involve enhancements to Fort Cumberland Open Space. This is reflected in Policy PLP13 which states '*The developer will provide mitigation of any alone impacts on the habitat that is functionally linked to Solent's SPAs / Ramsars (P78 / P142 / P144). This is in addition to the contributions provided through the Solent Recreation Mitigation Strategy'.*

In-combination assessment of recreational pressure

6.6 The Solent is estimated to receive approx. 52 million recreational visits per annum and recreational pressure has thus been a historic issue over the past decade. Consequently, a lot of research on various aspects surrounding recreation has been undertaken in the Solent. The following evidence base assessing different components of recreational pressure has been compiled (note that this HRA will not re-examine all these data, as this is regarded as well-established and is assessed in detail in numerous other reports):

- Desk-based study identifying the strategic issues in the Solent
- Winter visitor fieldwork to establish a recreational baseline
- Field study on recreational disturbance of overwintering waterfowl and waders
- Household survey to assess the Solent's importance as a recreation resource in the wider population
- Detailed modelling of future housing scenarios and their impacts on disturbance
- Emerging avoidance and mitigation strategy for the Solent

6.7 Some of these have already been discussed in Chapter 4. Other sources are on the BirdAware Solent website (Our strategy - Bird Aware Solent). The cumulative evidence available for the Solent region highlighted that recreational use was unsustainable and impacts on the qualifying SPA / Ramsar bird species were evident, putting the Conservation Objectives of Solent's Habitats sites at risk. An initial framework for an avoidance and mitigation strategy conceptualised by Footprint Ecology was therefore developed further, culminating in the Bird Aware Solent Recreation Mitigation Strategy (2017). Bird Aware Solent stipulates that all net new residential development within a 5.6km catchment zone of the coast will result in Likely Significant Effects on coastal SPAs / Ramsars. The catchment boundary was based on the distance where the majority (i.e. 75%) of coastal visitors live. It was therefore decided that mitigation measures and monitoring delivered as part of Bird Aware Solent are to be funded by developer contributions (varied depending on the number of bedrooms delivered) per net new residential dwelling delivered within the 5.6km catchment zone.

6.8 The Bird Aware Solent Strategy proposes the following mitigation and monitoring measures to reduce the impact of recreational pressure:

- A team of 5-7 coastal rangers working to reduce disturbance
- Initiatives to encourage responsible dog walking in less sensitive parts of the coast
- Preparation of Codes of Conduct for high-impact recreational activities
- Tailored habitat management projects for specific sites
- A monitoring schemes to track the effectiveness of mitigation measures
- Providing alternative recreational greenspace (e.g. the Alver Valley Pilot Project)

Updates to the Evidence Base

6.9 Further surveys extending the evidence base and assessing the long-term effectiveness of the Bird Aware project have since been undertaken. Footprint Ecology undertook a further visitor survey analysing visitor data from winter 2017 / 2018. This survey was commissioned as part of the baseline monitoring for the Bird Aware Project and in line with the monitoring strategy designed for the project. Continued monitoring work is required to ensure that mitigation is successfully delivered, is effective and developer charges have been sufficient / appropriate. Visitor surveys are key to this, enabling conclusions to be drawn on the type and frequency of recreational activities undertaken and, most importantly, confirming whether core recreational catchments have changed over time.

6.10 A follow up survey (Solent SANGs Visitor Survey[86]) was undertaken in the winter of 2021/22 by Footprint Ecology at five inland Suitable Alternative Natural Greenspace (SANG) sites along the Solent (namely: Firestone Copse (Isle of Wight), Shoreburs Greenway (Southampton), River Hamble Country Park (Southampton), Alver Valley Country Park (Gosport) and Minerva Heights (Chichester)). Post code data indicates that the sites are generally used by people in a relatively local and small catchment with little overlap between them. This suggests that there is potential for further SANGs to "fill in the gaps". Usage figures appear to be increasing significantly from previous surveys in 2015/16 although an element of caution needs to be applied to the data.

6.11 The Portsmouth Harbour SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar are most likely to be affected by the PLP, given they directly adjoin the authority. Footprint Ecology's survey covered two access locations in the Portsmouth Harbour SPA / Ramsar (Salterns Quay, Hilsea) and three survey points in the Chichester and Langstone Harbours SPA / Ramsar (Langstone, West Itchenor, Hayling Billy Trail). It is considered that these are the locations most likely to be relevant for new Portsmouth residents. The visitor survey results for these locations are summarised in the following.

6.12 In terms of visitor numbers, survey points in the Portsmouth Harbour SPA / Ramsar were less busy than survey locations in the Chichester and Langstone Harbours SPA / Ramsar. For example, Hayling Billy Trail (on Hayling Billy Island, a total of 275 people counted over a 16-hour period) was twice as busy as Hilsea and three times as busy as Salterns Quay. Notwithstanding this, although experiencing a lower overall recreational footfall, a higher number of dogs was recorded in the Portsmouth Harbour SPA / Ramsar. This is noteworthy because dog walkers are likely to represent the most significant disturbance factor to the SPA / Ramsar bird interest.

6.13 A total of 334 interviews were conducted with visitors, giving important insight in their recreational habits and distance travelled from home. Notably, a total of 316 visitors (95%) were on a day trip / short visit from home (100% in the Portsmouth Harbour SPA / Ramsar), indicating that the recreational burden in the Solent is mainly driven by local residents rather than holiday makers. 66% of interviewees were dog walking, followed by 21% that were walking and 4% that were on an outing with their family. Very few interviewees were undertaking fishing, beach activities or 'other' activities (e.g. beachcombing). As evident from visitor surveys in many other Habitats protected sites, dog walking is generally carried out for relatively short durations (54% of dog walkers stay on site between 30 minutes and 1 hour), but on a regular basis (48% of dog walkers visit daily). Other – arguably more 'niche' activities – are undertaken infrequently (i.e. a few times per month) but often involve visits of three hours or more. Therefore, a clear discrepancy exists in the spatio-temporal footprint of recreational activities, which is important from an HRA perspective. Recreational pressure in the Solent continues to appear to be a year-round issue, with the majority of visitors indicating they visit equally all year. Proximity to home clearly is an important factor, because most visitors (particularly those visiting the Portsmouth Harbour SPA / Ramsar) travel to the site on foot and cite 'close to home' as one of the most important reasons for site choice.

6.14 Overall, 321 interviewees (96%) gave full, valid postcodes that were georeferenced in GIS. The distance from the home postcode to the interview location ranged from 76m to 300km, with a mean of 8.4km and a median of 1.6km. Pooled for all recreational activities and across all survey locations, the 75th percentile of visitors travelled 5km to the relevant survey location. However, when the postcode data was split by survey location, differences in the catchment zones for the Portsmouth Harbour SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar became apparent. Survey locations in the Portsmouth Harbour SPA / Ramsar had a particularly local visitor pool (75th percentiles of 1.4km and 0.5km respectively). The Chichester and Langstone Harbours SPA / Ramsar had comparatively larger catchment zones of up to 17.1km at West Itchenor.

[86] Saunders, P. et al. - 2022 - Solent SANGs Visitor Survey.pdf (footprint-ecology.co.uk)

6.15 An assessment of the type, capacity and situation of parking locations was also undertaken. This is important because the availability of parking is likely to have a large effect on the distribution of recreational pressure across the Solent region. Two of the routes surveyed, routes 4 (Portchester & Portsmouth) and 5 (Hayling Island), are especially relevant to residents from Portsmouth City. Parking locations providing access to the Portsmouth SPA / Ramsar (route 4) had the highest mean % of 'fullness' of all car parks surveyed in the study. One of the key take-home messages from the study is that Habitats sites in the Solent (particularly in the southern part of Portsmouth City around Southsea) are served by numerous large and well-maintained car parks. This illustrates the popularity of the Solent region for recreation. However, it is to be noted that many of the tarmacked formal car parks in Portsmouth City lie in southern areas that do not provide easy access to the Portsmouth Harbour SPA / Ramsar.

6.16 Most recently, in 2023 an initial investigation was undertaken into whether breeding birds associated with the Solent Habitats sites (namely Mediterranean gull, sandwich tern, common tern, little tern and roseate tern) were also sufficiently vulnerable to recreational disturbance that specific mitigation measures may also be required to address summer visitors. This is still being considered by the Partnership for South Hampshire but it is assumed for the purposes of this HRA that if such measures are needed they could be addressed through an expansion of Bird Aware Solent into the summer and through the incorporation of measures specific to these nesting species informed by an uplift to the tariff currently charged.

6.17 The impact pathway recreational pressure was previously also assessed in the HRA of the adopted Portsmouth Local Plan, in-combination with the plans of surrounding authorities. It determined that there would not be adverse effects on the integrity of the Portsmouth Harbour SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar, given that measures were introduced to mitigate recreational pressure in the Solent.

Existing Mitigation in the Portsmouth Local Plan

6.18 Chapter 5 of the emerging PLP acknowledges Portsmouth City's unique natural environment and biodiversity. The text in this chapter refers to the Portsmouth and Langstone Harbours and the Solent's coastal waters as being protected by several overlapping national and international nature designations. Policy PLP43 (Recreational Disturbance on International Nature Designations) explicitly requires development proposals to be in line with the existing strategic mitigation framework in place to mitigate recreational pressure in the Solent. This would include the requirement for site promoters and developers to contribute towards access management and monitoring as detailed in the Bird Aware project.

6.19 In addition, policy PLP39: Biodiversity specifies that for 'Development proposals with the potential to impact alone or in combination on one or more international sites(s) will be subject to a HRA... Development proposals that will result in any adverse effect on the integrity of any international site will be refused unless it can be demonstrated that:

- there are no alternatives to the proposal;
- there are imperative reasons of overriding public interest why the proposal should nonetheless proceed;
- and adequate compensatory provision is secured.'

Conclusions and Recommendations

6.20 AECOM considers the high-level protection already included in Policy PLP9 of the emerging PLP to be sufficient to mitigate further recreational pressure effects in the Solent's Habitats sites. Even if the Bird Aware Solent project is expanded to encompass tern and gull nesting sites during the summer, this could still be facilitated through the same mitigation framework and policy. The mitigation strategy has been devised to buffer the Solent region from recreational pressure effects arising from future housing growth in the region. Therefore, the growth allocated in the PLP would have been factored into the decision-making process of the suite of mitigation measures included in the Bird Aware Solent Recreation Mitigation Strategy. Considering that the Local Plan formalises the requirements of the SRMS, it is concluded that the PLP will not result in adverse effects on the integrity of Solent's Habitats sites regarding recreational pressure. No further policy / supporting text is recommended for inclusion in the Local Plan.

Loss of Functionally Linked Habitat

6.21 The SPAs / Ramsars surrounding the Portsmouth City island are all designated for qualifying waterfowl and wader species that are mobile. This means that any of the qualifying species may routinely roost or forage beyond the designated site boundary. Some of the terrestrial wader and brent goose sites may be visited frequently and / or support significant abundances of species. Such sites are considered to support the functionality and integrity of Habitats sites and are therefore extended the same level of protection. The extent to which different species use functionally linked habitats differs considerably. Of the species overwintering in the Solent, the dark-bellied brent goose is the species most tightly linked with off-site habitats such as grassland. The dark-bellied brent goose is a qualifying species of all SPAs / Ramsars in the Solent, including the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Solent & Southampton Water SPA / Ramsar. To avoid repetition, the following Appropriate Assessment therefore combines the discussion for all these sites.

Portsmouth Harbour SPA / Ramsar, Chichester and Langstone Harbours SPA / Ramsar and Solent & Southampton Water SPA / Ramsar

6.22 The dark-bellied brent goose Branta bernicla bernicla is a species of high international conservation importance and is regarded as vulnerable because its small world population has a highly variable breeding success. Over winter, the UK supports approximately 98,100 of these geese, which concentrate primarily in southern and eastern England. The Chichester and Langstone Harbours SPA / Ramsar in particular supports about 13% of the national and 6.5% of the international population.

6.23 Traditionally, brent geese feed on coastal mudflats, where they primarily forage on eelgrass, Zostera spp., marine algae (e.g. Enteromorpha spp.) and sea lettuce Ulva lactuca. However, since the 1950's, have extended their foraging areas to terrestrial habitats, including farmland (comprising cereals and pasture) and amenity grassland. These terrestrial foraging sites are of critical importance to the geese as their nutritional requirements cannot be met by natural resources alone. Partly this has been attributed to the loss of natural inland habitat to urban and agricultural development. The use of terrestrial foraging habitats is greatest during high tide and in years with high numbers of juveniles, seeking to avoid competition with older individual in the mudflats.

6.24 The Solent coastline also provides an important wintering area for wader species, with an average of 90,000 waders annually. Most waders generally feed on invertebrates (e.g. worms and molluscs) in the intertidal zone. During high tide, waders occupy roosting sites, which may include saltmarsh areas, shingle banks, coastal grasslands and man-made structures, such as piers, wharfs and jetties. Wader roosting sites tend to be relatively close to the coast, up to approx. 100m from the mean high-water line, and generally lie away from sources of disturbance. Overall, the dependence of waders on functionally linked habitat is much lower than that of brent goose. However, the development of relatively undisturbed coastal grassland could still result in the loss of crucial supporting habitat.

6.25 Pressure from urban development, recreational use, sea level rise, coastal squeeze from flood defences and coastal re-alignment is continuing to put supporting habitats of Solent wildlife at risk. The Solent Waders and Brent Goose Strategy (SWBGS) was established in 2010 and updated in 2020, identifying the key off-site foraging and roosting resources of Solent's SPA / Ramsar birds. The strategy intends to provide the key resource for assessing in-combination effects of development plans on the network of supporting sites across the Solent. As the strategy stipulates, its evidence 'contributes to the baseline data for associated Habitats Regulations Assessments'. A total of 1,036 sites identified in the Solent.

6.26 As highlighted earlier in this HRA, Portsmouth City is an already developed conurbation with limited space and it is therefore unlikely that many large greenfield sites will be allocated for development. Many of the remaining greenfield sites (e.g. Milton Common, Great Salterns Recreation Ground) are designated open spaces and will be protected from development. Development of greenfield sites is most likely to pose a risk at Tipner, which comprises some tracts of more open grassland on the former ranges. Several strategic sites are proposed, and these are assessed below. Depending on the geographic location of the strategic sites, further protective policy wording may be required in the PLP.

Tipner and Horsea Island East (Policy PLP3), Tipner East (Policy PLP4) and Horsea Island Open Space (PLP9)

6.27 Tipner West and Horsea Island East is intended to deliver between 814 and 1,250 dwellings, and 58,000m2 of employment uses. Policy PLP3 also allocates land for a bridge between Tipner West and Horsea Island East, flood defences and community meeting spaces. Tipner East (PLP4) will deliver 1,056 residential dwellings, a new transport hub and community/commercial uses. Horsea Island Open Space (PLP9) will deliver open space and associated infrastructure and a segregated busway / cycle and pedestrian link between Tipner West and Port Solent.

6.28 All supporting habitats for SPA / Ramsar waterfowl / waders have been mapped as part of the SWBGS and are available online. A review of the SWBGS mapping indicates that several functionally linked habitats lie in the Tipner area.

6.29 A Low Use Area (LUA) and one Secondary Support Area (SSA) are located in Tipner East (P136 and P139). Furthermore, two additional LUAs lie within 100m of the Tipner East allocation boundary (P38, P39). The development on this site has already been consented, subject to legal agreements, including the mitigation for loss of functionally-linked habitat. Tipner West and Horsea Island East encompasses two Primary Support Areas (PSA) at Tipner Range (P60) and parcel P76. Furthermore, Core Area P75 lies within 100m of Tipner West and Horsea Island East allocation. All functionally linked habitat parcels lie in close proximity to the Portsmouth SPA / Ramsar, indicating they are likely to be preferentially used by SPA / Ramsar waterfowl in order to minimise energy expenditure. Delivery of Policy PLP3 would also likely result in the loss of the Tipner Range (Primary Support Area P60) and may involve some loss of Primary Support Area P76, which are both functionally linked to SPAs / Ramsars in the Solent.

6.30 Tipner West & Horsea Island East (PLP3) is the only allocation where mitigation for loss of functionally linked habitat will be required but where a specific mitigation land parcel has not yet been selected. Overall, the available habitat mapping clearly indicates that development in the wider Tipner and Horsea Island area has the potential to disrupt the local network of supporting habitats. In line with the requirements of the SWBGS any loss of identified supporting habitat would need to be mitigated through the provision of replacement supporting habitat of equal or greater quality. This includes any loss of parcel P60 as well as the other areas of functionally linked land identified above at Tipner West. Policy PLP42 states that '*Proposals that impact the functionally linked sites* [Used by Solent Waders and Brent Geese] *will need to provide mitigation as set out in the Solent Waders and Brent Goose Strategy.*' The supporting text for policy PLP3 (PLP3.6.b) states that the applicant must 'demonstrate that any loss of functionally linked habitat, including that identified as a primary or secondary support area in the Solent Waders and Brent Goose Strategy, will be mitigated through the provision of replacement functionally linked supporting habitat of equal or greater quality and quantity, which fulfils the same special contribution and particular function of the areas lost or damaged for the same species of birds' By the nature of the policy wording, the development proposal could therefore not result in the loss of functionally linked habitat, either because the development would be planned out in such a way as to preserve these areas, or because they would deliver adequate offsetting for any loss in line with the Solent Wader and Brent Goose Strategy.

6.31 The supporting text for Policy PLP3 confirms the requirements to deliver adequate off-setting in line with the Solent Wader and Brent Goose Strategy. It states:

"*The project level HRA should also address the impact of development on functionally linked habitats. It is likely that there will be a loss of habitat that is functionally linked to Solent's SPAs / Ramsars namely Primary Support Areas P60 and P76, as identified in the Solent Waders and Brent Goose Strategy. Furthermore, Core Area P75 lies within 100 metres of the allocation boundary. Core Areas and Primary Support Areas are functionally linked land that contribute to the integrity of SPA/Ramsar sites. All functionally linked habitat parcels lie in close proximity to the Portsmouth SPA/Ramsar, indicating that they are likely to be used by SPA/Ramsar waterfowl in order to minimise energy expenditure. Non-breeding bird surveys between October and March (typically two survey seasons) will be required to inform the detailed design of the offsetting mitigation habitat that will be provided to ensure no adverse effect on integrity.*

All loss of this functionally linked land should be mitigated in line with Policy PLP42: Solent Waders and Brent Geese Sites and the Mitigation and Off-setting Requirements set out in the Solent Waders and Brent Goose Strategy and to the satisfaction of the local planning authority and Natural England. The planning application will need to be supported by a bespoke Habitats Regulations Assessment to ensure that the development does not result in adverse effects on site integrity."

6.32 The requirement for detailed survey work exists to inform the detailed design of the offsetting mitigation habitat that will be provided to ensure no adverse effect on integrity. A specific mitigation parcel for delivering new functionally linked habitat cannot be identified prior to that work. However, in developing mitigation and compensation solutions for the effects of Policy PLP3 on Portsmouth Harbour SPA/Ramsar site the site promoters have identified parcels totalling 62ha for terrestrial habitat creation, including as functionally-linked land, to offset the combined loss of area of P60 and P76 (c. 7ha).

6.33 At this stage, the parcels identified by the promoter as potential mitigation/compensation are commercially confidential. AECOM and members of the Council's LPA team have, however, been permitted to review those parcels for the purposes of this HRA and are satisfied that there is sufficient suitable and available land to mitigate any loss of functionally linked habitat. Which parcel or combination of parcels is used will depend on the nature and extent of any functionally linked habitat loss arising as a result of a planning application. Such an application will need to be accompanied by project-level HRA which demonstrates the provision of adequate mitigation.

6.34 The Council as LPA is working with the promoter team to explore what information about the suitable and available sites can be made publicly available and how the Secretary of State, PINS and relevant statutory consultees can receive information about those sites, potentially on a confidential basis.

6.35 Horsea Island Open Space (PLP9) encompasses three Core Areas (P48A, P48B, and P75) and one Primary Support Area (P48C) which could be affected by development or changes in use. This is recognised in Policy PLP 9 which states that '*The Western portion of the site and the small southern portion of the site are Core Areas P48A/P48B and P75 protected for Brent Goose and Waders, the Eastern portion of the site as shown on figure 4.9 is also a Primary Support area P48C for Brent Goose and Waders. Proposals will need to comply with Policy PLP 42 of this plan and take account of the guidance set out in and the Solent Waders and Brent Goose Strategy Guidance on Mitigation and Off-setting Requirements'*.

6.36 Considering that the Local Plan includes necessary requirements with regard to Solent Waders and Brent Goose Strategy, and there is sufficient suitable and available land capable of delivering mitigation for these allocations (PLP3 being the only allocation for which specific a mitigation site has not yet been confirmed), it is concluded that the PLP will not result in adverse effects on the integrity of Solent's Habitats sites regarding loss of functionally linked land for policies PLP3, PLP4 and PLP10.

Lakeside North Harbour (PLP5)

6.37 The Lakeside North Harbour site is allocated for 50,000m2 of office-led floorspace in an existing developed context. The site is surrounded by major roads, including the M27, the M275 and the A27. Notwithstanding this, the allocation boundary is only approx. 150m from the Portsmouth Harbour SPA / Ramsar, providing short flightlines to qualifying birds. The SWBGS mapping data show that a Candidate site (P138) comprising short amenity grassland lies within the south-eastern part of the allocation boundary. Therefore, the provision of employment floorspace in this part of the Strategic Site could lead to the loss of functionally linked habitat. However, Policy PLP42 states that 'Proposals that impact the functionally linked sites [Used by Solent Waders and Brent Geese] will need to provide mitigation as set out in the Solent Waders and Brent Goose Strategy.' By the nature of the policy wording, the development proposal could therefore not result in the loss of functionally linked habitat, either because the development would be planned out in such a way as to preserve area P138, or because they would deliver adequate offsetting for its loss in line with the Solent Wader and Brent Goose Strategy. This is identified in the supporting text for Policy PLP5 which states 'Surveys to be carried out to determine the classification of Candidate Site P138 of the Solent Waders and Brent Goose Strategy. Appropriate avoidance and mitigation measures to be provided to the satisfaction of the local planning authority and Natural England'.

6.38 Considering that the Local Plan includes necessary requirements with regard to Solent Waders and Brent Goose Strategy, it is concluded that the PLP will not result in adverse effects on the integrity of Solent's Habitats sites regarding recreational pressure for policy PLP5.

Portsmouth City Centre (Policy PLP6)

6.39 Portsmouth City Centre allocation provides 4,158 new dwellings, 20,000m^2 (Gross) of employment space (1,546m^2 net) and a 2.9ha park. This area is associated with the Portsmouth City's conurbation. The area does contain parks, including Victoria Park; however, due to their highly disturbed nature and the fact of their urban location, it is concluded that there is no risk for the loss of functionally linked habitat.

Fratton Park and the Pompey Centre (PLP7)

6.40 The area around Fratton Park and the Pompey Centre is allocated for approx. 710 dwellings, expansion of the north stand of the Fratton Park Football Stadium, supporting hotel, conference facilities and small-scale business / commercial uses. However, this strategic allocation lies in the middle of Portsmouth City's conurbation and is an existing brownfield site. Therefore, the site does not comprise suitable foraging / roosting habitat for SPA / Ramsar birds and would involve relatively long flightlines to the Habitats site. Loss of functionally linked habitat is not a risk for this strategic site.

St. James' and Langstone Campus (PLP8)

6.41 The St. James' and Langstone Campus Strategic Site is allocated as a mixed-use development comprising medical, education and community facilities, open space, sheltered accommodation and 417 residential dwellings. Importantly, the allocation lies directly adjacent to the Chichester and Langstone Harbours SPA / Ramsar. As already identified in the supporting text to Policy PLP8 (St. James' and Langstone Campus), the Langstone Campus part of the allocation comprises open space in the form of playing fields and all-weather pitches. The SWBGS identifies these playing fields as a SSA (parcel P25) and a Core Area (CA, P23b). Furthermore, another Core Area (P23A) lies within 100m of the site. The Core Areas are of highest importance to overwintering SPA / Ramsar birds. The supporting text for Policy PLP8 specifically states that *'Development must retain, where possible, playing pitches and fields'*, while Policy PLP42 states that '*Proposals that impact the functionally linked sites* [Used by Solent Waders and Brent Geese] *will need to provide mitigation as set out in the Solent Waders and Brent Goose Strategy*.' By the nature of the policy wording, the development proposal could therefore not result in the loss of functionally linked habitat (although see other impact pathways in relation to the site – disturbance in functionally linked habitat).

6.42 The playing fields have a baseline level of human activity to which birds using the playing fields can be assumed to be adapted. However, a significant increase in the recreational usage of these playing fields as a result of the development could result in effective loss of functionally-linked habitat if it occurs at times or in locations that are incompatible with use by SPA birds. Therefore, any planning application for the redevelopment will need to consider this issue in a project-level HRA.

Land West of Portsdown Technology Park (PLP 10)

6.43 The Portsdown Hill area is one of the largest open spaces in Portsmouth City, stretching along the northern edge of its boundary. Policy PLP10 (Land West of Portsdown Technology Park) is primarily tailored to protect the landscape, ecological and heritage value of the area. Land is allocated for the provision of 12,500m^2 of employment floorspace, However this development is restricted to existing brownfield sites in the area. Review of SWBGS data indicates that there are no identified supporting habitats within the boundary of the Site, the closest one being a Candidate Site (W03G) approx.. 408m to the north of Portsdown Hill. While comprising semi-natural grassland, the habitats on Portsdown Hill are unlikely to be suitable for SPA / Ramsar birds due to the relatively steep gradients involved. In conclusion, it is unlikely that development proposals on Portsdown Hill will result in the loss of functionally habitat.

Port Solent (PLP 11)

6.44 Policy PLP11 (Port Solent) allocates land for the development of 500 residential dwellings and marine related uses. Review of SWBGS data indicates that there are no identified supporting habitats within the boundary of the Site. Two Core Areas (P48A, P48B) and one Primary Support Area (P48C) are located within 100m of the allocation. In conclusion, it is considered unlikely that development proposals for Port Solent will result in the loss of functionally habitat.

St John's College (PLP 12)

6.45 Policy PLP12 (St John's College) allocates land for the development of 212 residential dwellings. However, this strategic allocation lies in the middle of Portsmouth City's conurbation and is an existing brownfield site. Therefore, the site does not comprise suitable foraging / roosting habitat for SPA / Ramsar birds and would involve relatively long flightlines to the Habitats site. Loss of functionally linked habitat is not a risk for this strategic site.

Fraser Range (PLP 13)

6.46 Policy PLP13 (Fraser Range) allocates land for the development of 134 residential dwellings, new sea wall flood defences, parking, an access road and landscaping. Review of SWBGS data indicates that one Primary Support Area (P142) and one Low Use Area (P144) at least partially overlap with the allocation. Any loss of identified supporting habitat would need to be mitigated through the provision of replacement

supporting habitat of equal or greater quality. Overall, the available habitat mapping indicates that development of the Fraser Range site has the potential to disrupt the local network of supporting habitats.

6.47 However, Policy PLP42 states that 'Proposals that impact the functionally linked sites [Used by Solent Waders and Brent Geese] will need to provide mitigation as set out in the Solent Waders and Brent Goose Strategy.' By the nature of the policy wording, the development proposal could therefore not result in the loss of functionally linked habitat, either because the development would be planned out in such a way as to preserve area P142, or because they would deliver adequate offsetting for its partial loss in line with the Solent Wader and Brent Goose Strategy.

6.48 Supporting text for Policy PLP13 confirms the requirement for the developer to provide evidence that the allocated site will not result in the loss of habitat that is functionally linked to Solent's SPAs / Ramsars (P142 / P144). It is understood that an offsetting mitigation package is currently being agreed with Natural England and Portsmouth Council for Fraser Range as part of the current application and that Fort Cumberland Open Space will be used for mitigation. The application is still under discussion but based on information available the authors of the HRA are satisfied that a solution to mitigate any loss of functionally linked habitat will be identified.

The News Centre, Hilsea (PLP 14)

6.49 Policy PLP14 (The News Centre, Hilsea) allocates land for the development of an electric bus depot and 100 residential dwellings. The policy emphasises the heritage value of the area. Review of SWBGS data indicates that there are no identified supporting habitats within the boundary of the Strategic Site, the closest one being a PSA (P43) approx.. 200m to the west of the Site. In conclusion, it is unlikely that development proposals for The News Centre, Hilsea will result in the loss of functionally habitat.

Somers Orchard (PLP 15)

6.50 Policy PLP15 (Somers Orchard) allocates land for the development of 565 residential dwellings (292 net new dwellings), approximately 500sqm commercial space and approximately 440sqm community space. However, this strategic allocation lies in the middle of Portsmouth City's conurbation and is an existing brownfield site. Therefore, the site does not comprise suitable foraging / roosting habitat for SPA / Ramsar birds and would involve relatively long flightlines to the Habitats site. Loss of functionally linked habitat is not a risk for this strategic site.

Existing Mitigation in the Portsmouth Local Plan

6.51 General protection to functionally linked habitats is given in Policy PLP39 (Biodiversity). This policy states that 'Development proposals will be permitted where they conserve and enhance biodiversity, giving particular regard to ecological networks… b) Contribute to the creation of larger improved wildlife habitats through the creation of linkages between sites to create and enhance local and regional ecological networks'. By definition, functionally linked habitat parcels are part of the city's ecological network and are thus included by this wording.

6.52 Policy PLP42 of the Local Plan states that 'Proposals that impact the functionally linked sites [Used by Solent Waders and Brent Geese] will need to provide mitigation as set out in the Solent Waders and Brent Goose Strategy.' By the nature of the policy wording, the development proposals could therefore not result in the loss of functionally linked habitat, either because the development would be planned out in such a way as to preserve areas of functionally-linked habitat, or because they would deliver adequate offsetting for its loss in line with the Solent Wader and Brent Goose Strategy.

6.53 This requirement is reflected in relevant allocation policies:

- Policy PLP3 (Tipner West and Horsea Island East) states that the developer must '*demonstrate that any loss of functionally linked habitat, including that identified as a primary or secondary support area in the Solent Waders and Brent Goose Strategy , will be mitigated through the provision of replacement functionally linked supporting habitat of equal or greater quality and quantity, which fulfils the same special contribution and particular function of the areas lost or damaged for the same species of birds'.*

- PLP4 (Tipner East) states that 'Any loss of supporting habitat identified in the Solent Waders and Brent Goose Strategy will be mitigated through the provision of replacement supporting habitat of equal or greater quality and quantity that fulfils the same special contribution and particular function of the areas lost or damaged for the same species of birds'.

- Policy PLP5 (Lakeside North Harbour) states 'Surveys to be carried out to determine the classification of Candidate Site P138 of the Solent Waders and Brent Goose Strategy. Appropriate avoidance and mitigation measures to be provided to the satisfaction of the local planning authority and Natural England'.

- Policy PLP8 (St James and Langstone Campus) specifically states that 'Development must retain, where possible, playing pitches and fields', and 'The developer should provide evidence that the allocated site will not result in the loss of habitat that is functionally linked (Core Area P23B, Secondary Support Area P25) to Solent's SPAs / Ramsars' while Policy PLP42 states that 'Proposals that impact the functionally linked sites [Used by Solent Waders and Brent Geese] will need to provide mitigation as set out in the Solent Waders and Brent Goose Strategy'.

- Policy PLP 9 (Horsea Island Open Space) states that 'The Western portion of the site and the small southern portion of the site are Core Areas P48A/P48B and P75 protected for Brent Goose and Waders, the Eastern portion of the site as shown on figure 4.9 is also a Primary Support area P48C for Brent Goose and Waders. Proposals will need to comply with and Policy PLP 42 of this plan and take account of the guidance set out in and the Solent Waders and Brent Goose Strategy Guidance on Mitigation and Off-setting Requirements'.

- Policy PLP13 (Fraser Range) states 'The developer will provide mitigation of any alone impacts on the habitat that is functionally linked to Solent's SPAs / Ramsars (P78 / P142 / P144). This is in addition to the contributions provided through the Solent Recreation Mitigation Strategy' and 'To meet the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended), the developer should provide evidence that the allocated site will not result in the loss of habitat that is functionally linked to Solent's SPAs / Ramsars (P78/P142 / P144).'

6.54 The 2020 update to the SWBGS identifies the mitigation and off-setting requirements for functionally linked habitat parcels in the Solent. Core Areas (CAs) in particular are considered essential to the ecological network and integrity of SPAs / Ramsars. The report specifies that any development proposals resulting in long-term impacts on or the loss of CAs, must be offset by provision of a suitable replacement site of equal or greater size and quality near to the affected CA. Primary Support Areas (PSAs) make an important contribution to maintaining the integrity of the ecological network and also require a like-for-like replacement, 'operational' at the time that the original PSA is lost / impacted. All areas identified as functionally-linked habitat should be mitigated where necessary. The SWBGS Steering Group mitigation document also details other parameters that replacement sites should satisfy (e.g. type of habitat, not affected by recreational pressure).

6.55 As part of survey work for individual applications, non-breeding bird surveys between October and March (typically two survey seasons) will be required to inform the development of detailed mitigation for loss of functionally-linked habitat and the planning application will need to be supported by a bespoke Habitats Regulations Assessment to ensure that the development does not result in adverse effects on site integrity.

6.56 Given the policy wording included in the Local Plan it is considered that an appropriate policy framework exists to address loss of functionally-linked land.

Recreational Pressure in Functionally Linked Habitat

Portsmouth Harbour SPA / Ramsar and Chichester and Langstone Harbours SPA / Ramsar

6.57 Recreational activities may not only result in disturbance in the SPAs / Ramsars themselves, but also in habitat that is functionally linked to these sites. As established in the previous section, functionally linked habitats are integral in maintaining the coherence of Solent's ecological networks. Human activities that alter / reduce the birds' use of supporting habitats would also be considered to result in adverse effects on Habitats sites. Not all parcels of supporting habitat are accessible or attractive as recreation destinations. Therefore, supporting habitats require individual appraisal (ideally supported by visitor monitoring data) and, if found to be significantly affected by recreation, also need to be protected through mitigation measures.

6.58 In this section, functionally linked habitats are assessed in their order of importance, namely Core Areas (CAs), Primary Support Areas (PSAs) and Secondary Support Areas (SSAs), with a particular focus on

public access. Table 4 provides an analysis of each functionally linked habitat with shadings of green, yellow and orange based on the conclusions of the assessment. Parcels P23R, P48A, P48B (all CAs) and P48C (PSA) are shaded green because there is little to no potential for the Local Plan to result in recreational disturbance in these sites. These parcels, while unfenced, are distant from areas of housing and / or separated from housing by major roads.

6.59 SWBGS parcels P08A, P08C, P11, P12, P23B, P29, P32A, P52, P54 (all CAs), P19D, P40A, P43, P140 (all PSAs), P19B, P25 and P32B (all SSAs) are shaded yellow because a realistic potential for public access is present, although the potential for any significant increase in recreational pressure due to the Local Plan is limited. Most of these parcels comprise sports pitches, playing fields or parts of golf courses. Any such sites are likely to have a carrying capacity of usage. This implies that regardless of the population growth due to the Local Plan, there will be a maximum number of recreationists using these sites at any one time (and indeed some of these sites may already have reached a 'ceiling' of recreational use). Furthermore, for any sports pitches, periods of usage will be interspersed by days when no recreational activities would be undertaken. Any disturbance will exhibit temporal variation, allowing SPA / Ramsar birds to use the pitches at times when no disturbance is present.

6.60 Parcels P20, P23A, P31, P35 (all CAs), P40, P78, P142, P148 (all PSAs) and P127 (SSA) are shaded orange, because there is a realistic potential that population growth could result in increased recreational activity. This is because these parks, commons, amenity grassland and sandflats offer unrestricted public access in proximity to extensive existing areas of housing. It is to be noted that while a potential for disturbance impacts to SPA / Ramsar birds exists, many of the above parcels (e.g. P35, Southsea Common) continue to support good abundances of brent goose year-on-year despite existing high levels of recreational use. Therefore, an increase in recreational usage does not necessarily imply reduced suitability for SPA / Ramsar birds.

6.61 Moreover, of the parcels highlighted orange, only two are in close proximity to an allocation in the Portsmouth Local Plan. P23A is close to allocation PLP8 St James and Langstone Campus. This Local Plan HRA has already identified that the allocation has extensive playing fields within it (Parcel P25) and that a significant increase in the recreational usage of these playing fields as a result of the development could result in effective loss of functionally-linked habitat if it occurs at times or in locations that are incompatible with use by SPA birds. Therefore, any planning application for the redevelopment will need to consider this issue in a project-level HRA. The same is true for parcel P23A. Recreational pressure stemming from this allocation is covered by the adopted Milton Common Mitigation Framework (February 2022). Parcel P40 is close to PLP4 Tipner East, but this development already has planning consent.

6.62 At a strategic level across Portsmouth, **Policy PLP9 (Horsea Island Open Space)** allocates 64ha of strategic public open space in the west of Portsmouth City. The new open space provision will consider the needs of its intended users and provide multi-functional spaces. It is noted that this will provide additional recreational opportunity and reduce the future recreational burden on the supporting habitat parcels discussed above.

6.63 Overall, it is considered that the emerging PLP will not result in adverse effects on supporting habitats through increased recreational pressure. This is due to the existing recreational usage of these land parcels not impacting on their ability to support SPA / Ramsar bird species and the provision of 64ha of new strategic open space on Horsea Island.

Table 4: Discussion of functionally linked habitat SWBGS parcels in relation to recreational pressure. Note that the three shading bands are discussed further in the main body of text.

Type of supporting habitat	Site Code	Site Description	Nature of Recreational Pressure
Core Area	P08A	Farlington Playing Field and Cricket Grounds	Public access, with periods of high recreational usage likely to be interrupted by days without access
	PO8C	St John's College Playing Fields	Public access, with periods of high recreational usage likely

Type of supporting habitat	Site Code	Site Description	Nature of Recreational Pressure
			to be interrupted by days without access
	P11	Baffins Milton Rover FC	Public access, with periods of high recreational usage likely to be interrupted by days without access
	P12	Great Salterns Golf Course	Daily public access likely, with golfing usage likely to be lower in winter compared to summer.
	P20	Tangier Park comprising amenity grassland	Park with daily recreational usage in close proximity to local housing.
	P23A	Swan Lake and adjoining semi-improved grassland	This site forms part of Milton Common, which is likely to be subject to daily recreational usage from nearby housing
	P23B	Sports pitches forming part of the University of Portsmouth Langstone Sports Site	Public access, with periods of high recreational usage likely to be interrupted by days without access
	P23R	Some semi-improved grassland (being partially developed) to the south of Eastern Road	While not fenced, this site is separated from the nearest housing by Eastern Road. No safe crossing for pedestrians available. Little potential for recreational disturbance.
	P29	Cockleshell Community Sports Club	Public access, with periods of high recreational usage likely to be interrupted by days without access
	P31	Amenity grassland to the south of Clocktower Drive	Regular recreational pressure likely, with free public access from the north of Clocktower Drive
	P32A	Portsmouth Cricket Club	Public access, with periods of high recreational usage likely to be interrupted by days without access
	P35	Southsea Common comprising amenity grassland	Regular high levels of recreational pressure likely due to public access and close proximity to residential development
	P48A	Amenity grassland adjacent to Port Solent	No perimeter fencing and, therefore, potential public

Type of supporting habitat	Site Code	Site Description	Nature of Recreational Pressure
			access. However, distant from the nearest residential housing.
	P48B	Amenity grassland adjacent to Port Solent	No perimeter fencing and, therefore, potential public access. However, distant from the nearest residential housing.
	P52	Amenity grassland adjoining Portsmouth College	Freely accessible by students of Portsmouth College.
	P54	Recreational pitch with amenity grassland	Public access, with periods of high recreational usage likely to be interrupted by days without access
Primary Support Areas	P19D	Great Salterns Lake within golf course	Daily public access likely, with golfing usage likely to be lower in winter compared to summer.
	P40	Alexandra Park, comprising sports pitches and amenity grassland	Public access with regular recreational visits from nearby housing
	P40A	Portsmouth Athletic Club	Public access, with periods of high recreational usage likely to be interrupted by days without access
	P43	Hilsea Bastion Gardens and Portsmouth Grammar School Playing Field	Public access, with periods of high recreational usage likely to be interrupted by days without access
	P48C	Gently undulating semi-improved grassland to the south-east of Port Solent	Separated from housing by the M27 and M275 motorways. No public access due to the site being part of the Paulsgrove Household Waste Recycling Centre
	P78	Suppralittoral sand at Eastney Beach	Public access with regular high levels of recreational pressure from nearby housing
	P140	Portsmouth Royal Marines Sports Complex	Public access, with periods of high recreational usage likely to be interrupted by days without access
	P142	Intertidal sandflat at Eastney Beach	Public access with regular high levels of recreational pressure from nearby housing

Type of supporting habitat	Site Code	Site Description	Nature of Recreational Pressure
	P148	Sports pitches forming part of Stamshaw Adventure Playground	Public access with regular recreational visits from nearby housing
Secondary Support Areas	P19B	Great Salterns Golf Course	Daily public access likely, with golfing usage likely to be lower in winter compared to summer.
	P25	University of Portsmouth Langstone Student Village, comprising sports and playing fields	Public access, with periods of high recreational usage likely to be interrupted by days without access
	P32B	Portsmouth Cricket Club and adjoining golf course	Public access, with periods of high recreational usage likely to be interrupted by days without access
	P127	Semi-improved grassland adjoining Eastney Pier	Public access with regular recreational visits from nearby housing and Ferry Road Car Park

Disturbance from Construction

6.64 There is abundant research in the literature highlighting the impacts of construction processes on bird species. A study conducted by the British Trust for Ornithology highlighted that different types of construction work significantly reduced the densities of five waterfowl species, including Eurasian teal, Eurasian oystercatcher, dunlin, Eurasian curlew and common redshank, up to several hundred metres from the source of disturbance. A more recent study found that the construction of wind farms had greater impacts on bird populations than their subsequent operation. Therefore, any construction work carried out as part of the emerging PLP has the potential for disturbing birds.

6.65 Research on noise and visual disturbance from construction activities undertaken in the Humber Estuary, indicates that noise disturbance from construction should be limited to below 70 dB as waterfowl in a busy estuarine environment are able to habituate to such noise levels. Furthermore, the noise from the most disturbing construction works, such as impact piling, recedes to below disturbing levels approx. 100m from the source. However, despite this general noise threshold, specific regard should be given to the sensitivity of individual species. For example, redshank and brent geese, both qualifying species of SPA / Ramsar sites in the area of the Seafront Masterplan, are highly sensitive to noise disturbance and caution is advised for any noise levels above 55 dB.

6.66 The potential for visual disturbance differs markedly between species and the type of activity undertaken by birds. For example, redshank respond to visual stimuli at 250m of open distance, while brent geese react to visual stimuli only to approx. 105m distance when feeding. However, when roosting, the tolerance of brent geese reduces and the distance at which they respond to a visual stimulus increases to 205m. Overall, the evidence base highlights that the qualifying species of both the Portsmouth Harbour SPA / Ramsar, and the Chichester and Langstone Harbours SPA / Ramsar are vulnerable to the effects of visual and noise disturbance.

6.67 Due to their proximity, both the Portsmouth Harbour SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar require consideration. However, construction disturbance in functionally linked habitats also requires appraisal, as such habitats are important in maintaining Solent's ecological network.

6.68 The PLP contains a series of broad Strategic Allocations, which account for a considerable amount of development coming forward to 2040. The following sections provide an assessment of these Strategic Allocations in relation to construction disturbance. Note that detailed noise modelling (for example) cannot be undertaken at this level as it requires detailed knowledge of the development programme, layout and construction methods which will not be available until the individual planning applications are developed.

Portsmouth Harbour SPA / Ramsar

6.69 Given it borders directly onto the Portsmouth Harbour SPA / Ramsar, the Tipner Strategic Allocation (PLP3) is most likely to cause visual and noise disturbance in the SPA / Ramsar, with PLP4 (Tipner East) also providing considerable potential for construction disturbance given its proximity to the SPA/Ramsar. The proposal for Tipner West also involves land reclamation as well as a bridge from Tipner to Horsea Island, both of which will involve construction works within the SPA / Ramsar. Therefore, strategic development at Tipner generally has a high disturbance potential for SPA / Ramsar waterfowl.

6.70 The Lakeside North Harbour is a Strategic Allocation that lies to the north of Portsea Island, approx. 200m from the nearest part of the Portsmouth Harbour SPA / Ramsar. It is considered that, over this distance, any construction noise (from the noisiest types of works) would have attenuated to non-disturbing levels, even without using visual or noise mitigation. Furthermore, the SPA / Ramsar in this location is subject to existing high levels of noise from the strategic road network, including the M275, M27 and the A27. Therefore, no visual and noise impacts on the SPA / Ramsar are expected from this allocation.

Chichester and Langstone Harbours SPA / Ramsar

6.71 The St. James' and Langstone Campus Strategic Allocation adjoins the Chichester and Langstone Harbour SPA / Ramsar. The current plan for the site indicates that the section of the allocations closest to the SPA / Ramsar will remain open space. However, the closest brownfield component of the site lies only approx. 84m from the SPA / Ramsar. Depending on where new development within the Strategic Allocation is coming forward, there is a risk of visual and noise disturbance to SPA / Ramsar waterfowl / waders.

Functionally Linked Habitat

6.72 Due to their importance in supporting SPA / Ramsar waterfowl and waders, potential construction disturbance in functionally linked habitats should also be avoided. The Strategic Allocations identified above in relation to the Habitats sites, are also most likely to cause disturbance in functionally linked habitats during the construction period. For example, construction processes at both Tipner West and East could disturb feeding brent geese in the Primary Support Areas P60, P40A and P40, and the Secondary Support Area P139. There are also three Areas of Low Use within and adjacent to Tipner East (P38, P39, P136). Similarly, construction in the St. James' and Langstone Campus allocation in the east of Portsmouth City is within the screening distance for visual and noise disturbance to the Core Areas P23A and P23B. A Secondary Support Area (P25) lies within the core of the Strategic Allocation.

Existing Mitigation in the Portsmouth Local Plan

6.73 The distribution of supporting habitats in relation to the Strategic Allocations suggests that visual and noise disturbance resulting from construction has the potential to result in adverse effects on site integrity unless mitigation measures are adopted. It is noted that the PLP contains high-level policy wording protecting Solent's Habitats sites and off-site supporting habitats. Policy PLP39 (Biodiversity) states… 'Development proposals with the potential to impact alone or in combination on one or more international sites(s) will be subject to a HRA… Development proposals that will result in any adverse effect on the integrity of any international site will be refused unless it can be demonstrated that: there are no alternatives to the proposal; there are imperative reasons of overriding public interest why the proposal should nonetheless proceed; and adequate compensatory provision is secured.'

6.74 The supporting text for Policy PLP39 (Biodiversity) includes the following measures:

- It is generally advised that construction work within 100m of relevant SPAs / Ramsars or functionally linked habitats known to support SPA / Ramsar waterfowl and / or waders should avoid the period October to March (inclusive) entirely.

- Where construction works will occur in a precautionary 300m buffer zone around the Habitats sites, an assessment of noise and visual disturbance potential should be undertaken for individual planning applications. Where works may be disturbing and cannot avoid the October to March period, adequate visual and noise screening equipment should be used to shield bird sightlines and buffer them against noise disturbance. Noise shielding should be such that noise levels at receptors are limited to 70 dB (or below); in other words, an 'acceptable' dose of noise is attained at the birds.

- For any construction works carried out within the Portsmouth Harbour SPA / Ramsar such mitigation measures will be insufficient if the work is undertaken during the core winter/passage period. In such cases, the construction programme should be timed to avoid the October to March overwintering period of qualifying SPA / Ramsar birds. Avoiding this sensitive period will mean that any adverse visual and noise impacts on the Portsmouth Harbour SPA / Ramsar are prevented.

6.75 Based on professional experience of many redevelopment projects close to Special Protection Areas, these measures ensure the protection of SPA /Ramsar waterfowl and waders from visual and noise disturbance.

6.76 However, given the nature of the development proposals, particularly those aspects of the works within the Portsmouth Harbour SPA / Ramsar, AECOM considers that further detail and specificity is required to adequately protect SPA / Ramsar interest features. These are presented in the next section.

Conclusions and Recommendations

6.77 Overall, at the strategic level the policies and supporting text with the Plan provide protection from visual and noise disturbance effects arising from construction.

6.78 However, it is recommended that development within the Strategic Allocations is spatially distributed such that any potential visual and noise disturbance is minimised. For example, the St, James and Langstone Campus allocation is relatively large. Focussing much of the (re)development in the western part of the allocation, would minimise disturbance impacts on the supporting habitats P25, P23A and P23B. However, space constraints mean that such an approach clearly is not possible for other Strategic Allocations (e.g. Tipner).

Water Quality

6.79 As indicated in the impact pathway and LSEs section, the marine environment surrounding Portsmouth City is sensitive to a decline in water quality. Being a marine environment, the primary growth limiting nutrient is nitrogen, whereas phosphorus is generally considered to be less important. The Solent has recently been designated under section 96C of the Water Industry Act 1991. This is relevant because such designation enables the government to specify the concentration of nitrate that applies to a plant (which discharges into the catchment area) in relation to a nutrient pollution standard instead of the standard concentration. This will contribute to addressing nutrient issues by improving standards at relevant wastewater treatment works. All Habitats sites in the immediate vicinity of Portsmouth City depend on good water quality and the following Appropriate Assessment therefore groups the discussion of the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC. The water quality in the Solent & Southampton Water SPA / Ramsar and the Solent and Dorset Coast SPA is unlikely to be affected by the PLP due to the flow distance, dilution factor and natural attenuation processes involved. These sites were screened out specifically regarding development in the PLP.

Solent & Dorset Coast SPA/Portsmouth Harbour SPA / Ramsar, Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC

6.80 Natural England's Site Improvement Plan (SIP) for the Solent states that water pollution affects a range of habitats and bird species through eutrophication (in the case of birds through cascading effects mediated through the food chain) and direct toxicity. Sources include both point-source discharges (e.g. from flood alleviation / storm discharges and Wastewater Treatment Works; WwTWs) and diffuse nitrogen leaching, such as from agricultural and road surface run-off. Currently, it is now advised that nitrogen and phosphorus concentrations entering the Solent are continuously monitored to identify the scale of nutrient inputs to the marine environment.

6.81 A significant portion of the nitrogen loading in the marine environment derives from agriculture, such as from the routine application of fertilisers and other factors (e.g. livestock accessing freshwater bodies). This source is being addressed through several strategic mitigation solutions (e.g. through Defra's Catchment Sensitive Farming initiative and does not lie within the control of Local Planning Authorities (i.e. agricultural land is not usually allocated in Local Plans). However, a smaller, yet in-combination still significant, source of nitrogen is treated sewage effluent from WwTWs. Potential adverse impacts of treated wastewater on Habitats sites are typically prevented through the Review of Consents process undertaken by the Environment Agency. This sets permit limits for water quality parameters (such as nitrogen) in WwTWs discharging to sensitive waterbodies. However, there is growing uncertainty whether future housing and the associated wastewater output can be accommodated without detrimental effects on Habitats sites.

6.82 The European Commission urban wastewater website was consulted to identify the most likely WwTW serving Portsmouth City. Judging by its proximity to Portsea Island, sewage effluent from the city is likely to be treated in the Portsmouth and Havant WwTW (Budds Farm). This plant processes sewage from 370,749 people and has more stringent secondary nitrogen treatment in place. The WwTW discharges to the Chichester and Langstone Harbours SPA / Ramsar via an outfall pipe, with potential knock-on impacts on its marine ecosystems. While the WwTW is classified as 'compliant', with pass performances in both primary and secondary treatments, Natural England (NE) advises that abiding by the Review of Consents process may no longer protect the integrity of Habitats sites in the Solent.

6.83 NE has introduced a requirement of nutrient neutrality for new developments in the Solent region, including residential dwellings, hotels / holiday accommodation and tourism attractions. This applies to development of all sizes, even one additional dwelling, which could add to the existing nutrient burden in Solent's Habitats sites. NE's advice note (the latest version of which is Version 5 dated June 2020[87]) includes a nutrient neutrality calculation, which needs to be completed for any of the above identified types of development. The entirety of the Portsmouth City island lies within the hydrological catchment of the above Habitats sites and therefore all sites allocated in the emerging PLP will need to be supported by a detailed nutrient budget.

6.84 The total demand for nutrients going forward is based upon the supply as set out in table 6.1 (Sources of New Homes in Portsmouth) of the emerging Local Plan. The predicted supply as set out in that table has been used as a starting point. This table does not include all of the sources of supply as set out in table 6.1. The differences are that it does not include completions as these are assumed to have already secured appropriate nitrate mitigation, and it does not include supply from other LPA's secured through the duty to cooperate as nitrates for these schemes will be secured by the relevant LPA.

6.85 The following sources of demand have been included:

- Permissions outstanding (as credits are secured on occupation)
- C3 Housing projections comprising Strategic Sites, Strategic Allocations, Local Plan reg 19 identified sites, and Windfall sites.
- Houses of Multiple Occupation
- Other C2 development

6.86 In order to estimate the number of credits (measured in kilograms of total nitrogen per year, KgTN/yr) that will be required, assumptions have had to be made on the nitrate requirement for different types of projected development. These results in different per dwelling nitrogen surpluses being applied to the housing figures in order to give the required nitrate surplus in Kg/TN/yr. For housing, a surplus of 0.87 kgTN/yr per dwelling has been applied based upon the latest Solent Nutrient Budget calculator. This ratio has been applied to the following sources of supply: permissions (as schemes do not secure nitrate mitigation until occupation), Local Plan Regulation 19 allocations and windfall sites.

6.87 Strategic Sites and allocations have site specific estimates from two sources; where the exact agreed number of credits is known that number is used; where the exact agreed number is not yet established then site specific calculations carried out by the PfSH SEPO team using the Solent Nutrient Budget Calculator are used. The City Council has also written directly to the owners of the Strategic sites and allocations

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

asking for further detail on how they will meet their nutrient offsetting requirements, the results of this will feed into future updated estimates.

6.88 HMO's apply a per dwelling surplus of 0.839 based upon the average of nitrates required for past HMO development, this assumes a need of 0.36 Kg/TN/yr per additional bed spaces as set out in Appendix 2 and 3 of this paper, this is then multiplied by the average uplift in bed spaces per sui generis HMO scheme to give the 0.839 average figure.

6.89 Hotels apply a per room surplus of 0.17 kg/TN/yr based upon the calculation set out in appendix 5. This number is lower than HMO and C2 bed spaces as Hotel beds are assumed to have a lower water usage of 55 litres per person per day, as hotel guests will use less water than permanent residents. This is set out in the City Councils updated Nutrient Neutrality Strategy.

6.90 These ratios are applied to the 'Sources of New Homes in Portsmouth' data as taken from table 6.1 of the Local Plan. This has resulted in an indicated need for nitrogen credits equivalent to a surplus of 12,464.67 Kg/TN/yr across the Local Plan period.

Mitigation Contained in the Portsmouth Local Plan

6.91 The emerging PLP already refers to water quality in the Solent and the concept of nutrient neutrality in Policy PLP44 (Nutrient Neutrality in International Nature Designations). It states that 'Development proposals… will be permitted where they demonstrate through a nutrient budget that they secure Nutrient Neutrality through either offsetting, provision of direct and indirect mitigation measures, purchase of mitigation credits or a mixture of these' . This policy text aligns the plan document with Natural England's requirement and places the onus on site promoters to ensure that there will be no net nutrient input to the Solent from future development.

6.92 Importantly, the supporting text to Policy PLP44 also provides details on how nitrogen in treated sewage effluent might be mitigated. Portsmouth City Council published an Interim Nutrient Neutral Mitigation Strategy (INNMS) (November 2019) to provide a framework for applicants to meet the Habitats Regulations and to secure mitigation in-perpetuity. The INNMS introduces the concept of mitigation credits generated by water efficiency upgrades to council-owned housing; in other words, it seeks to reduce the volume of sewage effluent. Furthermore, higher water efficiency standards in new development are to become a condition for planning consent. While the INNMS provides an additional measure in the toolkit for protecting the Solent's water quality, the Council acknowledges that this strategy alone will not provide sufficient mitigation for the level of development expected beyond a two-year period.

6.93 The PLP also refers to the Partnership for South Hampshire (PfSH), which is in the process of establishing a programme for land use change in the wider Solent region in partnership with the Hampshire & Isle of Wight Wildlife Trust (HIWWT). This will enable site promoters to purchase agricultural land strategically to be managed to reduce nitrogen leaching. Overall, the emerging PLP already refers to the main existing pillars of nitrogen mitigation, implying that any allocated development would not materially contribute to in-combination water quality impacts in the Solent.

6.94 Portsmouth City Council has produced an Updated Interim Nutrient Neutral Mitigation Strategy for New Dwellings strategy[88]. This strategy sets out the how development can offset its nutrient impact dependent upon its type and size. The Nutrient Neutral Mitigation Strategy sets out 3 options for provision of Mitigation for nutrients.

6.95 The following approaches are currently considered to be acceptable, in principle, as means of achieving or contributing to nutrient neutrality:

- Mitigation Option 1: Offsetting against the existing lawful land use on an application site, extant permissions or other land controlled by the applicant; and/ or
- Mitigation Option 2: bespoke direct and in-direct mitigation measures, agreed in discussion with the Council and Natural England. For instance, Sustainable Urban Drainage Systems (SUDS), interception or wetland creation; and/ or

[88] Updated_Nutrient_Neutral_Strategy_post_cabinet_version-June22.pdf (portsmouth.gov.uk)

- Mitigation Route 3: Purchasing of 'mitigation credit' from recognised source of nitrogen mitigation: Purchase of 'mitigation credit' from the Council or other landowner/ recognised source of 'mitigation credit', secured in perpetuity.

6.96 A mix of Options can be applied. The purchase of the Council's mitigation credit (Option 3b) will be available to minor development proposals (9 units and below) and Portsmouth City Council development as appropriate.

6.97 The City Council has developed a credit bank for the provision of credits in order to enable development. The Portsmouth's 'credit bank' consists of credits purchased by the Council through the Hampshire & Isle of Wight Wildlife Trust mitigation scheme, water efficiency improvements and any PCC assets that become vacant during the life of this Strategy.

6.98 As of December 2023, The Council had a total of 1,892.83 nitrates credits in its credit bank. This comprised 1,043 credits from city council water efficiency measures and 849.83 credits outstanding from those purchased from the Hampshire & Isle of Wight Wildlife Trust. The credit bank is a live document, and it should be noted that this position is constantly changing.

6.99 The City Council has been retrofitting water efficiency measures on its existing stock for several years, these have resulted in an average of 38.83 credits being created per month. It is expected that this rate will fall over the plan period due to increasing costs as stock becomes more difficult to make efficient due to easy to target properties having already been retrofitted. It is also confirmed that approximately 4,000 of the 15,334 council owned properties across Portsmouth and Havant Boroughs have been made more efficient leaving approximately 11,000 properties as the maximum that could be subject to further water efficiency measures. The water efficiency measures from approximately 4,000 homes to date have resulted in savings equivalent to 1,472 credits. If the remaining Council owned properties (11,000) were also made more efficient, savings equivalent to a further 4,048 credits would be potentially available. Applying a 20% discount to take account of the fact not all properties can be retrofitted results in a total expected credit availability from this source of 3,238.4 credits.

6.100 The City Council directs major development to the Hampshire and Isle of Wight Wildlife Trust, who provide credits directly to those site promoters. The Hampshire and Isle of Wight Wildlife Trust has indicated that it currently has agreements to provide credits directly to 10 developments (including Strategic sites/ allocations) in the City providing 1,523.5 KgTN/yr of nitrate offsetting.

6.101 Overall these sources of supply are providing credits equivalent to a total of 6,654.73KgTN/yr. When applied to the 20 year plan period to 2040 this gives the equivalent of 10.87 years' worth of nutrient credits available. The City Council may look to explore further sources of credit to improves its supply position. Therefore the City Council expects to have nutrient credits that go well beyond the end of the first five years of the Local Plan period when the Local Plan must be reviewed. Moreover, it is noted that the UK Government is planning to introduce proposals which would limit the need for nutrient neutrality to be delivered at the planning application level, with strategic solutions independent of the planning process taking their place.

6.102 Since the PLP is supported by calculations that demonstrate the nutrient surplus and mitigation requirement, and sets out the intended mitigation solution for at least the first 5 year plan period (since Local Plans must in any event be reviewed every 5 years), adverse effects of the plan on the integrity of the Portsmouth Harbour SPA / Ramsar, Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC regarding water quality can be excluded, in-combination with other plans and projects.

Water Quantity, Level and Flow

6.103 The Solent's marine sites are all sensitive to a significant reduction or an excessive increase in the amount of freshwater flowing into the sites. This is for a variety of reasons, such as changes to the salinity, amount of aquatic habitat, sedimentation and dissolved oxygen concentration in the water column. The primary way in which Local Plans tend to affect the volume of water in Habitats sites is through the abstraction of freshwater for potable water supply in new developments. Natural England's SIP highlights hydrological changes as a threat to the Solent. In particular, the SIP refers to Titchfield Haven as having a high level of water abstraction licenses, which could jointly lead to a significant reduction (and adverse effects on site integrity) of the water levels in the SPA / Ramsar and SAC.

6.104 Water companies (in this case Portsmouth Water) are responsible for devising long-term water abstraction strategies and the management of water resources. Water Resources Management Plans (WRMPs) are

strategic in nature and affect waterbodies across large spatial scales. Therefore, the Appropriate Assessment for the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC is undertaken jointly in the following section.

Portsmouth Harbour SPA / Ramsar, Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC

6.105 All marine sites in the Solent largely depend on freshwater input from perennial and ephemeral chalk streams and rivers, flowing into the English Channel. Any plans or projects with the potential to alter this hydrological flow may increase or reduce the amount of freshwater received by the Habitats sites. Portsmouth City and the wider geographic area surrounding it, is served by Portsmouth Water. The company's latest WRMP was published in 2019 and provides an appraisal of the options likely to be required to serve the growing population. Generally, water resource options that do not increase the existing consented abstractions or 'exploit' new resources are unlikely to be a threat for the integrity of Habitats sites, as these would have been previously subject to HRA. Instead, proposals for increased abstraction volumes or tapping of previously unused resources, are most likely to be a risk for the hydrological integrity of marine sites. One supply management option that represents a particular issue for marine sites is the desalination of saltwater, which effectively removes marine habitat and alters the aqueous solute balance.

6.106 Portsmouth Water supplies an area of 868km2 with a population of around 722,000. The company's supply area includes a large section of coastline, comprising several Habitats designated sites. The daily abstraction rate averages approx. 170 Ml/d, taken from boreholes, springs and one river in the local Chalk aquifer (88% of all of the company's water). Importantly, the WRMP provides a forecast of the supply-demand balance over the plan period. This balances the Deployable Output (i.e. the water available for use) from a 1 in 200-year severe drought against an unconstrained demand year. In other words, this balance is precautionary as it models a scenario in which groundwater levels or river flows are much lower than normal, restricting the amount of available for abstraction. Supply-demand balances also account for other factors, including:

- Impacts of climate change;
- Process losses;
- Outages; and
- Bulk supplies.

6.107 The WRMP shows that the WRMP is in a supply-demand deficit throughout the entire planning period from 2019/20 (-27.9 Ml/d) to the largest deficit in 2044/45 (-80 Ml/d). This is despite non-household consumption and leakage losses decreasing over time. The WRMP concluded that other options would be required to address this imbalance and ensure the water supply throughout the planning period. Options to reduce the supply-demand deficit were then considered, including proposals to increase licensed abstraction volumes. However, most options for increasing abstraction licenses (in particular from surface waterbodies) were screened out on environmental grounds. Options relating to desalination were also screened out, because these were conflicting with options included in Southern Water's WRMP.

6.108 Several schemes to maximise Deployable Output (DO) were taken forward to the list of feasible alternatives, including four groundwater resources (Sources O, J, H and C). The statutory HRA and SEA review process did not identify any concerns regarding the increased DO obtained from the groundwater resources. One of the main reasons for this is that none of the resource options require increases in licensed abstraction quantities. Instead, they focus on maximising the DO through technology improvements at the boreholes, such as the installation of new water filtration techniques. All four options maximising groundwater sources have been included in the company's preferred plan going forward. AECOM has requested access to Portsmouth Water's WRMP HRA, which will be considered in the HRA for the Reg.19 stage of the PLP.

6.109 The WRMP seeks to supply all projected growth in the region including growth in Portsmouth City and is based on robust population projections including climate change which go well beyond the PLP period. It has been adopted on the basis that no adverse effect on the integrity of Habitats sites will arise and does not involve any increases to licensed groundwater abstractions or the exploration of new water resources. Therefore, it is concluded that the emerging PLP will not result in adverse effects on Solent's Habitats sites

regarding water quantity, level and flow, in-combination with other plans and projects. As such, no additional policy wording is recommended for insertion in the PLP.

Atmospheric Pollution

6.110 The Solent's Habitats sites are all sensitive to atmospheric pollution to varying degrees. Changes to SAC habitats or effects on SPA / Ramsar bird species are primarily the result of atmospheric nitrogen deposition resulting from increases in commuter traffic. The emerging PLP allocates 13,603 net new dwellings and a minimum of 138,429m2 of employment land. New Portsmouth City residents commuting within or out of the authority, as well as residents from adjoining authorities working in new employment opportunities within the city, are likely to increase the local commuter traffic considerably.

6.111 Potential effects are only considered relevant where a major road (i.e. an A road) runs in a reasonable commuter corridor connecting a plan area with potential employment destinations and where said road lies within 200m of a Habitats site sensitive to atmospheric pollution. Detailed mapping of sensitive habitats within a site also needs to be consulted, because such habitats often only occupy smaller sections of designated sites. In contrast to the previous sections in this AA, all sites are discussed separately in the following. This is due to the unique road infrastructure surrounding each of the sites, with likely impacts on their suitability as commuter corridors. As identified earlier in this HRA the main potential for adverse effects for Portsmouth arises in the relatively few areas where key commuting routes lie within 200m of areas of saltmarsh.

Portsmouth Harbour SPA / Ramsar

6.112 The Portsmouth Harbour SPA / Ramsar is designated for species that are potentially sensitive to atmospheric nitrogen deposition. APIS identifies that the littoral habitats these species rely on (i.e. the intertidal zone) has a critical nitrogen load of 20-30 kg N/ha/yr. While red-breasted mergansers are not sensitive to atmospheric pollution, both black-tailed godwits and dark-bellied Brent geese are potentially sensitive. Black-tailed godwits mainly eat invertebrates, such as molluscs and crustaceans inhabiting the intertidal zone. However, the effect of nitrogen deposition and an increase in plant growth on this species is uncertain, potentially being a positive one due to an increase in the abundance of invertebrate prey. The main potential threat of nitrogen deposition is therefore to dark-bellied brent geese, because an increase in graminoids could lead to the disappearance of preferential foodplants in saltmarsh.

6.113 Policy PLP3 of the PLP allocates Tipner West & Horsea Island East, and this includes a proposal for a bridge between the Tipner peninsula and Horsea Island, running alongside the M275. This bridge will provide a faster route between Portsea Island and the mainland, enabling more convenient access to the Horsea Island Open Space. It is to be noted that there will be no through-traffic between Horsea Island and settlements to the north (e.g. Paulsgrove and Portchester) and the bridge will therefore be used by local bus services, pedestrians and cyclists only. Traffic and air quality modelling undertaken the Regulation 19 Local Plan modelled 5 transects into this SPA/Ramsar including E01 to E04 off the M275. The full data are reported in Appendix C of this HRA. However, in summary, no air quality effect on Habitats sites will arise because no air pollution sensitive habitats lie within 200m of any of the modelled links, including the proposed bridge (i.e. no vegetated habitats, just intertidal mudlats).

6.114 In addition to exhaust emissions, construction of the bridge and its piers may involve some dust generation. However, this cannot be assessed until a planning application is being prepared and there are effective standard dust control techniques available to minimise dust deposition.

6.115 Therefore, no adverse effect on the integrity of the Portsmouth Harbour SPA/Ramsar site from air quality impacts will arise.

Chichester and Langstone Harbours SPA / Ramsar

6.116 The Chichester and Langstone Harbours SPA / Ramsar is designated for a range of waterfowl and wader species, some of which are indirectly sensitive to the effects of atmospheric nitrogen deposition. It was established earlier in the HRA report that the only air quality sensitive habitat that may be affected by increased nitrogen deposition within this SPA/Ramsar site as a result of the PLP were localised areas of saltmarsh.

6.117 The dark-bellied brent geese may be impacted through increased nitrogen deposition due to their reliance on saltmarsh for feeding. There is saltmarsh within approx. 36m from the A27 / A3 interchange in the adjoining authority of Havant. This stretch of the A27 is extremely busy with a total AADT of 116,718 cars, 22,797 Light Goods Vehicles and 5,607 Heavy Goods Vehicles in 2019. The road link is likely to be a major journey-to-work route for Portsmouth City residents, particularly because Havant is the most important origin of and destination for commuters associated with the city. Overall, Havant accounts for 27.9% of daily trips into and 25.7% trips out from Portsmouth City. Given this evidence, traffic and air quality modelling has been undertaken for this stretch of the A27 to inform the HRA of the Reg.19 PLP.

6.118 Four transects, E06 to E09, were modelled into this SPA/Ramsar site for the Local Plan traffic and air quality modelling. Two of those transects (E07 and E09) have saltmarsh within 200m of the roadside, as discussed in the likely significant effects section. As also discussed in that section it is considered that the 20 kgN/ha/yr critical load is most appropriate for the SPA/Ramsar bird interest because these are more dependent on lower and pioneer saltmarsh than on drier and more densely vegetated upper saltmarsh, and because they are not susceptible to relatively subtle botanical changes in the marsh as opposed to major structural changes. The saltmarsh on transect E07 is 15m from the roadside at the closest. The saltmarsh on transect E09 is approximately 40m from the roadside at its closest. Each transect is discussed in turn below.

Transect E07 (A27)

NOx

6.119 Future NOx concentrations are not forecast to exceed the critical level of 30 μgm^{-3}. Therefore no negative effect through NOx in atmosphere is expected.

Ammonia

6.120 The upper critical level for ammonia of 3 μgm^{-3} (applicable to saltmarsh which has no significant lichen or bryophyte interest) is exceeded up to 40m from the roadside, affecting c. 0.3ha of saltmarsh. According to the JNCC data 23% of the SAC consists of saltmarsh i.e. 2,585.92ha. Therefore, the in combination effect would apply over 0.01% of the saltmarsh in the SAC.

6.121 The ‘in combination’ effect from all traffic growth up to 2041 is forecast to be large, being 23% of the critical level. However, the contribution of the Portsmouth Local Plan is a maximum of 1% of the critical level. Therefore, the ‘in combination’ effect is associated with growth across southern England, given the regionally strategic nature of the A27 as one of the busiest trunk roads in the UK, rather than by local growth. On other projects Natural England have accepted that where the national strategic highway network managed by National Highways is involved, this is a regional/national issue rather than a Local Plan matter provided the Local Plan itself makes no material contribution to any ‘in combination’ effect.

6.122 The forecast ’in combination’ effect averages at 0.03 micrograms of additional ammonia per annum, meaning the Portsmouth Local Plan is responsible for effectively 1 year of additional ammonia. Moreover, ammonia concentrations fluctuate greatly due to meteorological factors. Scrutiny of ammonia data from the UKEAP national ammonia monitoring network for a range of sites covering 2010-2019 shows that at urban sites like this one background ammonia concentrations generally fluctuate by as much as $3\mu g/m^3$ (100% of the critical level) throughout the year. Therefore, care should be taken not to read too much into very small (in absolute rather than percentage terms) forecast changes in average ammonia concentration, As such, even without the Portsmouth Local Plan, little difference would be seen in future ammonia emissions. No adverse effect on integrity is therefore expected due to the Portsmouth Local Plan alone or in combination with other plans or projects.

Nitrogen deposition

6.123 The 20 kgN/ha/yr critical load for nitrogen deposition is exceeded throughout the transect. The ‘in combination’ effect from all traffic growth up to 2041 is forecast to be large, being 18% of the critical load at its greatest. However, as with ammonia the contribution of the Portsmouth Local Plan is imperceptible being a maximum of 0.8% of the critical load (0.15 kgN/ha/yr). Therefore, as with ammonia the ‘in combination’ effect on the A27 is driven by traffic growth across southern England rather than local traffic growth. On other projects Natural England have accepted that where the national strategic highway network managed by National Highways is involved, this is a regional/national issue rather than a Local Plan matter provided the Local Plan itself makes no material contribution to any ‘in combination’ effect.

6.124 Moreover, there is still forecast to be a net reduction (improvement) in nitrogen deposition by 2041 even allowing for growth. In the absence of growth an improvement of 5.11 kgN/ha/yr is forecast to result, which is approximately 0.23 kgN/ha/yr on average. Portsmouth Local Plan will therefore retard this improvement by approximately 8 months, which is not significant. Therefore, no adverse effect on integrity would arise either alone or 'in combination' with other plans or projects.

This matches the conclusion that Havant Council have drawn based on their own traffic modelling and air quality modelling for this area which concluded that no 'in combination' adverse effect on saltmarsh habitat would arise.

6.125 Note that the model is likely to materially overestimate ammonia and nitrogen emissions because it takes no account of the expected significant electrification of the vehicle fleet from 2030, which will result in a considerable reduction in traffic-related NOx and ammonia emissions.

Transect E09 (A2030 Eastern Road)

NOx

6.126 At the closest area of saltmarsh, future NOx concentrations are not forecast to exceed the critical level of 30 μgm^{-3}. Therefore no negative effect through NOx in atmosphere is expected.

Ammonia

6.127 At the closest area of saltmarsh, future ammonia concentrations are not forecast to exceed the upper critical level of 3 μgm^{-3} applicable to saltmarsh. Therefore no negative effect through ammonia in atmosphere is expected.

Nitrogen deposition

6.128 At the closest area of saltmarsh, nitrogen deposition rates are not forecast to exceed the 20 kgN/ha/yr critical load, being a maximum of 15.36 kgN/ha/yr. Therefore, no adverse effect on the saltmarsh habitat and thus on the SPA/Ramsar birds that use it is expected.

6.129 Moreover, it is important to note that the experimental studies which underlie conclusions regarding the sensitivity of saltmarsh have '… neither used very realistic N doses nor input methods i.e. they have relied on a single large application more representative of agricultural discharge'[89], which is far in excess of anything that would be deposited from atmosphere. Therefore, APIS indicates that determining which part of the critical load range to use for saltmarsh requires expert judgment.

6.130 Generally, nitrogen inputs from the air are not as important as nitrogen from other sources. Effects of nitrogen deposition from atmosphere are likely to be dominated by much greater impacts from marine or agricultural sources. This is reflected on APIS itself, which states regarding saltmarsh that 'Overall, N deposition [from atmosphere] is likely to be of low importance for these systems as the inputs are probably significantly below the large nutrient loadings from river and tidal inputs'[90]. Another mitigating factor is that the nature of intertidal saltmarsh in the Solent estuaries means that there is daily flushing from tidal incursion. This is likely to further reduce the role of nitrogen from atmosphere in controlling botanical composition.

Solent Maritime SAC

6.131 The qualifying habitats of the Solent Maritime SAC have varying degrees of sensitivity to atmospheric nitrogen deposition. Review of information on APIS indicates that the habitats most sensitive to atmospheric pollution are the perennial vegetation of stony banks (critical nitrogen load of 8-15 kg/ha/yr) and shifting dunes along the shoreline with *Ammophila arenaria* (critical nitrogen load of 10-20 kg/ha/yr). Furthermore, there are several saltmarsh-related species that have nitrogen sensitivity, although see the previous section for comments on the general sensitivity of saltmarsh and the appropriateness of the upper critical load for these communities in the modelled locations. Large sections of the SAC overlap with the Chichester and Langstone Harbours SPA / Ramsar, and similar A roads are therefore likely to be relevant for an appraisal as potential commuter routes, including the A2030 and the A27.

6.132 An air quality Habitats Regulations Assessment was undertaken for the Havant Borough Local Plan (2016-2036) by Ricardo Energy & Environment. Importantly, the air quality modelling work covers the same period

[89] http://www.apis.ac.uk/node/968
[90] Ibid.

as that covered by the emerging PLP. While the assessment comprised some scenarios that are not relevant to the PLP (i.e. a Havant Borough Do Minimum scenario only including the growth in Havant District), a Partnership for Urban South Hampshire (PfSH) Do Minimum scenario including 100,000 additional dwellings was also modelled. This included the development allocated in the PLP and therefore provides an in-combination assessment of potential atmospheric pollution effects.

6.133 The air quality assessment initially confirmed that the PfSH Do Minimum scenario would contribute a maximum of 3.6 kg/N/ha/yr, representing 45% of the critical load. Ground-truthing surveys to look for the most air quality sensitive habitats (sand dunes and perennial vegetation of stony banks) showed that there were no sand dunes within the areas for which an exceedance of screening thresholds was predicted. However, two areas originally identified as comprising perennial vegetation of stony banks were identified within 200m from the A2030 along the eastern edge of Portsmouth City.

6.134 The section of the Havant HRA that dealt with air quality thus recommended that Havant Borough Council should develop a joint Nitrogen Action Plan (NAP) with Portsmouth City Council under the Duty to Co-Operate. However, that was based on the understanding that the affected area constituted 'perennial vegetation of stony banks' (relatively intolerant of atmospheric nitrogen deposition) whereas Coastal Partners have identified the area as saltmarsh, which is much more tolerant of atmospheric nitrogen deposition. This area of saltmarsh is to be directly affected by the NPI Phase 4 Coastal Defence Project and suitable compensatory provision of saltmarsh is to be agreed and delivered for that independent scheme. The requirement for a NAP will therefore be reinvestigated as part of further work being undertaken by Havant Council and Portsmouth Council for their respective HRAs. If the habitat in question is saltmarsh then the modelling for Havant Local Plan indicates that the critical load for saltmarsh will not be exceeded, meaning an adverse effect on integrity would not arise.

6.135 Review of the emerging PLP indicates that it contains broad protective policy wording designed to minimise nitrogen deposition in Habitats sites. Policy PSP1 specifies that '*For development adjacent to European-designated wildlife site, it should be demonstrated that proposals do not result in deposition and the level of pollutants do not have a significant effect on the integrity of the wildlife site*'. While this wording clearly protects Habitats sites from air quality-related adverse effects, current evidence indicates that this will not be the case (in the absence of mitigation).

6.136 Since there are no sand dunes or perennial vegetation of stony banks within 200m of the A27 or A2030, and the likely significant effects section has confirmed that the saltmarsh consists of communities of low atmospheric nitrogen sensitivity, the assessment reported for Chichester & Langstone Harbours SPA/Ramsar applies to the SAC as well and thus no adverse effect on integrity is expected alone or in combination with other plans or projects.

Impacts of Tall Buildings / Structures on Flight Lines and Sight Lines

6.137 Natural England's Supplementary Advice Note on Conservation Objectives highlights the importance of maintaining an adequate landscape for qualifying bird species, such as black-tailed godwits and especially the brent geese. The note specifies that an open and unobstructed terrain should be maintained within at least 0.5km of roosting or foraging areas. Qualifying birds require obstacle-free sightlines for the early detection of predators and the visual propagation of display behaviours. Furthermore, clear flight lines facilitate unobstructed bird movement between the SPA / Ramsar and functionally linked habitats.

6.138 The SWBGS carried out a detailed statistical assessment of site usage by waders and brent geese in relation to various topographical and proximity parameters. The data show that urbanisation of the surrounding area is a significant predictor of site suitability to SPA / Ramsar birds. Buildings within three distance ranges were considered, namely within a 50m zone, a 50-500m zone and a 500-2,500m zone. Generally, supporting habitats were statistically more suitable if there were no buildings within the three distance ranges (although for brent geese this was only the case for the 50-500m zone). These data appear to support that waterfowl and waders primarily utilise supporting habitats without adjacent housing, perhaps because birds can more easily navigate to habitats with unobstructed flightlines.

6.139 Both the Portsmouth Harbour SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar support mobile species that frequently navigate between their designated site boundaries and off-site supporting habitats. The potential for any of the Strategic Allocations in the PLP to affect the flight or sight

lines will apply to birds from both SPAs / Ramsars. Therefore, the discussion on these sites is combined in the following paragraphs.

Portsmouth Harbour SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar

6.140 Review of the urbanisation pattern around Portsea Island indicates that the Strategic Allocations in the PLP are unlikely to affect the manner in which birds navigate between the two SPAs / Ramsars. This is because large parts of Portsea Island are already developed and present obstacles to flight lines. Equally, in most instances, new buildings are unlikely to be a problem, because they would be erected against the backdrop of an existing urban frontage with potentially large buildings. New development proposals are likely to have the biggest impact on flight lines and sight lines where they lie on undeveloped land and in between potential flight corridors between the SPAs / Ramsars and supporting habitats.

6.141 However, development in these allocations could affect how birds navigate between supporting habitats. Furthermore, unusually tall buildings or new continuous urban frontages could render existing supporting habitats unsuitable by restricting the sight lines of birds currently using these habitats. The following paragraphs will assess the potential impacts of the Strategic Allocations on sight lines and flight lines of SPA / Ramsar birds.

6.142 Development in Tipner West & Horsea Island East (PLP3) has the highest potential for negatively impacting the flight lines of geese or waders utilising Primary Support Areas (P40, P40A, P43 and P60) and Areas of Low Use (P38, P39 and P136) further landward to the east of the allocation. The obstruction of flight lines may render it more difficult for birds from the core of the SPA / Ramsar to reach these supporting habitats. Furthermore, the Tipner East site (PLP4) lies within 500m of these functionally linked habitats (it will also result in the loss of one area of functionally-linked land, low use area P136, which is discussed separately under functionally-linked land). The construction of tall buildings here, could lead to the loss of adequate sight lines required by brent geese, and their subsequent avoidance of these land parcels.

6.143 The construction of tall buildings and / or a continuous urban frontage in the easternmost part of the St. James' and Langstone Campus could reduce the utilisation of a Secondary Support Area (P25) and a Core Area (P23B) by SPA / Ramsar birds. Overall, the likelihood and magnitude of potential adverse effects will inevitably be subject to the detail of development proposals ultimately brought forward.

Bridge Proposal between Tipner and Horsea Island

6.144 Depending on its height, a future bridge between the Tipner Peninsula and Horsea Island for buses, pedestrians and cycles has the potential to impact on how SPA / Ramsar waterfowl use the flight corridor between Tipner Lake and Portsbridge Creek. Furthermore, birds use visual cues for navigation and additional obstacles have the potential to result in changes to their flight routes, with potential negative impacts on bird energy budgets. The site promoter commissioned a study of waterfowl flight routes in this part of the SPA / Ramsar to inform whether a low or high bridge will be taken forward.

6.145 Wintering bird surveys were undertaken for the project between November 2019 and March 2020 and November 2021 and March 2022. These covered the area surrounding Tipner West were undertaken by WSP to establish the importance of this part of the Portsmouth Harbour SPA / Ramsar to qualifying birds. A focussed survey of the area within 250m of the M275 Bridge was also undertaken in both years to establish existing flight paths of birds and inform the bridge proposal. The 2019-20 vantage point survey on the bridge recorded the passing of 23 species of water bird, both below and above the M275. Larger birds and waders (e.g. brent goose and curlew) appear to cross above the bridge, whereas smaller waders (e.g. redshank Tringa totanus) preferentially cross below it. During the 2021-22 surveys the passage of 24 species of water bird was recorded below or above the M275. These included those which preferentially fly above the bridge (geese and larger waders such as curlew) and species which were almost always recorded crossing below the bridge only (small waders such as common sandpiper Actitis hypoleucos). Despite the high baseline noise level, no disturbance events from traffic on the motorway bridge were recorded, suggesting that SPA / Ramsar species in the survey area are habituated to traffic noise. The lack of disturbance events recorded by boats indicates habituation of wintering birds to boat traffic across the Survey Area. These data will help determine some of the specifications of the Tipner-Horsea bridge, ensuring there will be minimal impact on the flight behaviour of SPA / Ramsar birds.

6.146 Any impact assessment of flight routes will have to be submitted at the planning application stage and will be considered as part of a project-specific Habitats Regulations Assessment to ensure there are no adverse effects on the integrity of Solent's Habitats sites.

Conclusions and Recommendations

6.147 Overall, AECOM considers that there is a risk of new urban development allocated in the PLP to affect the sight- and flight lines of SPA / Ramsar birds. This particularly applies to the Tipner West & Horsea Island East development, covered by policy PLP3, which comprises largely undeveloped land between the SPA / Ramsar and functionally linked supporting habitats and involves the construction of a bridge. The different options currently proposed for the development of Tipner, are likely to have direct relevance for the behaviour and movement of SPA / Ramsar birds, depending on the density and design features of new buildings.

6.148 This impact pathway will be assessed further at the planning application stage, when specific design criteria (e.g. building dimensions, fabric and lighting schemes) are available and a further project-level HRA will be undertaken.

6.149 Policy PLP39: Biodiversity includes the following text "The design of buildings including its height and lighting schemes should be such that there are no adverse effects on sight lines and flight lines of birds in Habitats sites or functionally linked habitats. Buildings should also be designed such that the risk of bird collisions is minimised". PLP1 states that 'Where proposals for a tall building(s) fall within 500 metres of an SPA, SSSI, SAC and/or Ramsar sites, and supporting functionally linked habitats appropriate mitigation measures shall be secured, in consultation with Natural England, to ensure there is no adverse effect on ecological integrity'. Taken in combination with the requirement for a project-level HRA at the planning application stage it is considered the plan presents a sufficient policy framework to ensure no adverse effects on integrity arise.

6.150 Being a strategic development plan, it is concluded that the emerging PLP will not result in adverse effects on the Portsmouth Harbour SPA / Ramsar and the Chichester and Langstone Harbours SPA / Ramsar regarding impacts on flight lines and sight lines. This is because the plan does not contain sufficient detail relating to individual development proposals. However, this HRA has flagged the Strategic Allocations for which this impact pathway is most likely to be an issue.

Coastal Squeeze

Portsmouth Harbour SPA / Ramsar, Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC

6.151 Policy PLP31 (Flooding) identifies that new or replacement coastal defence schemes will be delivered in Portsmouth City, provided that they are consistent with the management approaches identified in the North Solent Shoreline Management Plan (SMP).

6.152 Portsmouth City and the wider Solent coastline encompass highly populated areas, with people living in close proximity to the sea. Urban development is typically protected from flooding by coastal defence schemes including hard structures as well as beach management. At the same time, many of the habitats supporting SPA / Ramsar bird species (e.g. mudflats and saltmarsh) or SAC habitats themselves are vulnerable to a process known as coastal squeeze. As highlighted in the section on impact pathways, this involves the loss of habitats under climate change pressures (including sea level rise), which are prevented from 'migrating' landwards by coastal defence structures.

6.153 In the Solent, these defences are specified in the North Solent SMP, a document that is subject to consultation with statutory bodies (including Natural England) and HRA. SMPs provide large-scale assessments of processes such as coastal flooding and erosion, and advice to operating authorities on the management of their coastal defences. SMPs are also to comply with international and national nature conservation legislation, including the protection of Habitats sites.

6.154 The section of the coastline relevant to Portsmouth City is addressed in the Policy Units 5API01 and 5API02 of the SMP. More important for the supporting habitats in the Chichester and Langstone Harbours SPA / Ramsar is Policy 5API01, which includes the frontage shared between Portsmouth City and Langstone

Harbour. The final policy option for this shoreline is 'Hold the Line', which is to maintain, sustain and improve the current sea defences in order to protect the residential, employment and transport infrastructure of the Portsmouth City conurbation. The policy acknowledges that holding the defence line will inevitably contribute towards the loss of intertidal SPA, Ramsar and SAC habitats. The policy acknowledges that 'these losses will need to be mitigated within the same designated area or compensated for elsewhere and delivered through the Regional Habitat Creation Programme'.

6.155 The SMP was also subject to HRA, which concluded that the plan would result in adverse effects on the site integrity of the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC. It was determined that the SMP would lead to the combined loss of 826ha of mudflat and saltmarsh habitats in these three Habitats sites over the coming 100 years. Furthermore, 10 foraging / high-tide roost sites for SPA / Ramsar waterfowl and waders would be lost. The HRA also confirmed that it would not be possible to mitigate this habitat loss. However, it was considered that there were Imperative Reasons of Overriding Public Importance (IROPI) despite the plan's adverse effects on Habitats sites. The HRA also identified that compensation opportunities at three sites existed with the potential to deliver 263ha of saltmarsh and mudflat habitat.

6.156 Policy PLP36 (Coastal Zone) of the emerging PLP stipulates that 'Development proposals in the Coastal Zone… will be permitted where they:… e) Are consistent with the Shoreline Management Plan and South Inshore and South Offshore Marine Plans.'. By referring to the SMP, which has undergone HRA and was adopted on the 15th December 2010, and the Flood and Coastal Erosion Risk Management Strategy (FCERM) which was also subject to HRA, the PLP ensures that the approach to the management of coastal defences is compliant with the Habitats and Species Regulations 2017 (as amended).

6.157 Coastal squeeze will arise from implementing SMP policy, and the Tipner West & Horsea Island East development (Policy PLP3) has therefore allowed for compensation for approximately 1ha of coastal squeeze in its compensation proposals for direct habitat loss at Portsmouth Harbour SPA/Ramsar. However, this stems from the SMP and Coastal Strategy process, rather than from the Local Plan process. With regard to proposals for Tipner West and Horsea Island East, it is noted that options that allow for potential new habitat creation (e.g. saltmarsh habitat through a strategy of No Active Intervention) could reduce coastal squeeze pressures. As such habitat creation opportunities for Horsea Island East and for the terrestrial SPA at Tipner West could have positive effects in this regard.

6.158 The Solent has recently undergone a review (the 'SMP-Refresh' project) and no changes are proposed to the policies and management approaches set out in the 2010 version. There are no current plans to formally re-write the SMP. As coastal defences are designed in detail (including taking account of any need to meet a higher standard of protection) those designs may result in a defence footprint change which exceeds that taken into consideration in the Coastal Strategy HRA. However, that depends entirely on the nature of the design (sheet piling for example would provide a higher standard of protection but not involve an increase in defence footprint) and is therefore a matter for planning applications.

Direct Habitat Loss from Solent & Dorset Coast SPA and Portsmouth Harbour SPA / Ramsar

6.159 During bird surveys for Tipner West and Horsea Island (PLP3) in 2021-22, four species for which Portsmouth Harbour SPA/Ramsar is designated were recorded. Grey plover, an SSSI designation species, were not recorded. In addition, a further 15 waders, 15 waterfowl and 22 other water bird species were recorded. Of these species brent goose, curlew Numenius arquata, oystercatcher Haematopus ostralagus, little egret Egretta garzetta and mallard Anas platyrhynchos were recorded using terrestrial habitats as well as those within the harbour. All other water birds were recorded in marine areas only. Brent geese overfly terrestrial areas but waders typically move around the Portsmouth Harbour SPA/Ramsar site following the coast or deep water channels, with the exception of those flying inland to forage on terrestrial areas.

6.160 Wader roost locations were identified within the Main Site Survey Area as follows:

- World War II slipways to the south of Horsea Island East;
- dilapidated concrete jetty in Tipner Lake;
- exposed shingle on the southern side of Tipner Firing Range;

- the M275 revetment in Tipner Lake;
- seawall to the west of Port Solent;
- Pewit Island within the Central Harbour Survey Area;
- Jetties within the western section of the Central Harbour Survey Area;
- Paulsgrove Lake;
- Tipner Lake east of M275; and
- Alexandrea Park Playing Fields.

6.161 Comparison of the percentage of peak mean recorded in 2019/20 and 2021/22 showed an increase in the percentage of peak mean of black-tailed godwit and dunlin recorded within the Main Site Survey Area in 2021/22. For brent goose and red breasted merganser however, there was a decrease in percentage of peak mean with fewer birds recorded. The percentage of peak mean decreased for all species within the Central Harbour Survey Area in 2021/2022, with a notable decrease of 533% for black-tailed godwit and 163% for dunlin. Grey plovers were not recorded within the Main Site Survey Area or Central Harbour Survey Area in 2021/22 but 73% of the percentage mean was recorded within the Central Harbour Survey Area in 2019/20. Most of the aquatic/intertidal parts of Portsmouth Harbour SPA/Ramsar also overlap with the Solent & Dorset Coast SPA. The terrestrial areas of Portsmouth Harbour SPA/Ramsar do not overlap with Solent & Dorset Coast SPA.

6.162 Other than new flood defences (discussed above), Policy PLP3: Tipner West & Horsea Island East allocates the delivery of 58,000m2 marine employment floor space, 814 to 1,250 residential dwellings and a bridge between Tipner West and Horsea Island East for the use of sustainable transport modes only. In association with marine employment, the policy states that ‘the deep water access to Tipner Point and the new marine hub quaysides will be maintained’. To ensure deep water access to the new marine hub quaysides, dredging of approximately 2.1ha of intertidal habitat within Portsmouth Harbour SPA/Ramsar site will be required, converting it to subtidal habitat. This will reduce the overall net extent of intertidal habitat available for bird roosting and foraging within the SPAs/Ramsar.

6.163 Other aspects of development delivery are likely, though not certain, to involve land-take from the SPAs/Ramsar site depending on how the development is designed for the planning application. These elements are the creation of the marine hub itself and the construction of the bridge. This is reflected in Figure 4.2 of the Local Plan which shows the allocation boundary for PLP3 and includes two areas of possible reclamation for employment use. Up to 0.5ha of subtidal habitat could potentially be lost if these possible areas of reclamation were realised. While the construction design for the bridge will not be determined until the planning application stage, one of the most common methods of bridge installation is to place piers in the subtidal and intertidal zone, on which the bridge deck is then situated. This would involve the loss of up to 0.3ha of intertidal habitat within the SPA/Ramsar.

6.164 In addition, delivery of the higher housing number could potentially involve loss of terrestrial habitat within the SPA/Ramsar boundary. This depends on the number of dwellings to be delivered, the detailed masterplan for the planning application and evidence of viability and feasibility. As a worst-case this could involve up to 3.6ha of terrestrial habitat south of the firing range that lies within the SPAs boundary and supports SPA birds particularly during high tide. This would only arise under one of the development options currently being considered by the project promoter (known as Option B) and is not an explicit requirement or inevitable outcome of Policy PLP3. The potential habitat loss identified is, however, substantially less than that identified in relation to the Reg 18 Local Plan, where as much as 28ha of land reclamation was proposed with the creation of a 'super peninsula'. The two options currently under consideration by the project promoter are shown here for illustrative purposes, but it is emphasised that this HRA assesses the likely significant effects of Policy PLP3 rather than any particular option for development.

Figure 5: Option A, formerly Option 14v2

Figure 6: Option B, formerly Option 9

6.165 Policy PLP3 clearly acknowledges the inevitable loss of intertidal habitat due to dredging for the deep water marine hub and sets out a requirement to avoid other SPA/Ramsar habitat loss or minimise the loss to that necessary to deliver a viable scheme: 'Except for the minimum dredging necessary to establish and maintain deep water access to the marine hub, avoid the loss of, or damage to, SPA/Ramsar habitats. If that is not viable or feasible, minimise such loss, or damage, to that required to enable the viable and feasible development of the site in line with the development quantums set out in this policy while protecting the integrity of international, national and local nature designations.' The allocation boundary in Figure 4.2 of the Local Plan explicitly limits the extent of policy-compliant habitat loss from the SPAs/Ramsar site in the event that any such loss (beyond that for the deep water channel) is necessary to deliver a viable and feasible development.

6.166 Clearly, the most important consequence of the Tipner Strategic Allocation would be habitat loss from the Portsmouth Harbour SPA / Ramsar and Solent & Dorset Coast SPA, resulting in the long-term loss of roosting and foraging habitat for black-tailed godwits, brent geese, dunlins and red-breasted mergansers and some loss of foraging habitat for terns. Development on the Tipner peninsula would also result in the loss of two Primary Support Areas namely the Tipner Range (P60) and the much smaller land parcel P76, which are functionally linked to SPAs / Ramsars in the Solent (see functionally linked habitat section earlier

in the report). However, the loss of functionally linked habitat is not uncommon in the UK (or the Solent) and is offset by improving the functional value of other land parcels in suitable locations (see 6.2.7 to 6.2.10 of this report), without triggering the derogation tests that apply to land within SPA boundaries.

6.167 Clearly direct loss of functionally relevant habitat within an SPA/Ramsar would constitute an adverse effect on the integrity of that site. Adverse effects on site integrity cannot be avoided or mitigated where there will be permanent loss of parts of a designated site that contribute to the achievement of its conservation objectives. In such cases, development proposals need to pass statutory derogation tests. These tests are discussed in Chapter 8 of this report.

6.168 It is therefore concluded that an adverse effect on the integrity of Portsmouth Harbour SPA/Ramsar site and Solent & Dorset Coast SPA will arise, but only due to habitat loss within the SPAs / Ramsar site. This cannot be avoided or mitigated without significantly altering or removing Policy PLP3: Tipner West & Horsea Island East from the PLP due to the inevitable need for 2.1ha of intertidal habitat loss from dredging for the marine hub, the likely need for 0.3ha of intertidal habitat loss for the bridge piers, and the possibility of up to 0.5ha of subtidal habitat loss for reclamation for marine employment and up to 3.6ha of terrestrial habitat in the southern part of Tipner West.

6.169 In addition to habitat loss, the process of land reclamation, which may arise to deliver the marine employment hub, has a wide range of other potential impact pathways on Habitats sites[91], including:

- Modification of the physical environment and hydrodynamics of the surrounding harbour and estuarine environment
- Changes to fine sediment deposition and resulting reduction in mudflats;
- Habitat alterations due to changes in sediment structure, resulting in changes to ecological community complexity and biodiversity;
- Burial and smothering of benthic communities due to sediment disposal;
- Increased turbidity as a result of sediment suspension (may affect functioning of photosynthetic organisms and / or visual predators);
- Potential increases in suspended particulate matter, resulting in the regression of sea grass beds; and
- Impacts on macrozoobenthos (defined as invertebrates over 1mm living on or in sediment) up to 2km from the reclamation site.

6.170 These other impacts identified in paragraph 6.169 above cannot be examined in detail at the Local Plan level because they require the details of engineering designs and construction methods. However, when a planning application is being prepared coastal process modelling will need to be completed to inform where such impacts may arise and whether they are likely to be significant. Any resulting effects will need to be mitigated, or as a last resort, compensated as part of finalisation of the Habitats site compensation strategy. It is not intended that the project will include sediment disposal within the harbour Habitats sites, except where specifically required for reclamation. Locations of sea grass beds, and marine habitat biotopes, have been mapped and macrozoobenthos surveys completed. It is not considered likely that these locations will be adversely affected by the project; however, coastal processes modelling will be completed to inform where such impacts may arise and whether they are likely to be significant.

6.171 A project-level HRA will be carried out for Tipner West and Horsea Island East at the planning application stage, to ensure that these impact pathways would not result in adverse effects on site integrity and that, where such a conclusion cannot be reached, the statutory derogations tests are met.

[91] Environmental impacts of land reclamation are summarised in a 2008 OSPAR report. OSPAR Commission. (2008). Assessment of the environmental impact of land reclamation. 37pp. Available at: https://www.ospar.org/documents?v=7123#:~:text=Land%20reclamation%20can%20have%20adverse%20effects%20on%20the%20marine%20environment.&text=Some%20impacts%20of%20land%20reclamation,(OSPAR%202008%2F2009a) [Accessed on the 03/11/2020]

7. Conclusions of the Appropriate Assessment & Recommendations

Introduction

7.1 This HRA assessed the potential implications of the emerging PLP on Habitats sites within 10km from the Portsmouth City boundary. Several sites directly abut the City, including the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar, the Solent Maritime SAC and the Solent and Dorset Coast SPA. Sites located further away were also assessed, including the Solent and Southampton Water SPA / Ramsar, and the Solent and Isle of Wight Lagoons SAC. The background sections on the Habitats sites and impact pathways identified that the following issues required assessment:

- Recreational pressure (in Habitats sites and functionally linked habitat);
- Loss of functionally linked habitat;
- Water quality;
- Water quantity, level and flow;
- Visual and noise disturbance from construction
- Atmospheric pollution; and
- Coastal squeeze.

7.2 Furthermore, the PLP is proposing a development on Tipner West & Horsea Island East linked by a bridge. These proposals are associated with further impact pathways, namely:

- Direct habitat loss from the Portsmouth Harbour SPA / Ramsar and Solent & Dorset Coast SPA
- Impacts of Tall Buildings / Structures on Flight Lines and Sight Lines

7.3 This section summarises the main conclusions and recommendations for policy amendments and further work to be undertaken with regard to these impact pathways. It is to be noted that adverse effects on site integrity cannot be excluded for some of these pathways, either because the Reg 19 PLP does not provide sufficient detail or because further work to inform a definitive assessment is being undertaken.

Recreational Pressure

7.4 The LSEs section and the Appropriate Assessment identified that the Portsmouth Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC would be subject to increased recreational pressure due to the allocation of 13,603 net new dwellings. However, it was determined that the existing Bird Aware Solent Recreation Mitigation Strategy (SRMS), which details a suite of mitigation measures to avoid adverse effects of recreation, is an adequate mechanism to protect Habitats sites in the Solent, although specifically for Tipner West & Horsea Island East (PLP3) and Fraser Range (PLP13) bespoke mitigation solutions were identified to be required alongside the delivery of Horsea Island Open Space. The SRMS has been devised to buffer the Solent region from recreational impacts of future housing growth. Furthermore, the emerging PLP makes adequate formal reference to this mitigation strategy in Policy PLP39: Biodiversity. Subject to meeting the requirements of the SRMS, it is concluded that the PLP will not result in adverse effects on the integrity of Solent's Habitats sites regarding recreational pressure. No further policy / supporting text is recommended for inclusion in the Local Plan.

7.5 Regarding the issue of recreational pressure in functionally linked habitats, a conclusion of 'no adverse effect' on site integrity was also reached. Firstly, some of the supporting habitats are unlikely to be desirable destinations for recreation. Secondly, the existing high levels of recreational usage of many functionally linked habitats (e.g. Southsea Common) do not appear to affect their ability to support SPA / Ramsar bird species.

Loss of Functionally Linked Habitat

7.6 Given its highly urbanised nature, greenfield sites in the Portsmouth City area are scarce. AECOM recommends that allocations should avoid the loss of SPA / Ramsar bird supporting habitats where possible, as suitable replacement habitat is not an inexhaustible resource. Given this, development proposals within the allocation boundaries should be directed away from any sites identified by the SWBGS.

7.7 The HRA notes that explicit wording has been be added to the policy text for the following Strategic and Allocated Sites:

- Tipner and Horsea Island East (Policy PLP3)
- Tipner East (Policy PLP4)
- Lakeside North Harbour (PLP5)
- St. James' and Langstone Campus (PLP8)
- Horsea Island Open Space (PLP9)
- Fraser Range (PLP 13)

7.8 It is concluded that the Plan would have no adverse effects on the site integrity of SPAs / Ramsars in the Solent.

Disturbance from Construction

7.9 Portsmouth City directly abuts several Habitats sites designated for waterfowl that is sensitive to visual and auditory stimuli. Therefore, there is a high risk that construction works carried out within a precautionary 300m distance from the SPAs / Ramsars will result in disturbance to qualifying birds. To minimise the potential for adverse impacts, AECOM recommends a range of measures to be deployed to mitigate visual and noise disturbance effects.

7.10 The supporting text for Policy PLP39 (Biodiversity) includes the following measures:

7.11 It is generally advised that construction work within 100m of relevant SPAs / Ramsars or functionally linked habitats known to support SPA / Ramsar waterfowl and / or waders should avoid the period October to March (inclusive) entirely.

7.12 Where construction works will occur in a precautionary 300m buffer zone around the Habitats sites, an assessment of noise and visual disturbance potential should be undertaken for individual planning applications. Where works may be disturbing and cannot avoid the October to March period, adequate visual and noise screening equipment should be used to shield bird sightlines and buffer them against noise disturbance. Noise shielding should be such that noise levels at receptors are limited to 70 dB (or below); in other words, an 'acceptable' dose of noise is attained at the birds.

7.13 For any construction works carried out within the Portsmouth Harbour SPA / Ramsar such mitigation measures will be insufficient if the work is undertaken during the core winter/passage period. In such cases, the construction programme should be timed to avoid the October to March overwintering period of qualifying SPA / Ramsar birds. Avoiding this sensitive period will mean that any adverse visual and noise impacts on the Portsmouth Harbour SPA / Ramsar are prevented.

7.14 However, in the first instance, AECOM recommends that development within the allocations is spatially distributed such that any potential visual and noise disturbance is minimised. For example, the St, James and Langstone Campus allocation is relatively large. Focussing much of the (re)development in the western part of the allocation, would minimise disturbance impacts on the supporting habitats P25, P23A and P23B. However, space constraints mean that such an approach clearly is not possible for other Strategic Allocations (e.g. Tipner).

Water Quality

7.15 The water quality is a significant issue in all of the Solent's marine Habitats sites, as demonstrated by Natural England's emerging guidance on achieving nutrient neutrality. The Appropriate Assessment determine that the Havant and Portsmouth WwTW discharges into the Chichester Harbour SSSI, part of the overarching Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC. Portsmouth Harbour SPA/Ramsar site and Solent & Dorset Coast SPA were also considered vulnerable. Therefore, the emerging PLP was determined to result in likely impacts on the estuarine and marine water quality, without mitigation.

7.16 A review of the PLP shows that it already refers to water quality in the Solent and the concept of nutrient neutrality in Policy PLP44 (Nutrient Neutrality in International Nature Designations). It states that ''D*evelopment proposals… will be permitted where they demonstrate through a nutrient budget that they secure Nutrient Neutrality through either offsetting, provision of direct and indirect mitigation measures, purchase of mitigation credits or a mixture of these*'. This policy text aligns the plan document with NE's requirement and places the onus on site promoters to ensure that there will be no net nutrient input to the Solent from future development.

7.17 Overall these sources of supply are providing credits equivalent to a total of 6,654.73KgTN/yr. When applied to the 20 year plan period to 2040 this gives the equivalent of 10.87 years' worth of nutrient credits available. The City Council may look to explore further sources of credit to improves its supply position. Therefore the City Council expects to have nutrient credits that go well beyond the end of the first five years of the Local Plan period when the Local Plan must be reviewed. Moreover, it is noted that the UK Government is planning to introduce proposals which would limit the need for nutrient neutrality to be delivered at the planning application level, with strategic solutions independent of the planning process taking their place.

7.18 Since the PLP is supported by calculations that demonstrate the nutrient surplus and mitigation requirement, and sets out the intended mitigation solution for at least the first 5 year plan period (since Local Plans must in any event be reviewed every 5 years), adverse effects of the plan on the integrity of the Portsmouth Harbour SPA / Ramsar, Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC regarding water quality can be excluded, in-combination with other plans and projects.

Water quantity, level and flow

7.19 The emerging PLP will result in an increased demand for potable water in Portsmouth City, which will be delivered by Portsmouth Water, the company responsible for the public water supply in the wider Portsmouth area. However, an appraisal of Portsmouth Water's WRMP highlights that the supply of development in the region (including growth in Portsmouth City) does not involve any increases to licensed groundwater abstractions or the exploration of new water resources. Therefore, in line with the WRMP HRA, it is concluded that the emerging PLP will not result in adverse effects on Solent's Habitats sites regarding water quantity, level and flow, in-combination with other plans and projects. As such, no additional policy wording is recommended for insertion in the PLP.

Atmospheric Pollution

7.20 The Appropriate Assessment of atmospheric pollution highlighted that areas of saltmarsh are the only habitat that could be subjected to increased nitrogen deposition as a result of two-way commuter traffic associated with the PLP. Areas of saltmarsh within the following Habitats sites lie within 200m of likely commuter routes for Portsmouth City residents:

- Approx. 164m from the A32 in the Portsmouth Harbour SPA / Ramsar
- Approx. 36m from the A27 / A3 interchange in the Chichester and Langstone Harbours SPA / Ramsar
- Adjacent to the A2030 in the eastern part of Portsmouth City in the Solent Maritime SAC (note that this habitat was initially identified as 'perennial vegetation of stony banks' but later confirmed to comprise a saltmarsh community)

7.21 Given the proximity of sensitive habitats to the identified roads, further traffic modelling and, if required, air quality modelling was recommended by AECOM to Portsmouth City Council. This work has been

commissioned and is currently being undertaken. The findings of the traffic modelling exercise and any requirement for further air quality modelling, will be set out in the public consultation version of the PLP.

Coastal Squeeze

7.22 Any potential of the PLP to exacerbate coastal squeeze was also assessed. The maintenance and replacement of coastal defences along the Portsmouth City coastline is dictated by the North Solent Shoreline Management Plan (SMP). This identifies an approach of 'Hold the Line' for coastal defences relevant to Portsmouth, meaning that no changes to the existing structures are anticipated. Policy S10 (Coastal Zone) of the emerging PLP stipulates that '*new, or replacement coastal defence schemes should be consistent with the management approach for the frontage presented in the relevant Shoreline Management Plan; and demonstrate that there will be no material adverse impact on the environment*'. By referring to the SMP, which itself has undergone HRA and was adopted in December 2010, the PLP ensures that there will be no adverse effects on the integrity of Habitats sites sensitive to coastal squeeze.

Impacts of Tall Buildings / Structures on Flight Lines and Sight Lines

7.23 AECOM considers that there is a risk of new urban development allocated in the PLP to affect the sight lines and flight lines of SPA / Ramsar birds navigating the wider Solent area.

7.24 This impact pathway will be assessed further at the stage of individual planning applications, when specific design criteria (e.g. building dimensions, fabric and lighting schemes) are available and a further project-level HRAs will be undertaken. Given that the PLP is a strategic planning document that provides insufficient detail to assess this impact pathway, it is concluded that the Plan will not result in adverse effects on the site integrity of Habitats sites designated for waterfowl and waders.

7.25 Policy PLP39 includes the following text "The design of buildings including its height and lighting schemes should be such that there are no adverse effects on sight lines and flight lines of birds in Habitats sites or functionally linked habitats. Buildings should also be designed such that the risk of bird collisions is minimised". Taken in combination with the requirement for a project-level HRA at the planning application stage it is considered the plan presents a sufficient policy framework to ensure no adverse effects on integrity arise.

Direct Habitat Loss from Solent & Dorset Coast SPA and Portsmouth Harbour SPA / Ramsar

7.26 An adverse effect on the integrity of Portsmouth Harbour SPA/Ramsar site will arise due to the inevitable need for 2.1ha of intertidal habitat loss from dredging for delivery of the marine hub, the likely need for 0.3ha of intertidal habitat loss for the bridge piers, and the possibility of 0.5ha of subtidal habitat loss for reclamation for the marine hub and up to 3.6ha of terrestrial habitat loss from land to the south of the firing range.

Conclusion of Appropriate Assessment

7.27 With the amendments recommended above and now included in the Local Plan, it has been possible to conclude that no elements of Portsmouth Local Plan will have an adverse effect on the integrity of any Habitats sites, either alone or in combination with other plans or projects, except for the redevelopment of Tipner peninsula as set out in Policy PLP3: Tipner West & Horsea Island East. With this policy remaining in the Local Plan it is therefore necessary for the derogation tests referenced in Chapter 2 to be explored.

8. Derogations

Introduction

8.1 Section 7 contains the appropriate assessment and identifies that Policy PLP3: Tipner West & Horsea Island East will have an adverse effect on the integrity of Portsmouth Harbour SPA/Ramsar site through permanent habitat loss. This section of the report therefore assesses Policy PLP3 against the necessary derogations to consider whether the Local Plan can be adopted with Policy PLP3 as written.

8.2 The Test of Likely Significant Effects and Appropriate Assessment are fundamentally ecological technical assessments and have therefore been undertaken by AECOM's technical specialists. The statutory derogations tests are somewhat different. AECOM's technical specialists are well placed to assess the suitability of compensatory habitats and have done so in the analysis at section 8.4 below. However, the existence or absence of alternative solutions and IROPI are matters which require a mix of planning judgement and ecological expertise. Consequently, for Sections 8.2 and 8.3 of this report AECOM has worked closely with Portsmouth City Council town planners notably Mr Nick Lloyd-Davies, BA(Hons) DipTP MRTPI, New Neighbourhoods Team Leader.

8.3 The overarching objective of the policy for the purposes of HRA consists of the project objective, the vision and policy PLP3 itself. Policy PLP3 is presented in full in Appendix B. The vision given in the Local Plan is: *'In 2040, Tipner West & Horsea Island East will form a new gateway to the City along with Tipner East and will be home to a new healthy and happy community. There will be a thriving new marine business hub that provides both jobs and opportunities for lifelong learning. People will live in good quality homes that are carbon neutral and will enjoy the new open space on Horsea Island. They will make fewer journeys by car and instead will make use of new and improved public transport connections and infrastructure, including a bridge to the mainland. New climate change resilient sea defences will defend the community alongside the existing residents of north Portsea Island. Historic land contamination will have been prevented from leaching into the Harbour. The Harbour's nationally and internationally designated saltmarsh and mudflat supporting populations of Brent Geese and wading birds will be cherished and protected, whilst the site's naval heritage will be positively enhanced in the public interest. The whole Tipner peninsula will be home to a community where residents, workers and visitors co-exist in harmony with nature'.*

8.4 The project objective as cited in the Local Plan is '*To create a marine employment hub in the Solent region with access to deep water, and of sufficient scale to enhance and expand the marine business cluster, along with critical infrastructure, and sufficient housing to help enable delivery of the development as well as support the growth in the marine workforce'.*

Alternative Solutions

8.5 Consideration of alternative solutions is required at both the strategic planning and project level. At the project level, the consideration of alternative solutions will necessarily have to explore in more detail the alternative approaches to development of the site, including site layout options, massing and quantum. Alternative solutions are discussed here at the strategic planning level and in relation to the following objectives of the proposed allocation:

- Sea Defences and Site Decontamination
- Marine Employment Hub
- Bridge
- Enabling development in the form of Housing

8.6 This section does not consider alternative solutions to the provision of sea defences *per se* because, as discussed in section 6.9 of this report, habitat loss from coastal squeeze due to sea defences is a consequence of the North Solent Shoreline Management Plan (SMP)[92] and associated coastal strategy[93], rather than the Local Plan and has been subject to its own separate derogations case (supported by the

[92] Shoreline Management Plan - Shoreline Management Plan (northsolentsmp.co.uk)
[93] https://environment.data.gov.uk/shoreline-planning/unit/SMP13/5API01
https://coastalpartners.org.uk/project/portsea-island-coastal-strategy

Secretary of State). However, the provision of sea defences and site decontamination are considered together below because the delivery of sea defences in line with the SMP is likely contingent on the delivery of Policy PLP3.

8.7 While alternative solutions are assessed individually for each of the objectives set out above, it is recognised that the allocation is a “package deal” which is very unlikely to be capable of delivery in a disaggregated manner. In particular, the financial viability of the allocation is dependent on cross-subsidy from housing and the economics are such that it is very unlikely that disaggregation of the marine hub element from the housing element, with delivery of the housing elsewhere, could provide the same or a similar level of cross-subsidy.

8.8 The City Deal[94] grant did not provide for full Government funding of these works, with the Government grant (£48.75m) (and associated MoD Land transfer provisions) to be accompanied by estimates of local capital investment of £42.7m and a further £87.8m in developer contributions.

8.9 Proposals for the development of Tipner West and Horsea Island East have consistently shown a significant financial deficit to varying extents. This is principally by reason of the cost of significant enabling works required including sea defences, land raising for flood prevention and site decontamination.[95] Furthermore, with approximately 4.9ha of the site area reserved for marine hub development, the area available for (higher value) residential is limited. The project aspiration had been to get the financial viability position to a level that is as close as possible to £30k subsidy per dwelling, as this has been deemed a level capable of supporting further Grant funding from Homes England based upon direct discussion between the promoter team and Homes England.

8.10 The PLP3 allocation is substantially reduced in scale from the previous 'Super Peninsula' proposal, which involved substantial land take from the SPA/Ramsar site of up to 27ha of reclamation and was ruled out by the City Council in October 2022 on account of the permanent loss of, and significant harm to, the integrity of the relevant Habitats sites. However, the result of rejecting this option is that project viability is more challenging.

8.11 Full Council took the decision in December 2023 to shortlist two options (Options A and B) as depicted at Figures 5 and 6 above. Both shortlisted options are (subject to evidence on viability and feasibility) potentially consistent with the PLP3 allocation and assume no more than 0.5 ha of subtidal reclamation from the harbour, with option B also developing the terrestrial SPA/Ramsar to the south of the Firing Range on Tipner West. It should be noted that neither Option is specifically committed to in Policy PLP3. In any event, taking a precautionary approach, the HRA is undertaken with reference to the maxima of the ranges outlined in the policy (i.e. 1,250 homes).

8.12 Notwithstanding the lengthy shortlisting process during 2023, the relative financial position of the promoter’s two remaining options A & B (based upon information available at the time of writing this report) remains one of significant viability deficit:

- For Option A (815 homes; 58,000sq m marine hub; no development of the terrestrial SPA/Ramsar; circa 0.5ha of reclamation) - this amounts to circa £107-£116m deficit (this assumes £22k-£24k Homes England grant per dwelling);
- For Option B (935 homes; 58,000sqm marine hub; development of 3ha of terrestrial SPA/Ramsar; circa 0.5ha reclamation) - this amounts to circa £50m-£74m deficit (assuming Homes England grant of £29k per dwelling).

8.13 Further discussions are ongoing between the Council and central Government to explore opportunities to reduce the deficit, and there is some optimism that the viability case can be improved, but it currently appears unlikely that any policy-compliant delivery of PLP3 will be possible without significant subsidy.

8.14 The result is that the assessment of alternative solutions to each element of the proposal, as conducted below, is somewhat theoretical. The financial reality is such that it is likely the allocation will be delivered as a package or not at all. Severing or disaggregating individual components from the package (in particular

[94] https://www.gov.uk/government/publications/city-deal-southampton-and-portsmouth
[95] Promoter viability studies do not currently allow for costs of bridge construction. They include the estimated cost of compensatory habitat, including at HIE.

the co-located housing element which is the primary source of cross-subsidy funding) is very likely to result in a significant increase in the viability deficit and undermine the delivery of the project objective.

Alternative solutions to the flood prevention and sea defence elements of the Tipner West & Horsea Island East allocation

8.15 A key feature of the Tipner West & Horsea Island East strategic allocation is the enablement of works to bolster existing sea defences to provide protection from inundation to the Stamshaw area of Portsea Island and protection from leachate contamination to Portsmouth Harbour and its nature conservation sites. Relevant authorities in England and Wales have a duty to have regard to the requirements of the Habitats Directive and the Wild Birds Directive, including the obligation to take steps to avoid pollution to, or deterioration of, protected habitats. As such, there is a need to ensure the effective protection of Portsmouth Harbour from leachate contamination. This section outlines relevant evidence relating to the absence of alternative solutions which could deliver that protection.

8.16 The Portsmouth Harbour and SPA/Ramsar sites are covered by 'Hold the Line' policies within the adopted North Solent Shoreline Management Plan 2010 (SMP)[96] which was subject to Appropriate Assessment and a positive Derogations decision in April 2011[97]. The 'Hold the Line' policy extends for all three 'Epochs' covering a 100-year period (Epoch 1: 0 to 20 years; Epoch 2: 21-50 years; Epoch 3: 51-100 years). 'Hold-the-Line' means that it is necessary to maintain or upgrade the level of protection provided by existing coastal defences. The SMP has undergone recent review, and no formal changes to policy or management strategies are currently envisaged with regard to the 'Hold the Line' approach for Portsea Island. As site conditions are not considered to have materially changed since the confirmed positive IROPI decision in April 2011, strong weight can be placed on the policies within the SMP.

8.17 The SMP covers the 386km shoreline from Selsey Bill to Hurst Spit including Southampton Water and Portsmouth, Langstone and Chichester Harbours. The majority of these harbours and existing sea defences are covered by/adjacent to designated Habitats sites forming part of the National Site Network. The Tipner West and Horsea Island East landmass edge comprises a focused policy cell 5aP101 (Portsea Island) in the SMP. The consideration of alternatives to the 'Hold the Line' policy in the SMP HRA therefore remains relevant to the consideration of alternative solutions to the flood prevention/sea defence elements of the Tipner West & Horsea Island East allocation.

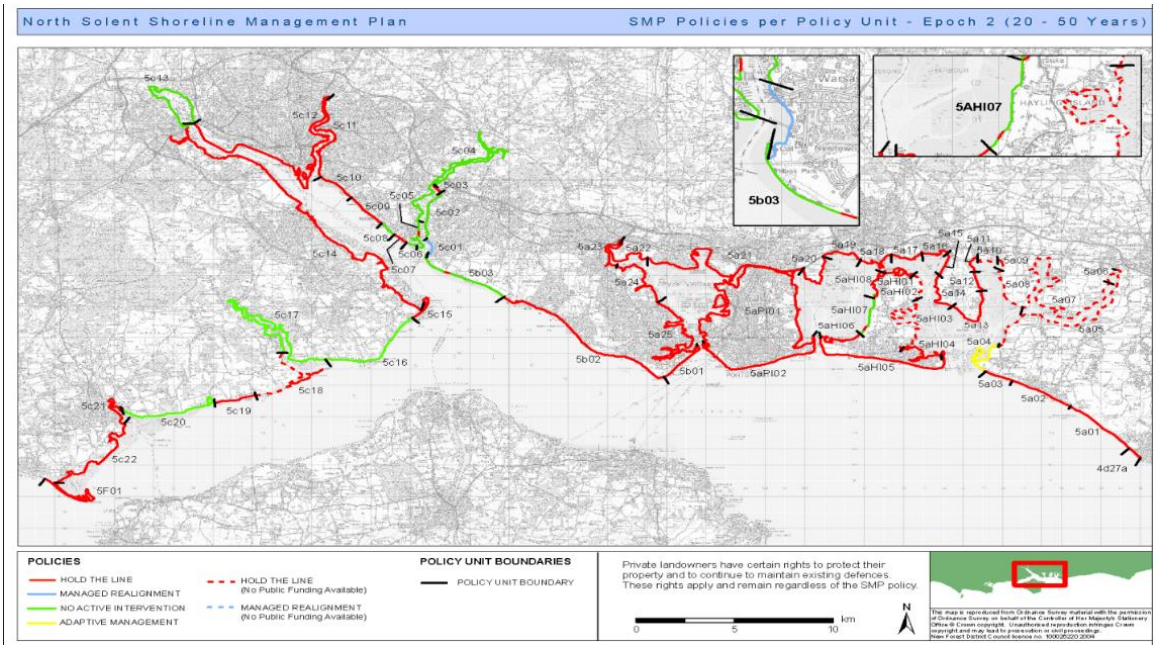


Figure 7: Extract from North Solent SMP, showing Hold the Line policy cells.

[96] Shoreline Management Plan - Shoreline Management Plan (northsolentsmp.co.uk)

[97] North_Solent_SMP_IROPI_decision_confirmation.pdf (northsolentsmp.co.uk)

No Active Intervention

8.18 The No Active Intervention alternative solution as set out in the SMP considered the implications for Portsea Island as a whole. This would comprise Portsmouth City Council ceasing any coastal defence works on Portsea Island. The existing defences would gradually fall into decline. In the longer term there would be extensive flooding in two flood risk areas on the island, together with further flooding in a number of other locations adjacent to the coast. In addition to the direct risk of flooding to human health, this policy would affect large residential areas as well as commercial, industrial, military, harbour and infrastructure interests. The number of residential properties at risk would be at least 208 (Flood zones 2 and 3), of which 162 would be in Flood Zone 3 (see Figure 8 below). Historical assets including Scheduled Monuments, listed buildings, conservation areas and other heritage interests would also be affected. For Tipner West and Horsea Island East, this would result in the flooding of five Grade 2 Listed assets.

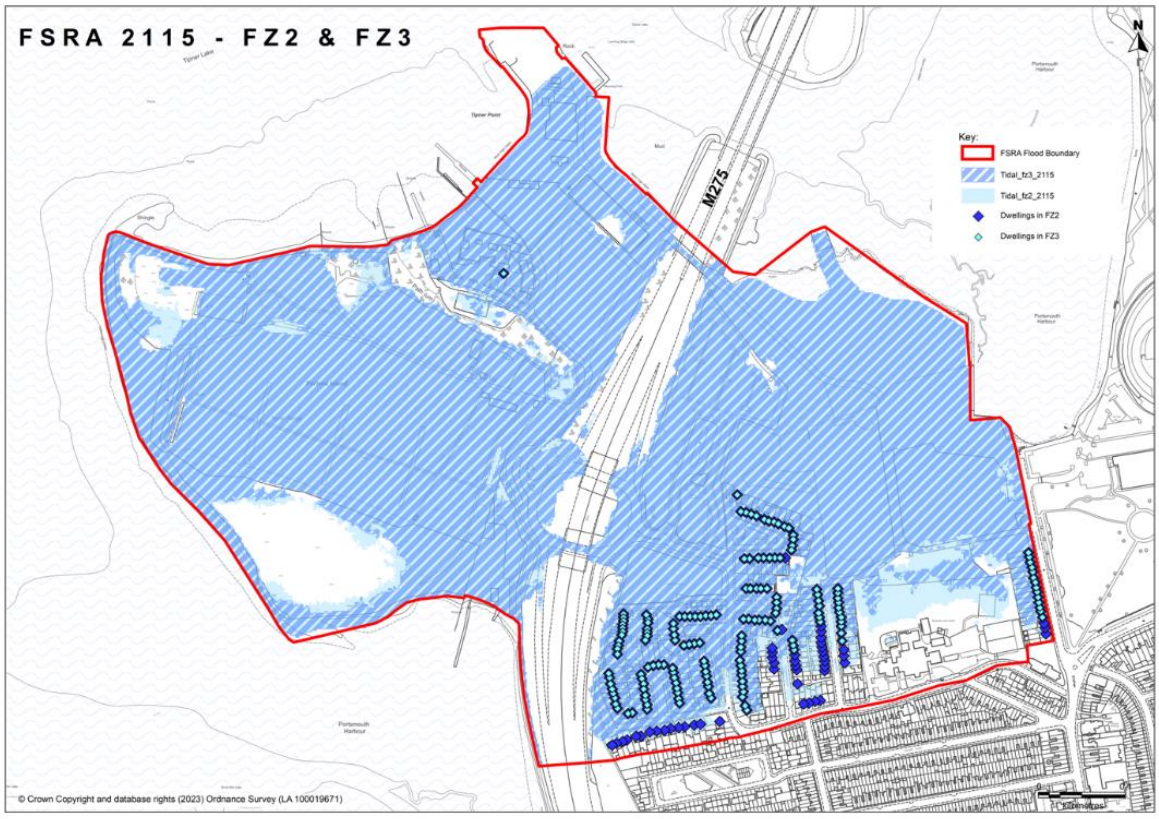


Figure 8: Flood Extent 2115[98]

8.19 Under a 'No Active Intervention' policy, erosion would also occur whenever the existing defences reach the end of their residual lives. There are a number of locations around the island where this erosion would be particularly significant, notably at the former Tipner Firing Range. Although erosion would be relatively minor at this location due to the particularly sheltered coast, the heavily contaminated nature of this promontory means that any erosion would be a notable threat to the natural environment interests in the harbour.

8.20 Much of the coastal margin of the wider Portsea island has been reclaimed from the sea with potentially contaminated material. This includes Tipner West. Flooding would release contaminants whilst defence failure and erosion would lead to contaminated material falling into harbour waters, threatening natural environment interests. There would also be the un-mitigated or non-compensated loss of core functional supporting habitat on the Tipner firing range, as identified in the Solent Waders and Brent Goose Strategy[99]. The impact of non-intervention is considered to be both socially and environmentally unacceptable.

[98] Strategic Flood Risk Assessment, PfSH 2016); https://www.portsmouth.gov.uk/services/development-and-planning/planning-policy/strategic-flood-risk-assessment/
[99] Solent Waders & Brent Goose Strategy – coastal bird conservation, waders and brent geese data and mapping (wordpress.com)

Do Minimum

8.21 In the absence of the Portsea Island strategy as set out in the SMP, there would be no planned improvement to the flood defences but there would be continued maintenance and urgent repair of defences. In this scenario, defence works would be identified purely on the basis of immediate need, determined by emergency failures (breach or overtopping). The lack of planning and foresight in the delivery of such flood risk management would result in isolated, but increasingly frequent, flood events through breaches and overtopping, which could lead to social and commercial disruption, loss of confidence by developers/investors, widespread outward migration of people/businesses and potential loss of life. In the long-term, emergency patching would cease to become effective and defence standards, such that impacts would ultimately be similar to those of the 'No Active Intervention' scenario.

Managed Realignment

8.22 The Portsea Island Coastal Strategy Study Statement of Case in respect of the effects on European Sites June 2009 (produced by Halcrow on behalf of the Environment Agency)[100] notes that "*..the deliberate set-back of defences around Portsea Island is not practicable because all coastal land is occupied by buildings, public open space and/or contaminated sites such as landfills."* The latter is particularly the case at Tipner. The same document goes on to point out that *"..an initial assessment (Halcrow, 2004) was undertaken to determine the costs associated with remediating areas of contamination that would be affected by coastal flooding in the event that defences were realigned or not maintained. These assessments indicated that remediation costs for Portsea Island would be in the region of £750 million. These costs are far in excess of the potential costs associated with developing new sites for compensatory habitat in noncontaminated areas and demonstrate that localised retreat options are not economically viable."*

Alternative delivery of “hold the line” at Tipner West & Horsea Island East

8.23 The Shoreline Management Plan establishes a policy to 'Hold the Line' of sea defences around the existing Tipner West and Horsea Island East landmass but does not provide funding to support the delivery of these defences. The estimated cost of strengthening or replacing the existing sea defences at Tipner West and Horsea Island East is £35m. The Council does not currently have funds available to deliver the sea defences from its core budget: see recent reports to Full Council on the allocation which highlight the significant fiscal limitations upon the Council, governed by the Prudential Code[101].

8.24 Funding for flood and coastal erosion risk management (FCERM) is available from a variety of sources:

- The Environment Agency (EA) manages some risk directly, and also provides capital grants to local authorities for flood defence improvements. The EA currently has no plans to carry out flood risk improvements at Tipner West & Horsea Island East, and there is no current prospect of grant funding from the EA.
- Defra and the EA offer partnership funding to local communities, developers, businesses and local authorities who can raise funds towards a coastal defence project. There is currently no local community or business likely to pitch for partnership funding and the Council does not currently have funds available to offer a share of partnership funding. Even if it could, partnership funding from Defra/the EA is not guaranteed.
- Defra offers a flood recovery grant but – if available – this would deliver a modest sum in the context of the full costs of the flood defences.

8.25 The result is that there is no current prospect of external funding, or core-budget Council funding, to deliver the necessary flood defences. The Council also has no current mechanism to raise funds for the flood defences through the CIL and any new mechanism would be unlikely to be raise sufficient funds early enough in the plan period. The City Deal recognised that the cross-subsidy of development income, in particular from residential development, was necessary to assist in the delivery of the sea defences at Tipner West alongside the 'pump-priming' grant from Government.

8.26 Accordingly, the Council’s strategy has been to secure delivery of necessary sea defences through developer-funding as a condition of the development of land: see Tipner East as another example of where sea defences are being delivered by way of s.106 developer funding.

[100] see CDL at: https://www.portsmouth.gov.uk/newlocalplanevidence
[101] https://democracy.portsmouth.gov.uk/documents/s50877/240223%20-%20Tipner%20Cab%20update%20FINAL.pdf

The Tipner West & Horsea Island East allocation

8.27 The new flood defences required under Policy PLP3 will enable the development of this strategic site and thus fulfil the Local Plan vision for a new healthy and happy community. New climate change resilient sea defences will defend the community alongside the existing residents of north Portsea Island. And the new sea defences will provide effective protection to the Portsmouth Harbour SPA/Ramsar site from the risk of leachate contamination, consistent with the need to ensure the effective protection of SPAs from pollution.

Alternative solutions to the site decontamination elements of the Tipner West & Horsea Island East allocation

8.28 The provision of sea defence infrastructure and site decontamination around Tipner West & Horsea Island East delivers a number of clear benefits, one of which is the prevention of leachate contamination from the site to the waters of Portsmouth Harbour and the protected habitats that depend upon it.

8.29 There are not considered to be any feasible alternatives to this work. As evidenced in geotechnical site investigations undertaken on behalf of the PCC Promoter team[102] significant site contamination exists and includes, inter alia, asbestos, PAHs, metals and unexploded ordnance, especially so on the Tipner West landmass. The contamination is present and if nothing is done to address it, over time these contaminants would leach directly into the harbour waters and risk significant harm to the integrity of the SPA and Ramsar habitat, given the modelled flooding risk for the site. Sea defences and decontamination of the land must therefore take place in tandem if it is to be developed for future land uses, especially for any human habitation. The land raising required across most of the site, which would serve to provide protective capping to much of this contamination, is the principal method of mitigation recommended in these reports. The cost of such works, including necessary land raising, has been estimated to be in the order of £15m.

8.30 As above, there is no core Council funding available to cover the cost of the decontamination work and no current prospect of any grant funding, notwithstanding the requirement to take steps to protect the Harbour from pollution.

8.31 One alternative solution could comprise the diversion of capital expenditure to the decontamination of the land only rather than to combine sea defences and decontamination, thereby removing leachate risks to the protected habitats of the Harbour and potentially allowing for a managed realignment. However, this has been expressly discounted in the Shoreline Management Plan and in reality, the incurring of such works in the absence of concurrent or preliminary sea defences would be of limited public or environmental benefit in the longer term where modelling makes it clear that the whole Tipner peninsula would be flooded under a 0.5% Annual Exceedance Probability scenario[103]. This would represent a significant dereliction of duty by the City Council, not least as lead local flood authority. As also recognised in the City Deal award[104] Government has stipulated a commitment for the City Council to deliver both sea defence construction and site decontamination in tandem, in readiness for development.

8.32 The decontamination works proposed as part of the Tipner West & Horsea Island East allocation will, in conjunction with flood defences, protect the Harbour from contaminant leachate and will enable the development of this strategic site to fulfil the Local Plan vision for a new healthy and happy community.

Alternative solutions to the Marine Employment Hub element of the Tipner West & Horsea Island East allocation

8.33 The marine employment hub allocated in Policy PLP3 of the Local Plan would involve the dredging of approximately 2.1ha of intertidal habitat to achieve a deep water channel and could (depending upon viability and feasibility at the planning application stage) lead to the loss of up to 0.5ha of intertidal habitat within the SPA/Ramsar site, through land reclamation. As set out in Policy PLP3 any land reclamation will only be supported by the Council if it is essential to the viability or feasibility of the overall proposal. At the strategic land-use planning level, the alternative solutions to be considered are:

- Do Nothing

[102] DRAFT WSP Technical Notes: "Tipner West Outline Remediation Approach" (Feb 2024) and "John Henry Pounds Contamination Summary and Listed Buildings" (Feb 2024)
[103] https://democracy.portsmouth.gov.uk/documents/s41718/APP%20C%20-%20211126-%20TRP%20-%20Full%20Council-%20Report%20Dec%202021.pdf
[104] https://www.gov.uk/government/publications/city-deal-southampton-and-portsmouth

- Deliver at an alternative location (within the Solent sub-region)
- Disaggregation of the proposed marine employment hub; and
- Alternative locations on the Tipner peninsula.

Do Nothing

8.34 A 'Do Nothing' scenario will not deliver the plan objective because no new (market-led) marine employment will occur on the site. Furthermore, it will squander one of a limited number of critical waterfront marine employment sites that have been identified by the Solent LEP (now "Solent Partners") as being capable of transitioning to marine employment, thereby undermining national and regional strategies aimed at expanding the marine sector.

8.35 Extensive work has already been undertaken on behalf of the project promoter team by Marina Projects Limited (MPL) and is captured in their report "*Marine Employment Alternatives, Tipner Regeneration Programme, July 2020*"[105]. The MPL report referenced findings from the Solent LEP report "*Maritime Futures: Solent Waterfront Sites* (2015),[106] noting that many of the Solent waterfront sites (identified in Fig 14 below), including V*estas, Daedalus* and *Kingston Marine Park* are located next to very shallow water and are, unlike at Tipner West, unable to provide full tidal access. The Maritime Futures report was commissioned as a result of concerns raised by marine and maritime businesses that valuable waterfront land was being lost to alternative development, in particular to residential uses. It concluded that, of 97 waterfront sites studied, a total of 23 are ranked as 'Tier 1' (23.7%), the majority are established use without potential for growth and only four "Tier 1" sites remained under-developed for marine and maritime use. This equates to just 4.1% of the total number of waterfront sites across the Solent region.

8.36 The MPL report concludes that only the Tipner West site meets all core criteria in terms of site area, full deep water tidal access, boat lifting facility of 600-700 tonnes, sufficient open yard storage, up to 58,000sq m marine employment space, a total site area of 9-10ha and ultimately comprises a potential marine employment hub of regional significance.

8.37 For the avoidance of doubt a Do-Nothing scenario, in respect of the marine sector elements, will lose the ability to:

- provide 1,900 Full Time Equivalent jobs on-site that would be provided by the proposed development;
- utilise a critical marine employment opportunity that has the attributes to deliver strategic marine sector growth through development at the site;
- address local deprivation through employment and skills growth as well as meeting housing need; and
- enhance marine sector skills.

Deliver at an alternative location (within the Solent sub-region)

8.38 In respect of the consideration of alternative marine hub locations, the MPL report and the Marine Futures report highlighted that an alternative must be in the Solent sub-region to meet the identified project needs, objective and address local/regional policy delivery. Furthermore, the national and regional policy support makes the case strongly that the Solent has an established reputation as the UK's centre of excellence for marine and maritime industries.

8.39 The 2016 LEP Waterfront Assets Register was compiled to identify and assess existing sites in order to inform policy makers, including local planning authorities in preparing their development plans. The report notes the importance for strategic planning and identifies a total of 97 sites with a combined area of 1,730 hectares used or available for waterfront employment in the Solent area. Importantly, these sites are located within 7 clearly defined "clusters" across the region. Of this supply:

[105] See Appendix B at https://democracy.portsmouth.gov.uk/documents/b14699/Tipner%20West%20Full%20Council%20Update%20-%20Appendices%2006th-Dec-2021%2013.00%20Cabinet.pdf?T=9

[106] https://solentlep.org.uk/media/1341/maritime_futures_-_solent_waterfront_sites_-_169_15_.pdf

- only 100.7ha (less than 6%) was undeveloped waterfront land and spread across several sites.
- only around 10ha (0.5% of the total) is undeveloped waterfront land with permanent waterfront access (applying the report's definition), again spread across several sites.

8.40 The LEP register also undertook an assessment for each of the waterfront assets based on three defined criteria: (1) Marine Access, (2) Presence of Marine & Maritime Activities and (3) Development Potential. Tipner West was identified in the site's register as a 250,000m^2 (25ha) site that has been categorised as a first tier "Prime Site" within Portsmouth Harbour. As noted, the register defines "Tier 1" as "sites of prime importance for marine & maritime activities within the Solent region". It is particularly pertinent that of the 97 waterfront sites identified by the register, only 4 such sites were identified as being under-developed for marine and maritime use, these being:

- Tipner West
- Spitfire Quay, Southampton
- Lower William Street, Southampton; and
- Vestas Technology Park, Newport, Isle of Wight.

8.41 The LEP study also identified 6 further Tier 1 sites, already established in marine use but with potential for growth, these being:

- Royal Clarence Yard, Gosport
- Daedalus Entreprise Zone, Lee-on-the-Solent
- Centenary Quay, Southampton
- Marchwood Industrial Park, Southampton
- Venture Quays, Cowes, Isle of Wight; and
- Medina Yard, Isle of Wight.

8.42 In December 2019, further assessment by MPL of potential alternative locations added a further 4 sites to this list which comprised limited vacant land or otherwise unavailable:

- Priddy's Hard, Gosport
- Fawley Waterside, Southampton
- Baker's Wharf, Southampton; and
- Eling Wharf, Southampton.

8.43 However, several of these sites were either too small (being around 2ha), lacked permanent water access (drying at Mean Low Water Springs (MLWS))WS), distant from deep water and with no means to get vessels ashore. The outcome of the 2019 MPL assessment is summarised in Table 4.

Attribute	Do Nothing	Tipner	Royal Clarence Yard	Centenary Quay	Vestas Newport	Fawley Waterside	Marchwood Industrial Park	Daedalus	Kingston Marine Park
Existing depth (Chart Datum)	n/a	-3m	-4m	-2m	+1.5m	-1.5m	-3m	N/A	+4m
Available site area (ha)	n/a	9	2.31	3.18	3.75	6	6.2	83	6
Deliver full tide access	x	✓	✓	✓	x	x	✓	x	x
Develop a large boat lift facility in the order of 600-700 tonnes	x	✓	x	x	x	✓	✓	x	x
Ensure an appropriate level of open yard storage	x	✓	x	x	x	✓	x	✓	x
Provision of circa 58,000m^2 marine employment space	x	✓	x	x	x	x	x	✓	x
Site area 9-10Ha	x	✓	x	x	x	x	x	x	x
Provide a regionally significant marine employment hub	x	✓	x	x	x	x	x	x	x

Table 5: Alternative Solent marine hub sites (MPL, 2019)

8.44 While the MPL assessment was prepared on behalf of the project promoter team, it is well evidenced and reasoned. It is also supported by the independently published Solent LEP report. Together they suggest that the Tipner West and Horsea Island East site is the only site that can deliver a regionally significant marine hub, addressing identified shortcomings in the Solent in terms of deep water access, site area, boat lift facility, open yard space and scope for around 58,000sqm marine employment floorspace in line with City Deal aspirations.

Disaggregation of the marine hub site components

8.45 Disaggregating the various components of such a hub would risk the loss of the above immediate inter-relationships and result in the disbenefits identified in the majority of other marine sites considered in the Solent LEP report. Indeed, it is the very purpose of the Southampton and Portsmouth City Deal to "*maximise the impact of marine and maritime assets*" and "*…to deliver 58,000sq m of employment space for the growing marine and advanced manufacturing sectors of the Solent economy*".[107] This is in recognition that the marine and maritime sector accounting 20% of the Solent functional economic area and for 17% of UK gross value in the sector nationally.

8.46 Consultation with marine sector stakeholders, as noted in the MPL *Marine Sector Market Summary* highlighted that marine businesses invariably require a range of facilities, including production bays, office space, indoor and outdoor storage, space for craneage, wide range of power supply, space for deliveries as well as deep water access and the various sectors attracted by the potential for co-located sub-sector businesses, such as repair/refit, marine technology, large composites, race boats, learning resource and other bespoke businesses at the forefront of the growing marine sector. The ability to combine this range of facilities and business categories with the capacity for the lifting and holding of vehicles above 200 tonnes, was seen as particularly attractive and the co-location of such marine functionality would maximise supply chain opportunities and exponentially spur growth in the sector.

8.47 It should also be noted that co-location with non-marine land uses would give rise to additional risks associated with noise, access and negative implications for economies of scale, noting the 'Agent of Change' principle[108] applying in this scenario. This means that developments of new sensitive land uses (residential) introduced into locations comprising noise-generating land uses will be expected to compensate those existing land use occupiers against potential future claims of disturbance by residents and/or to cover the cost of noise mitigation measures to secure acceptable living conditions.

8.48 These are just a few of the many reasons why dis-aggregation of the proposed marine hub would continue to frustrate the growth needs of the UK's marine sector. These will be set out in more detail in the project-level HRA in due course. It also shows why the opportunities afforded at Tipner for a world class marine hub have been recognised in the City Deal for some time.

8.49 The project promoter has provided an indicative illustration of how a marine hub at Tipner might be laid out and is shown in Figure 9 below, with a schedule of indicative land uses provided in Table 5. The full details

[107] City Deal: Southampton and Portsmouth - GOV.UK (www.gov.uk)
[108] https://www.gov.uk/guidance/noise--2#:~:text=In%20these%20circumstances%20the%20applicant,adverse%20effect%20on%20new%20residents%2F

of the nature of the floorspace, potential occupants, and the land reclamation identified would all need detailed justification from the site promoters at the planning application stage.

Marine Hub Floorspace Allocation	Sq M (indicative)
Workshops	10,500
Boatsheds	5,750
Storage	2,100
Boatyard offices and workspace	17,900
Complimentary marine hub offices	21,500
Other ancillary	250
TOTAL	**58,000**

Table 6: Proposed indicative marine hub floorspace schedule

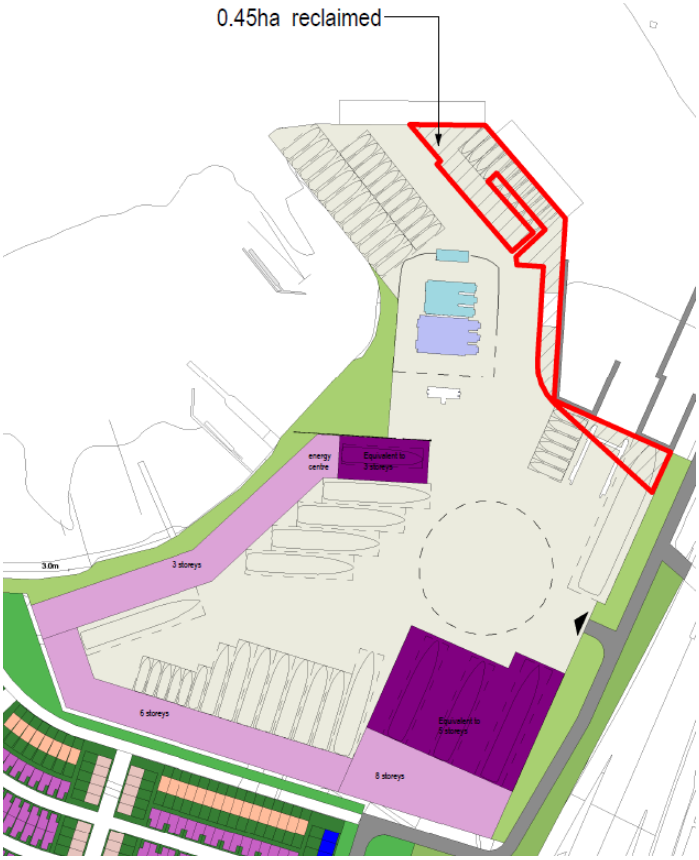


Figure 9: Illustrative layout for marine employment hub

Alternative marine hub locations on the Tipner West peninsula

8.50 The MoD has indicated that commercial development might be permitted on Horsea Island East, subject to limitations on building height, location and distance of habitable room windows and secure boundaries. Nevertheless, project-level optioneering studies undertaken by the promoter team in 2023 have concluded that there are more disadvantages in splitting the marine hub across both Tipner West and Horsea Island East, for the very reason that this removes the benefits of co-location and function outlined above. The MPL studies to date have very quickly confirmed the clear benefits associated with the northern quadrant of the Tipner West site exclusively hosting the marine hub (as illustrated above) not least due to the immediacy of deep-water access.

Alternative solutions to the bridge element of the Tipner West & Horsea Island East allocation

8.51 Local Plan policy PLP3(1)(c) allocates "*A bridge between Tipner West and Horsea Island East for the use of sustainable transport modes only."* Different designs of bridge are available, some of which could avoid any direct loss of habitat. However, this assessment proceeds on the basis that the bridge will involve piers within the intertidal environment that would result in the loss of up to 0.3ha of intertidal habitat loss within the Portsmouth Harbour SPA/Ramsar. Policy PLP3 makes it clear that any such habitat loss would only be supported if it could be shown that it was not viable or feasible to avoid such loss.

8.52 Due to its location, currently only easily accessible via the Strategic Road Network, the Council both as a Local Planning Authority and Local Highway Authority has recognised and created policy to support the new transport infrastructure needed to support the long standing aspiration to develop parts of the Tipner and Horsea areas for housing and business, which should facilitate travel by sustainable modes. Further information on this is set out in the Council's *Tipner-Horsea Bridge Transport Position Paper June 2023*[109].

8.53 In 2010 The Western Corridor Study[110] examined options for infrastructure to improve accessibility. Its recommended transport strategy included a bridge from Tipner to Horsea, restricted to use by buses and other sustainable modes, together with a new bus route from Portsmouth to Fareham via Tipner and Port Solent. The alternatives essentially amount to 'Do Nothing' (i.e. to have no bridge) or alternative bridge alignments which are considered to be a matter of detail to be addressed as part of the project-level HRA.

8.54 Nevertheless, alternative alignment options for the bridge have already been assessed at length in the Council-commissioned report in 2010[111]. The conclusion of that report was that the optimal alignment would be for a structure that runs immediately parallel to the M275 flyover (and physically connected to it), minimising environmental impact and optimising construction and cost efficiencies. Recent analysis in 2023 by WSP on behalf of the project promoter team, has reaffirmed this approach, with an exception being that the bridge corridor (and access way) north of Tipner Lake would continue parallel to the M275 and east of the balancing pond and proposed public open space (on the former landfill site) (see Figure 10 below).

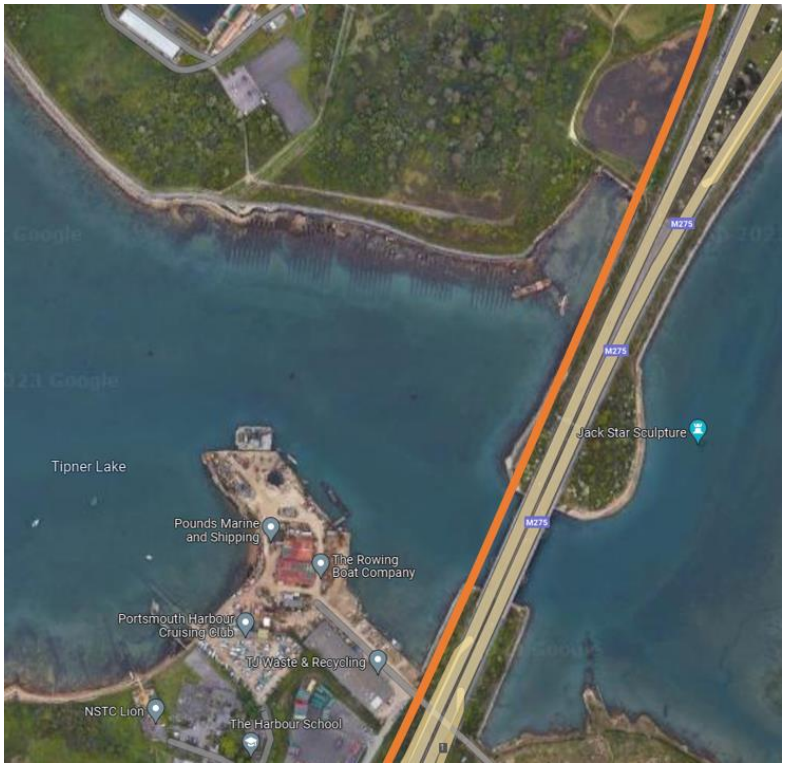


Figure 10: Anticipated Bridge Alignment

[109] see CDL at: https://www.portsmouth.gov.uk/newlocalplanevidence
[110] development-and-planning-western-corridor-transport-study.pdf (portsmouth.gov.uk)
[111] Peter Brett Associates report (2010) - see CDL City Deal: Southampton and Portsmouth - GOV.UK (www.gov.uk)

8.55 A 'Do Nothing' alternative would fail to address the needs identified in the Council's *Tipner-Horsea Bridge Transport Position Paper* (June 2023)[112], resulting in continued reliance by residents and workers of less sustainable transport choices for accessing Portsea Island (via the M275 by private car) and reduced options for new bus routes, emergency service vehicle routes, continuation of congestion at Port Way and consequent longer term pressure on carbon reduction strategies, contrary to the Portsmouth Transport Strategy (LTP 4, 2021-2038) and TfSE Strategic Investment Plan[113].

Alternative solutions to the enabling development component in the form of housing of the Tipner West & Horsea Island East allocation

8.56 As has been outlined above, and as recognised in the City Deal grant, the delivery of necessary flood defence and site decontamination works, the marine hub and other significant infrastructure (including the bridge) can only be delivered through additional sources of funding as the project remains in negative financial viability based upon financial modelling undertaken by the project promoter. Whilst the promoter team continue to seek additional sources of grant funding, it is imperative to demonstrate on-site enabling development opportunities to reduce the viability gap. As noted in the 'Do-Nothing' scenario below, the costs associated with providing the necessary flood defence, site decontamination and land raising alone exceed £200m. Whilst some funding may be sourced via bespoke grant, such as the DEFRA flood recovery grant[114], these are expected to deliver extremely modest sums in the context of the residual funding gap that exists and the expansive nature of the flood risk. Enabling development opportunities must therefore be explored to assist delivery of these works as expected in the City Deal award.

8.57 At the time of writing (February 2024), housing delivers the highest value land use for the purposes of enabling development, notwithstanding enhanced growth in other sectors, such as warehousing. This is also evidenced in Government Land Value Estimates for policy appraisal 2019 (*source: MHCLG, now DLUCH*)[115] with residential values double those for industrial (£3m/ha compared to £1.5m/ha). Other uses would almost certainly deliver even lower returns. For example, it has been suggested that the site south of the proposed marine hub, namely the existing functionally linked habitat (site P60) and land south of the firing range, could provide longer term mitigation income from the City Council (in partnership with the Solent Recreation Mitigation Partnership[116]), through mitigation strategies such as that already in place for the Solent Recreation Mitigation Strategy. However, this approach would not be expected to deliver anything like the funding revenue from residential land use. The Bird Aware website refers to £2m generated every 5 years for capital projects, which would fall well short of the viability deficits currently identified for the Tipner West and Horsea Island East project.

8.58 The Housing & Economic Development Needs Assessment (HEDNA) and the Housing & Economic Land Availability Assessment (HELAA) that form the main evidence base on employment and are referenced in chapter 7 of the draft Local Plan, make it clear that the supply of employment sites in the City is constrained. However, the combination of sites with extant planning permission and Local Plan allocations including the marine hub at Tipner West & Horsea Island East would deliver the necessary floorspace of B8/B2 uses (64,514sqm). Office space can be delivered at the City Centre and Lakeside but there remains significant caution on over-provision of floorspace in this sector due to the shift to working-from-home and hybrid working since the pandemic. With regard to the provision of retail uses at Tipner West, these would fail both the sequential and impact tests being in an out-of-town location. In order to provide a sufficient quantum of retail floorspace as enabling development necessary to materially reduce the viability constraints at Tipner, it would be at risk of fundamentally undermining the Plan's town centre strategy and be contrary to the NPPF. Whilst the other option could be to explore a wider expansion of the marine hub (beyond the 58,000sqm envisaged, pursuant to City Deal), there is no indication that this is necessary (see analysis above) and with housing most likely to deliver the higher land value it has not been considered further.

8.59 Depending on the number of dwellings and the masterplan that comes forward at the planning application stage, delivery of housing could involve the loss of up to 3.6ha of high-tide terrestrial roosting habitat south of the firing range. It should be noted that this is not a requirement or inevitable outcome of delivery of PLP3

[112] See CDL City Deal: Southampton and Portsmouth - GOV.UK (www.gov.uk)
[113] https://transportforthesoutheast.org.uk/app/uploads/2023/03/SIP-1.pdf
https://www.portsmouth.gov.uk/wp-content/uploads/2021/11/74.633-Local-Transport-Plan-2021-Final-Accessible.pdf
[114] https://www.gov.uk/government/publications/flood-recovery-framework-guidance-for-local-authorities-in-england/flood-recovery-framework-guidance-for-local-authorities-in-england
[115] https://www.gov.uk/government/publications/land-value-estimates-for-policy-appraisal-2019
[116] https://birdaware.org/solent/

but it has been assumed in this assessment because, subject to evidence on viability / feasibility, it remains a reasonably likely outcome of the allocation. Delivery of housing on this site has always been a critical element of the package, without which it would not be sufficiently viable (allowing for reasonable assumptions of additional grant funding being levered-in to the project, such as from Homes England). There is also significant unmet housing need in Portsmouth on account of highly constricted land supply, and that need will not be met by the housing provision in the PLP. The delivery of more homes is clearly a national priority for the Government.

Do Nothing

8.60 All development options considered to date have demonstrated a significant negative viability position for the City Council, including a deficit of £48.75m for a 'Do Nothing' alternative solution (City Deal grant to be refunded to Government). It is also the case that additional grant funding will continue to be required and negotiations with Government departments, together with Homes England, continue in this regard. Since October 2022, Full Council has resolved to commit to minimising reclamation from the SPA/Ramsar designated sites. However, significant site enabling costs associated with implementing the City Deal could be in excess of £200m. The City Deal has in any event been premised upon the need to make the Tipner West and Horsea Island sites ready for sale to *'one or more private sector developers'*.

8.61 The optioneering process has focused upon broad land-use locations, application red line extent and, if necessary, any reclamation that might be sought from intertidal SPA/Ramsar sites. With the exception of the "Do Nothing" option, all options include variable quantities of residential development which, as noted above, provides essential cross-subsidy 'enabling' funding for the necessary flood defence and site decontamination works. The City Deal did not provide for full Government funding of these works. There is no basis on which any of the benefits of the allocation could be delivered in the absence of enabling development contributing to the financial viability of the allocation.

Providing housing elsewhere

8.62 Theoretically, the housing element of PLP3 could be disaggregated from the marine hub element and located elsewhere, with the income generated by that housing development applied to cross-subsidise the delivery of the marine hub and infrastructure upgrades at Tipner West and Horsea Island East. However, Portsmouth has a highly constricted land supply with much of the land that is available to build on at risk of flooding, close to international nature designations and including heritage assets. The HELAA[117] is the main evidence base document on housing and economic land supporting the Local Plan. A robust and vigorous assessment of all potential housing sites was carried out as part of this study. The housing target set in Policy PLP16 of the Local Plan sets out all the sources of housing supply in Portsmouth including all sites of five or more dwellings identified as deliverable or developable in the HELAA. If the new homes allocated at Tipner West and Horsea Island East did not come forward on the PLP3 site, they could not be delivered elsewhere in the City. This would make the existing yearly unmet need of 219 homes in the City even greater[118].

8.63 The City Council works closely with its neighbouring local planning authorities in the Partnership for South Hampshire (PfSH) on meeting sub-regional housing need and other cross boundary strategic matters. There is already agreement with Fareham Borough Council to provide 800 new homes for Portsmouth in their newly adopted Local Plan. It is highly unlikely that Portsmouth's neighbouring councils would be able to accommodate the additional 830 – 1250 homes lost from the PLP3 allocation. Moreover, it is almost certain that they would not be able to accommodate those homes on a single site, as with PLP3, or even on two or three large sites.

8.64 For a number of reasons, therefore, disaggregation of the housing element from the marine hub element of PLP3 is not a feasible alternative because:

- It is unlikely that there is capacity within the PfSH sub-region to accommodate an additional 830 – 1250 homes;
- It is almost certain that, even if there was such capacity, it would not enable delivery on a single site or even on two or three large sites. As a result, the efficiencies of delivery on a single large site would be lost, with consequences for the level of cross-subsidy able to be generated.

[117] https://www.gov.uk/government/publications/city-deal-southampton-and-portsmouth
[118] Taking into account contribution of 800 homes from Fareham Borough Council, this reduces the annualised unmet need from 219 to 179.

- In order to generate a cross-subsidy, any housing delivered on alternative sites would need to be delivered by the same developer. The promoter of the PLP3 site does not currently own sufficient suitable land across the PfSH sub-region to deliver the required housing.

- Housing at the PLP3 site is likely to carry a sales premium on account of the waterside location and co-location with the marine hub, which would not be the case with alternative sites across the PfSH sub-region, with consequences for the level of cross-subsidy able to be generated.

8.65 Moreover, an fundamentally, disaggregation of housing from the marine hub element of Policy PLP3 would not deliver on the project objective which includes housing co-located with the marine hub to support the growth of the marine workforce. Indeed, the City Deal was premised on unlocking Tipner-Horsea Island fully to enable the provision of 2,370 new homes and 58,000 square metres of employment space for the growing marine and advanced manufacturing sectors of the Solent economy. This will help create over 3,700 permanent jobs. This depends on colocation of housing and employment uses.

Providing housing differently on the site

8.66 The final site layout and housing quantum is ultimately a matter for the planning application stage. The PLP3 Policy will only permit the delivery of housing to result in the loss of SPA/Ramsar habitats if – at the planning application stage – it can be shown to be necessary for viability or feasibility.

8.67 Nonetheless, considerable work has been done to date to consider the various options for delivering housing. The Portsmouth City Council project team have engaged with the local planning authority in a development optioneering process, principally through regular engagement with the Tipner West Regulatory Panel, but also directly with LPA Policy and Development Management officers. The current project work follows the cessation of work on the former 'super peninsula' as confirmed in October 2022. The optioneering stage, to identify a preferred option for the allocation that would best meet the project principles for this allocation site has broadly followed the chronology in Table 6.

Table 7: 2023 Site Promoter Optioneering Chronology in consultation with Regulatory Panel

Date	Optioneering Stages post October 2022
2022	
October	Full Council approval of Project Principles for a revised project for development at Tipner West and Horsea Island East, ruling out both the super peninsula and the do-nothing scenario.
2023	
January	Re-engagement with LPA Development Management case officer and update to Planning Performance Agreement (PPA) to reflect new Project Principles. Continuation of cross-party working group for consultation with the project team throughout 2023; **Regulatory Panel 2023 #1** - review of updated project brief, draft overarching objective and project principles, alongside baseline survey evidence
May	LPA written advice in respect of promoter's draft Stage 1 Ecology Technical Report (EPR), including initial proposals for use of HIE as compensatory habitat and development of the terrestrial SPA/Ramsar.
June	**Regulatory Panel #2** - consideration of 13 development options against project principles and consideration of updated bespoke SPA Impact Metric LPA written advice in respect of suite of ecological surveys and 13 development options, discounting 7 options.
July	**Regulatory Panel #3** - further review of bespoke SPA metric and option viabilities. LPA written advice on SPA metric, proposed updates to the Project Principles, draft Overarching Objective, next stage of optioneering assessment criteria

Date	Optioneering Stages post October 2022
August	**Regulatory Panel #4** - Review of 6 shortlisted Options (and as broken down into 'Elements' (Land Mass, Compensation, Employment, Listed Structures); review of option screening criteria; proposed update to Project Principles
September	**Regulatory Panel #5** - Review of 6 options against screening criteria
October	Full Council Approval of Updated Project Principles[119]
November	**Regulatory Panel #6** - Outline of the 2 shortlisted development options for detailed evaluation Full Council approval of promoter recommendations to progress masterplanning and viability assessment of the 2 shortlisted options[120]
December	LPA written advice in respect of draft proving layouts for shortlisted options and pursuant to feedback from Regulatory Panel #6.

8.68 The Regulatory Panel has principally been engaged through 2023 in discussions around the evidence base/surveys, assessment methodologies and specific development option assessment and promoter shortlisting of options. The feedback of panel members has been recorded by way of meeting minutes and responses to specific Promoter questions raised in advance of the meetings. Presentation material has been made available to panel members on a shared website managed by the promoter team. The LPA, as competent authority for the purposes of HRA and local planning authority for the proposed TCPA planning application, has provided written advice at regular intervals.

8.69 The shortlisting of options since June 2023 was done initially with reference to the approved project principles and was at a relatively high level. The second stage screening in September was undertaken by way of a more detailed matrix of key criteria, discussed in advance with the Regulatory Panel, covering in addition considerations of strategic planning and national/regional marine policy (including the Solent Shoreline Management Plan, South Inshore Marine Plan and NPPF) and environmental and socio-economic matters.

Alternative solution to land reclamation or loss of terrestrial SPA habitat

8.70 Some loss of SPA/Ramsar habitat is inevitable under PLP3, as a result of dredging to enable a deep water channel to the Marine Employment Hub. Loss of intertidal habitat to the bridge piers is also likely, as already discussed. The project-level HRA will consider in more detail possible technical alternative solutions to this area of identified reclamation, such as through suspended designs, for example.

8.71 The extent to which further habitat is lost via land reclamation and/or development on the terrestrial SPA at the southern extent of Tipner West is a matter for determination at the planning application stage. PLP3 will require the applicant to demonstrate that, at the project-level, there are no feasible alternatives to the loss of terrestrial SPA, as well as demonstrate that there are IROPI and that compensation has been secured.

8.72 The RSPB and Hampshire & Isle of Wight Wildlife Trust (HIWWT) jointly commissioned and submitted to Portsmouth Council a development concept for the site which avoided any development on, or reclamation of, any part of the SPA/Ramsar designated sites, including land south of the firing range, although it did still assume a bridge. This was supported by specially commissioned concept images as part of their 'Don't Cross the Line' campaign[121]. This indicated support in principle for new residential and commercial development at the allocated site, but expressly excluded any development of (or reclamation from) the SPA/Ramsar designated sites, including the terrestrial SPA/Ramsar south of the former firing range.

8.73 The specific option advanced by RSPB/HIWWT was considered by the project promoter alongside all other development options in 2023 (put forward as Option 1) but was not taken forward in the optioneering process because it would substantially increase the financial viability gap. The financial modelling undertaken by the project promoters indicates that this option would result in a negative viability position in the order of £118m (driven by additional serviced development platform construction costs on Horsea Island East) but

[119] see Appendix B at: https://democracy.portsmouth.gov.uk/documents/s50877/240223%20-%20Tipner%20Cab%20update%20FINAL.pdf
[120] https://democracy.portsmouth.gov.uk/documents/s48227/Report%20-%20TRP%20Principles.pdft
[121] https://www.hiwwt.org.uk/tipner

in the absence of any reclamation adjacent to the marine hub (stated by the promoter team to be essential for operational functionality) it was discounted.

8.74 On account of the current emerging evidence on viability and feasibility, the PLP3 Policy does not rule out development on parts of the SPA/Ramsar site. However, it provides a strong policy steer that, save for the inevitable dredging required to provide access to the marine hub, loss of, or harm to, habitats sites should be avoided. Any planning application seeking consent to develop in a manner that did cause the loss of or harm to designated sites would need to provide up-to-date evidence on viability and feasibility to demonstrate that such harm was necessary to enable the development, and it would also need to provide a project-level HRA demonstrating how the proposal met the derogations tests.direct habitat loss. Any additional habitat loss will

Summary on Alternative Solutions

8.75 On the basis of the above provisional assessment of alternative solutions, the authors are satisfied that there are no feasible alternative solutions to the Plan's proposals for Tipner West and Horsea Island East as set out in Policy PLP3 that would be less damaging or avoid damage to the designated sites. There is currently no prospect of external funding or Council core-funding for the delivery of necessary flood defences and decontamination work. There are no better sites across the Solent to deliver the much needed marine hub. And the delivery of housing as enabling development remains the optimal land use for the purposes of securing cross-subsidy funding, to supplement the City Deal grant and to bring forward the marine hub.

Imperative Reasons of Overriding Public Interest (IROPI)

8.76 Portsmouth City Council as local planning authority considers there to be IROPI in support of the proposed site allocation at Tipner West & Horsea Island East. In April 2023, the local planning authority, in adopting a precautionary approach, sought an 'IROPI Opinion' from the Secretary of State (Department of Levelling up, Homes and Communities (DLUHC)) pursuant to Regulation 107(3) of the Regulations; the first request made under this provision to the UK Government since Brexit. The Council submitted a detailed Statement of Case[122] in support of its request.

8.77 A response from DLUHC was received on 22nd September 2023[123] which, in summary, advised that the Government considered the submission to be premature, and that it would not be able to provide such an Opinion in the absence of full details of alternative solutions and compensation strategy (steps 1 and 3 of the Derogation). However, the letter from DLUHC did provide the following statement: "In an attempt to assist with further consideration of the proposal, we have however sought to provide a clarification of what could be relevant IROPI factors. In principle, we consider that the provision of housing (and affordable housing) is capable of justifying IROPI. We also consider that, at the stage where it is appropriate to give an opinion, the consideration of whether IROPI exists would need to be made against the full package of public benefits associated with the scheme – your request refers additionally to matters including flood risk, contaminant leachates and employment for example." [emphasis added]

8.78 There are three core reasons to IROPI in this case which are considered to give rise to a cumulative IROPI case, as outlined in the Council's Statement of Case. It should be noted that the IROPI case for the purpose of the draft Plan may have some differences or exclusions relative to those that are put forward at the more detailed project-level. This is reflected in the fact that an IROPI Opinion at the Plan-making level (Regulation107) is separate from that which may be sought at the Project-level (Regulation 64).

Flooding Risk to Human Health and Safety

Imperative reasons: Human health, public safety, beneficial consequences of primary importance to the environment, social and economic

8.79 Although the requirement for flood defences stems from coastal policy independent of the Local Plan, it is relevant to IROPI because there is currently no clear source of funding for the delivery of defences at Tipner West and Horsea Island East in the absence of Policy PLP3. Portsmouth's sea-levels are due to rise by around 70cm over the next 70 years. This is noted in the Solent Shoreline Management Plan referenced in

[122] https://www.portsmouthcc.gov.uk/newlocalplanevidence
[123] https://www.portsmouthcc.gov.uk/newlocalplanevidence

the Alternative Solutions section above. The existing coastal defences at Tipner West are in poor condition. The 2011 Portsea Island Coastal Strategy Study[124] estimated that defences on Horsea Island East may fail within 5-10 years, and within 10-15 years on Tipner West. Due to a lack of maintenance over recent years, there is an increasingly high risk that these defences could fail in the near future.

8.80 As there are currently no homes on the Tipner West site it is unlikely that flood defences would be funded by the Environment Agency and must therefore be funded by Portsmouth City Council as the principal landowner and Lead Local Flood Authority. However, there are significant funding constraints upon PCC, as noted in 8.22 above. The City Council did secure City Deal funding in 2014 to support the delivery of this critical enabling infrastructure at Tipner. However, the City Deal funding is bound up with the delivery of Policy PLP3. The do-nothing option will mean the loss of the existing land mass to flooding. This will result in the loss of the existing land uses on the site, including the Harbour School[125], five Grade 2 Listed heritage assets as well as the loss of the inter-tidal and terrestrial habitats that form part of the designated nature conservation sites. It is anticipated that intertidal habitats are likely to see a 40% reduction by 2120 through flooding.

8.81 In addition, flood modelling undertaken by the TRP consultants, WSP, shows that flood waters would pass through to Tipner East and Stamshaw, as shown in the image below. The image shows the estimated extent of flooding by 2123 – accounting for 100 years climate change and assuming that nothing is done to protect Tipner West.

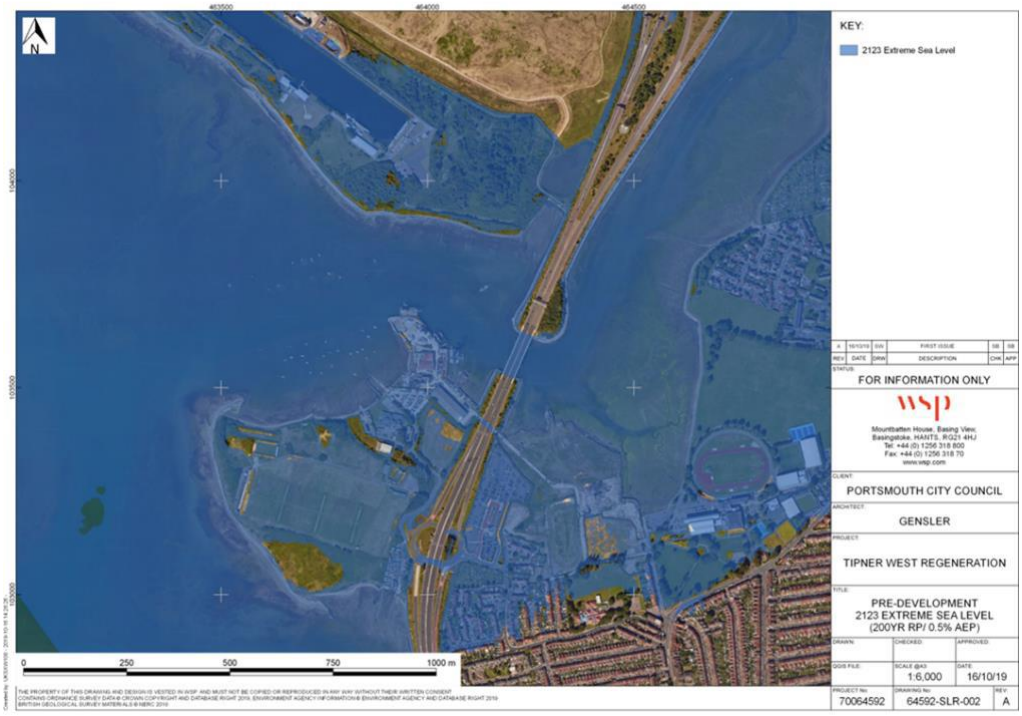


Figure 11: Flood Modelling - 2123 Extreme Sea Level (0.5% Annual Exceedance Probability) – Pre-Development Scenario[126]

8.82 As noted in the Alternative Solutions section, the North Solent Shoreline Management Plan[127] and associated policy map for Portsmouth Harbour sets out an adopted policy of Hold the Line over the long term (to 2105).

8.83 The policy of 'Hold the Line' requires that defences and beach management activities are maintained or improved to provide protection from coastal flood and erosion to important assets or features at the coast. Such assets might include centres of development and redevelopment, industry and commerce, agriculture,

[124] https://coastalpartners.org.uk/project/portsea-island-coastal-strategy
[125] The Harbour School is a maintained Special School and Alternative Provision providing education for Portsmouth pupils who are unable to attend mainstream school for either Social, Emotional and Mental Health (SEMH) Needs or medical reasons
[126] https://democracy.portsmouth.gov.uk/documents/s41718/APP%20C%20-%20211126-%20TRP%20-%20Full%20Council-%20Report%20Dec%202021.pdf
[127] https://www.northsolentsmp.co.uk/
https://www.northsolentsmp.co.uk/media/1700/Policy-statement-and-map-5API01/pdf/Policy_statement_and_map_5API01.pdf?m=637518491614430000

nature conservation designated sites, etc. The method of maintaining or improving the line of defence may consider local adjustments to the alignment of defences or that existing structures are replaced or new defences constructed, depending on the local conditions and requirements identified. The SMP notes that: "Due to the high proportion of the North Solent shoreline that is privately owned and the maintenance of defences that are privately funded, there are frontages where a HTL has been proposed but the works identified to manage the coastal flood risk are considered economically marginal or not economically viable."

8.84 Whilst recognising that the SMP is non-statutory, it has been adopted through a partnership of 16 organisations, including input from Portsmouth City Council through the Havant, Portsmouth and Gosport Coastal Defence Partnership ("Coastal Partners"). However, the cost of defending the existing land mass is currently estimated to be in the order of £35m. The provision of City Deal Funding in 2014 was therefore in recognition of the necessity for environmental benefit and public safety of these flood defence works and the multiplicity of environmental, economic, social and human health risks should flood defences remain absent whilst in addition de-risking the site for private investment to secure the Council's (and Solent region's) wider employment, housing and infrastructure needs (detailed further below).

8.85 As addressed above in the alternatives section, there is no current prospect that the flood defences envisaged in the City Deal and the SMP will be delivered without developer funding through Policy PLP3.

8.86 It is concluded that the need to mitigate significant flooding risks comprise imperative reasons that are in the public interest, meeting the first two tests for IROPI in support of the draft allocation.

Contaminant Leachate Risks to the integrity of SPA/Ramsar habitats

Imperative reasons: Human health, public safety, beneficial consequences of primary importance to the environment, social and economic

8.87 Should the sea defences fail, there is a risk of releasing contaminants present in the ground into Portsmouth Harbour and polluting designated nature conservation sites. The site currently represents a weak-spot in island-wide defences, particularly in comparison to the recent/current North Portsea and Southsea coastal defence schemes. Contaminants on the Tipner West site stem from a long history of military use, including extensive areas of made ground, the processing of gunpowder, mustard gas degradation trials, grenade testing, stripping of military vessels (including asbestos, metal, cellulose and fluorescent paints) and discarded bullet casings. Site investigations have identified risks to controlled waters and current site occupiers, including Principal and Secondary Aquifers, notably from inorganic contaminants (metals, asbestos) and organic Polycyclic Aromatic Hydrocarbons (PAH's)[128]. These recently updated assessments on behalf of the PCC Promoter team (reports in draft at time of writing this report) have noted (in the absence of mitigation measures):

- *"Unacceptable risk to ecological receptors present within the designated areas surrounding Horsea Island East and Tipner West."*
- *The leachate exceedances represent a risk from contaminants within Made Ground leaching down to the groundwater within the Made Ground, Tidal Flat Deposits and Lewes Nodular Chalk, Seaford Chalk and Portsdown Chalk Formation and migrating laterally towards the tidal waters of Portsmouth Harbour.*
- *Moderate concentrations of widespread inorganic (metals, asbestos) and organic (PAHs) contamination in the soils in the areas assessed on Tipner West Land associated with Made Ground deposited as part of the former military and landfilling activities on site.*
- *Groundwater level monitoring indicates that it is tidally influenced beneath the site."*

8.88 There are clear contaminant leachate risks existing on site and in the absence of mitigation measures, (including sea defences, land raising/capping as part of the development of the site) the integrity of the designated sites and citation species and habitats are at risk. The proposed works would be within the

[128] Savills EIA Scoping Report for Tipner West and Horsea Island East Strategic Development Area (2020) https://www.portsmouthcc.gov.uk/newlocalplanevidence; https://www.portsmouthcc.gov.uk/newlocalplanevidence;
DRAFT WSP Technical Notes: "Tipner West Outline Remediation Approach" (Feb 2024) and "John Henry Pounds Contamination Summary and Listed Buildings" (Feb 2024)

Portsmouth Harbour Water Framework Directive (WFD) waterbody and Shellfish Water protected area. The waterbody is currently of only 'moderate' ecological status and 'fails' on chemical status due to mercury and Polybrominated diphenyl ethers (PBDE). All such waterbodies are required to be 'good status' and the unmitigated flooding of the Tipner landmass and associated risks of contaminant leachate would have a further negative impact upon the Harbour waterbody status and have direct and indirect impacts upon citated flora and fauna species within the designated sites. The project-level HRA and EIA will need to assess these impacts in more detail, alongside bespoke mitigation measures.

8.89 The North Solent SMP adopted the 'Hold the Line' policy for the Tipner flood cell with regard to contamination risks in addition to harm posed from flooding. All flood cells where holding the existing defence line is sought includes areas of contaminated land and/or landfill. It has therefore been agreed through Coastal Partners and endorsement of the SMP by DEFRA that the area should be sealed to prevent contamination of the Harbour.

8.90 As outlined in the Portsea Island Coastal Strategy Study, Portsmouth City Council has undertaken detailed desk studies and site investigations at several sites around the coastline with reports detailing the nature and depth of the fill, soil and groundwater contamination levels. The site investigation reports have been reviewed to determine their potential for contamination and the implication of contamination migration into the SPA and SAC. There may of course be conflicts between the damage to the international site caused through pollution and the encroachment on the SPA/Ramsar if defences have to be constructed to protect the area. The study showed that defence failure would lead to release of contamination that would be likely to adversely affect water quality and the ecological integrity of the harbours. Contaminants in sediment would be ingested by invertebrates and in turn by birds, in which concentrations may be sufficient to cause mortality or morbidity. This would be damaging to the integrity of the designated sites.

8.91 As set out above, there is a requirement for relevant authorities in England and Wales to take steps to protect SPAs from pollution. Policy PLP3 constitutes part of the Council's strategy for contributing to meeting that requirement. It is concluded that this amounts to an imperative reason that is in the public interest, meeting the first two tests for IROPI in support of the draft allocation.

The creation of a Marine Employment Hub for the Solent Region

Imperative reasons: Social and economic

8.92 The necessity to provide employment land and jobs in Portsmouth and the need, and importance of, growth of the marine, maritime and advance manufacturing sectors in the UK and Solent Region are key drivers underpinning the reasons for the proposed site allocation for Tipner.

8.93 The Portsmouth Economic Development and Regeneration Strategy, adopted in 2019[129] defines the need for additional jobs in Portsmouth and highlights the opportunity for a marine and maritime engineering quarter (or 'marine hub') to build on the current buoyant cluster in the City and contribute to the key objectives of addressing local low educational attainment and local talent-progression. The emerging Local Plan and its associated evidence base brings forward this objective of providing an additional 7,000 jobs and the associated need for 177,700 sqm of employment floorspace in the land-constrained City of Portsmouth. The need to provide for this growth is highlighted within the opportunities at Tipner to support marine employment.

8.94 The discussion below sets out the value of the marine sector to the UK economy, the current and future needs of the sector and why there is an urgent need for the UK to service its demand. The evidence below explains why the Solent is the optimal location within the UK to achieve this urgent need, and that Tipner is the best site within the Solent to deliver the marine sector requirements. The development of a marine hub at Tipner would also be in line with the first of the Government's levelling up missions namely pay, employability and productivity whilst providing high-quality skills training in the marine sector in line with the sixth levelling up mission.

[129] https://www.portsmouth.gov.uk/services/council-and-democracy/policies-and-strategies/economic-development-and-regeneration-strategy/

8.95 The delivery of development to meet the national UK marine sector is considered to be both imperative and critical and in the public interest. Should the market demand of the UK marine sector not be met:

- The growth potential of the maritime sector would not be realised;
- Activity would either not occur or be displaced to less suitable locations, further minimising the economic potential of the sector and impact on Portsmouth, the Solent region and the UK;
- Part of the displacement might see the potential for inward investment being diverted away from the UK.

8.96 The continued growth of the marine economy in the Solent area is a matter of regional strategic importance. Research carried out by the Council's project promoter team has concluded that the marine and maritime industry makes a substantial contribution to the UK's economy comprising:

- A direct contribution of £14.5 billion in GVA and 186,000 jobs (in 2015). The marine sector represented £6.4 billion of this GVA;
- A significant supply chain that indirectly contributes approximately £37.4 billion on VA and 957,000 jobs (in 2015).

8.97 Key trends influencing the future of the marine and maritime industries include:

- The growing middle class in emerging economies will underpin demand for marine leisure exports.
- Climate change and the growing need for renewable energy will result in an increased demand for offshore wind and tidal energy.
- The UK's strength in both Research and Development, and technical expertise, make it well placed to meet the demands of this market and contribute to its growth.

8.98 In order to successfully service global markets and leverage the UK's historic strength in these sectors, there is a need for more well located marine land and sites to be provided to deliver the required additional capacity.

8.99 The UK offers a number of key clusters of marine and maritime industry that have the potential to service the market demands. Seven clusters have been identified by the Department for Transport in their 2019 report '*Maritime 2050 – navigating the future*'[130], each with their own specialisms and characteristics. The Maritime 2050 report identified the Solent as having specialisms relating to its Marine and Maritime University and Research and Development Assets, as well as having key institutions such as the Maritime and Coastguard Agency (MCA) and Lloyd's Register.

8.100 The *Maritime Growth Study (2015)*[131] states that the maritime industry "*continues to be seen by the international market as a world leading maritime centre*" that remains "*highly competitive*" in providing training, skills and manufacturing. Whilst the "*contribution to the economy is already substantial, with the right conditions, [it] can be grown further*". Innovations, clustering and stability were identified as "*underpinning the health of the UK maritime sector*".

8.101 The *Maritime 2050* report sets out the Government's strategy for the maritime sector over the next 30 years and was produced following the *2015 Maritime Growth Study* to create a national strategy for the maritime sector "*which could send a strong signal to international customers and competitors*." The report identifies strategic ambitions for the UK to build upon the existing international reputation and clusters, which include:

- To strengthen the UK reputation for maritime innovation, maximising benefits to the UK from new maritime technology through our world leading universities, maritime small and medium enterprises (SMEs) and global companies.
- To grow the UK's maritime workforce and transform their diversity to enhance the UKs reputation as the world leader in the provision of maritime education and training.

[130] https://www.gov.uk/government/publications/maritime-2050-navigating-the-future
[131] *The Maritime Growth Study: Keeping the UK competitive in a Global Market (2015)*

- To support the continued multi-billion pound commercial investments in maritime infrastructure that makes the UK a globally attractive destination for all maritime businesses.

8.102 In the context of the coronavirus pandemic, the maritime industry responded to the strategy with a recovery plan issued in 2020 (*Maritime Sector Recovery Plan, Maritime UK, June 2020*)[132]. The plan set out how the maritime sector is well-placed to drive a green, regionally balanced, export-led recovery and the actions needed for both industry and Government to achieve this. The short-term focus is on restarting and recovering the maritime business affected by the pandemic. The longer term goal is to renew the maritime sector in line with existing strategies and plans so as to "*deliver action to revive and transform the sector to ensure its competitiveness…"* and *"The issues on which this sector can support transformational change are many and include driving economic growth in coastal communities and through green growth*".

Importance of the Solent

8.103 The Solent is a prime location within the UK to deliver development to meet the pressing needs of the marine and maritime sector. This is recognised in its recent designation as a Freeport. As explained above, a failure to meet the demands of the marine and maritime sector in the Solent could result in its growth potential not being attained with inward investment to the UK being compromised.

8.104 As assessment published by CEBR2 on behalf of the Solent Local Enterprise Partnership (LEP) in 2019 identified the Solent as a 'gateway for global trade', with the influence of its existing maritime sector and the Portsmouth Naval Base being key macroeconomic indicators of GVA, turnover and employment. The assessment notes that:

- The Solent cluster has the most diversified marine and maritime industry. Whilst most clusters excel in a few sub-sectors in the assessment, the Solent achieves the highest overall ranking;
- Whilst having a diversified marine and maritime industry, the Solent maintains a high ranking (top 3 of the 7 clusters) in terms of employment opportunities for marine leisure, MBS, naval defence, shipping and ports;
- In terms of marine and maritime businesses, the Solent ranks highest for marine leisure and ports and ranks 2nd in other sub-sectors.

8.105 A report published by MPL[133] undertook a market study, with engagement with the marine sector, to identify the nature and extent of marine sector requirements to be delivered by an optimal development site. The study concluded that the Solent marine sector is currently not meeting existing demand and is not realising its economic potential with the consequence being investment leaving the UK.

8.106 In order to meet the urgent needs of the marine sector, locations must provide key enabling infrastructure, with transport links being crucial to the success of an area. In addition to being the home of Southampton Port (the UK's fifth largest port), both Southampton and Portsmouth Ports benefit from 'Freeport' designation, which seek to achieve the following as a key part of the government's economic plans following its departure from the European Union:

- create jobs;
- increase international trade;
- contribute to the regional levelling up agenda; and
- serve as hubs for innovation.

8.107 The Solent also benefits from essential transport infrastructure required to deliver development to meet the needs of the marine sector. The Solent is located on one of the country's major HGV corridors, linking the region to London via the M3, Oxford and the Midlands via the A34 and M40. The Solent also benefits from two Road Investment Strategy (RIS) projects which would significantly transform the highway infrastructure. This includes the upgrade to the M27 to a smart motorway between junction 4 (M3 interchange) and junction

[132] https://www.maritimeuk.org/priorities/maritime-sector-recovery-plan/

[133] See Appendix B at https://democracy.portsmouth.gov.uk/documents/b14699/Tipner%20West%20Full%20Council%20Update%20-%20Appendices%2006th-Dec-2021%2013.00%20Cabinet.pdf?T=9

11 (Fareham), linking with the M3 smart motorway project (RIS20 and the upgrade of J3 of the M27 (RIS3). The Solent also benefits from the core rail freight network (as defined by Network Rail) on the corridor connecting Southampton port with the West Midlands. The Solent also performs well in terms of airport infrastructure, with both Southampton and Bournemouth airports located in the sub-region, and the UK's largest airport in terms of passengers and freight tonnage/value, Heathrow, is well connected within convenient travel distance.

8.108 Supported by the conclusions reached in Maritime 50, the Solent is one of seven national maritime clusters, it offers specialisms relating to its Marine and Maritime University and Research and development assets and being the location for key institutions such as the Maritime and Coastguard Agency and Lloyd's register. The Solent is uniquely placed to attract marine and maritime businesses through the application of new technology and research. The Solent cluster offers the second highest number of marine and maritime businesses in the UK (after London), with over 500 firms operating in the industry. It provides the most firms in marine leisure (136) and the second highest in marine engineering (274) and maritime business services (108).

Current Shortcomings of the Solent

8.109 The availability of waterfront sites with the characteristics to deliver the right development is key to meeting the marine sector needs. With regard to the supply of waterfront land in the Solent, in 2019 only 10% of the remaining such land offers permanent water access. Of these sites, only 57% are over 2ha in size and they offer insufficient capacity to accommodate the infrastructure and development to accommodate marine, maritime and advanced manufacturing to a scale that delivers the UK need. The Savills report for TRP, in support of the project, has conducted research into the Solent employment market to understand the strength of the marine property market, its future profile and the extent of demand and how that could be met. The key findings have concluded:

- There is a shortage of available marine-frontage built area and developable land is in high demand;
- Capital costs may impact the viability of meeting this demand in an undersupplied market;
- An optimally designed marine employment environment will require high upfront costs, but also a long term view from occupiers for this unique cluster and critical mass of activity.

8.110 The evidence base demonstrates that there is a shortage of both available marine frontage developable land, coupled with a high demand. The capital costs may impact the viability of meeting this demand in an undersupplied market. Not only will an optimally designed marine hub comprising modern waterfront infrastructure require high up-front costs, but long term financial and advisory support (potentially through partnership with the Solent LEP, among other sources) is likely to be needed to attract occupiers to establish a unique cluster and critical mass of activity.

8.111 The MPL report undertook a detailed, targeted and specific market study through engagement with the marine sector to identify the nature and extent of marine sector requirements to be delivered by an optimal development site (see Site Promotion Report, August 2021, (paras. 2.46-2.53)[134]. The study concluded that the Solent marine sector is currently not meeting demand and is losing out where opportunities are leaving the UK. The study noted that other potential marine employment sites in the Solent all suffered from a number of constraints such as poor water depth, inefficient vessel launch and recovery systems.

The Potential of Tipner West/Horsea Island East

8.112 The identification of Tipner West and Horsea Island East through the City Deal is based upon the need to address the national, regional and local need for employment focused on marine employment and advance manufacturing, with public funding being provided to address the marker factors summarised above. Such funding and public sector support will enable the early delivery of the required infrastructure to enable the delivery of a 9ha of marine employment development.

8.113 The City Deal sought to maximise the impact of marine and maritime assets by unlocking critical employment and housing sites. It states that: "Providing suitable employment sites for Southampton and Portsmouth's growing marine, maritime and advanced manufacturing sectors that are in close proximity to key economic assets (Port of Southampton, Portsmouth Naval Base and the Solen Marine Cluster) as well

[134] See Appendix D at https://democracy.portsmouth.gov.uk/documents/b14699/Tipner%20West%20Full%20Council%20Update%20-%20Appendices%2006th-Dec-2021%2013.00%20Cabinet.pdf?T=9

as meeting growing housing demand are key economic challenged for the Solent…Unlocking this site fully will enable the provision of 2,370 new homes and 58,000 sqm of employment space [and] will help create over 3,700 jobs."

8.114 For all the reasons above, the delivery of development to meet the needs of the UK marine sector is considered to be both imperative and critical and in the public interest in support of the draft allocation.

Supporting Necessary Works through Enabling Development

Imperative reasons: Economic

8.115 As already noted, the City Deal does not provide for full Government funding to address the critical works highlighted above and significant additional grant funding will still be required. Despite the significant economic benefits expected to accrue from the development, it is not considered reasonable by the Council Administration to expect Portsmouth residents and taxpayers to solely bear the burden of servicing a loan, over many years, to cover the funding needed, even if such finance could be arranged. With no other feasible capital raising avenues available, utilising the site to provide enabling development to support the deliverability of the objectives is therefore considered essential. Further discussion on the financial constraints is provided in site promoter's report to Cabinet and Full Council in December 2023.[135]

8.116 The provision of enabling development, in the form of residential development, is considered by the LPA to be both imperative and in the public interest to ensure the delivery of the site allocation and its many associated benefits. The response from DLUHC of September 2023 confirmed that the provision of housing could constitute IROPI.

Other Public Benefits

Imperative reasons: Human health, public safety, beneficial consequences of primary importance to the environment, social and economic

8.117 The LPA's IROPI statement of case outlined other public benefits, notably:

Housing Need

8.118 The Tipner West & Horsea Island East allocation will deliver between 814 and 1250 homes in total. The need for new homes in Portsmouth is great. Based on the standard methodology, as of December 2023, the need for new homes in the City is 899 dwellings per year. Policy PLP16 of the Pre-Submission Local Plan sets a housing target of 13,603 new homes to be completed in the City up to 2040, which is 680 new homes each year. There is therefore an annual unmet need of 219 homes per year. The Housing Delivery Test Action Plan[136] explains the reasons for under delivery and sets out ways in which we will address it.

Sustainable Transport and Connectivity

8.119 A city-wide policy in line with the Portsmouth Transport Strategy (LTP4) and Imagine Portsmouth 2040 Vision[137], including meeting climate change targets as outlined in draft Chapter 9 of the Local Plan ("Greening the City").

Public Access to Open Space and Heritage Assets

8.120 With the benefit of City Deal funding and the adoption of the new Portsmouth Local Plan 2040, it is feasible to open up much improved opportunities for public access to areas of public open space planned on former landfill to the north of the HIE site. The land is allocated for new open space under draft policy PLP9 of the Pre-Submission Local Plan. This would cover an area of approximately 64ha and provide public health benefits for existing and new residential communities.

8.121 In addition, there are five Grade 2 Listed Buildings on the site which have been neglected for many years. The enabling of development of the Tipner West peninsula as supported through the City Deal and draft Local Plan allocation, alongside the imminent freehold acquisition of these assets by the City Council, provides the City Council with new opportunities and responsibilities. The listed buildings on site have a

[135] https://democracy.portsmouth.gov.uk/documents/s49338/TRP%20Report.pdf
[136] https://www.portsmouth.gov.uk/wp-content/uploads/2022/11/Portsmouth-City-Council-Housing-Delivery-Test-Action-Plan-2022-2023.pdf
[137] https://imagineportsmouth.co.uk/the-vision/

unique maritime history, in particular with regard to the holding of gunpowder and munitions and the site allocation seeks to ensure, as far as possible, the restoration, repair and re-purposing of these assets.

Managing existing recreational disturbance to birds on designated areas

8.122 The site is currently inflicted with unmanaged access to the coastal edge resulting in recreational disturbance of qualifying bird species on the intertidal, estuarine and terrestrial areas of the SPA/Ramsar site. Creating a deliverable development on the site will enable an on-site management plan and mitigation/avoidance strategy to be introduced to prevent and reduce direct recreational disturbance and other adverse effects to the site integrity that are arising from current uses, both formal and informal, of the land in its current status. This would be in addition to the established Bird Aware mitigation strategies already in place.

The Overriding Balance

8.123 Consideration of IROPI necessarily involves a balancing exercise for the decision-maker. It is necessary for the 'competent authority' namely Portsmouth City Council as LPA, to consider if the imperative reasons and public benefits put forward override the anticipated harms identified. Advocate General Kokott in Case C-239/04 described the exercise as a balancing exercise: *"The necessity of striking a balance results in particular from the concept of 'override', but also from the word 'imperative'. Reasons of public interest can imperatively override the protection of a site only when greater importance attaches to them. This too has its equivalent in the test of proportionality, since under that principle the disadvantages caused must not be disproportionate to the aims pursued."*[138]

8.124 The overriding balance is thus a matter of judgement to be conducted by weighing the imperative reasons of public interest against the identified adverse effects on the Portsmouth Harbour SPA / Ramsar site.

8.125 On one side of the balance is the reasonable worst-case direct loss of habitat resulting from the adoption of Policy PLP3: 2.1ha of intertidal habitat from dredging for the marine hub; 0.3ha of intertidal habitat for the bridge piers; up to 0.5ha of subtidal habitat from land reclamation for the marine hub; and up to 3.6ha of terrestrial habitat from development on land south of the firing range. According to the Ramsar Information Sheet for the Portsmouth Harbour Ramsar site[139], 59.3% of the site consists of intertidal flats and 21.2% consists of coastal waters (which will largely have subtidal mudflat as a substrate). This equates to approximately 740.52ha of intertidal flats and approximately 264.74ha of subtidal habitat. The reasonable worst-case habitat loss due to Policy PLP3 therefore equates to 0.3% and 0.19% of these features respectively. While any permanent loss above the trivial requires compensatory provision, this scale of loss is a very small amount of the total available resource.

8.126 As for the possible loss of terrestrial habitat, this resource is scarcer within the Portsmouth Harbour SPA/Ramsar boundary with the land to the south of the firing range on Tipner West being the largest area of terrestrial habitat within the SPA/Ramsar boundary. However, this only represents a small amount (c. 3ha) of the terrestrial primary support habitat around the SPA/Ramsar, with the majority of high tide roosting habitat which support SPA birds already lying beyond the SPA/Ramsar boundary, as identified in the Solent Wader and Brent Goose Strategy. For example Primary Support Areas P48C (46.45ha), P40 (10.25ha), P43 (6.8ha), P140 (4.53ha) and P40A (2.6ha) all lie within 1.5km of the land south of the firing range. There is an agreed strategy for offsetting of the loss of primary support areas outside the SPA as set out in section 6.2 of this report, indicating that it is possible to replace such habitat. Moreover, even if development of land to the south of the firing range on Tipner West does occur it will not result in the loss of the entirety of this habitat and such development is not a requirement or inevitable outcome of Policy PLP3. Therefore, while any permanent loss above the trivial requires compensatory provision, the potential scale of loss is a small amount of the total available resource, being approximately 5% of the primary support area resource within c. 1.5km of the development.

8.127 On the other side of the balance are long term, significant benefits in the public interest, as set out above. Some of those benefits (sea defence and decontamination) directly contribute to protecting the long-term integrity of the Habitats sites. While it is not possible to quantify the impact of long-term leachate contamination on the integrity of the SPA/Ramsar site, the risk of such contamination is real and present,

138 https://curia.europa.eu/juris/document/document.jsf?text=&docid=56397&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=11738122

139 https://jncc.gov.uk/jncc-assets/RIS/UK11055.pdf

and it is reasonable to assume it would have adverse effects at least as harmful as the reasonable worst-case direct habitat loss that might be caused by the PLP3 allocation.

8.128 How the balance is struck is ultimately a matter of judgement. The authors collective professional judgement is that the afore-mentioned imperative public interest benefits clearly OVERRIDE the risk or certainty of adverse effects on the integrity of the Portsmouth Harbour SPA and Ramsar Site arising from the site's allocation for development as set out in draft policy PLP3. That said, as Council Members are the elected representatives of the competent authority, their views of the public interest carry particular weight and they will ultimately need to endorse or reject this judgement, having regard to the expert evidence in this HRA.

Compensatory Measures

8.129 To ensure deep water access to the new marine hub quaysides dredging of approximately 2.1ha of intertidal habitat within Portsmouth Harbour SPA/Ramsar site will be required, converting it to subtidal habitat. This will reduce the overall net extent of intertidal habitat available for bird roosting and foraging within the SPA/Ramsar. Other aspects of development delivery are likely, though not certain, to involve land-take from the SPA/Ramsar site depending on how the development is designed for the planning application. Placement of bridge piers in the intertidal zone are likely to be needed and would involve the loss of up to 0.3ha of intertidal habitat within the SPA/Ramsar. Up to 0.5ha of subtidal habitat could potentially be lost if possible areas of reclamation identified in the Local Plan are realised. For purposes of realistic worst-case assessment, this HRA has also identified the potential for loss of up to 3.6ha of terrestrial habitat in south of the firing range on Tipner West. This totals 2.1ha of inevitable intertidal habitat loss, 0.5ha of likely subtidal and 0.3ha of likely intertidal habitat loss (for the bridge piers), and 3.6ha of possible terrestrial habitat loss.

8.130 The progression of an appropriate compensation strategy for the site allocation has been on-going since the City Deal grant was awarded and project team put in place. This initially progressed to detailed landowner negotiations across a Solent-wide search area and for the purposes of compensating the previous 'super peninsula' proposals for the site.

8.131 The compensation strategy was informed, in part, by the development of a bespoke 'SPA Metric', originally developed by promoter consultants Environment Bank, based upon DEFRA biodiversity metric principles, and to provide a quantitative assessment of SPA/Ramsar impacts and appropriate levels of compensation. Unlike the Defra biodiversity metric, the SPA metric does not account for habitat distinctiveness, but takes into account the relative functionality of the habitat before and after development for the qualifying Annex 1 bird species concerned. The project promoters are continuing to refine the bespoke SPA metric in consultation with the Regulatory Panel.

8.132 In summary, the bespoke SPA metric takes account of the following parameters:

- SPA/Ramsar function, based on bird survey data and other available information, as previously characterised by Environment Bank;
- Habitat condition, based on SSSI condition assessment information, expert judgement and precautionary assumptions;
- Time taken to reach target habitat function and condition; and
- Difficulty in creating target habitat function and condition.
- In calculating compensation requirements the following assumptions have been made, as informed through consultation to date with the Regulatory Panel:
- The baseline condition of SPA habitats is assumed to be ‘Good’, on the basis of the duty to restore to favourable condition;
- The function of the terrestrial SPA land to the south of the firing range is assumed to be ‘High’, again, on the basis of the duty to restore habitats to favourable condition;
- Through appropriate mitigation of urban effects there will be no functional habitat loss within retained terrestrial SPA land south of the firing range;
- Bridge/road provision for both options has the same impact parameters;

- Coastal squeeze impacts assumed identical for both options; and
- Dredge channel impacts assumed identical for both options.

8.133 In addition to the parameters used within the baseline SPA metric calculation, the post-development calculation uses additional multipliers to take account of the difficulty in creating compensation habitat and the time taken to reach the required condition. The metric has been used to calculate the amount of land potentially required to secure adequate compensation for impacts to SPA habitat arising from development Options A and B set out above at Figures 5 and 6, on the basis that SPA habitat loss would need to be compensated on a like-for-like basis (e.g. terrestrial for terrestrial, intertidal for intertidal, and sub-tidal for sub-tidal), with habitat creation multipliers varying depending on the type of habitat proposed as compensation.

8.134 The following types of compensatory provision are required:

- Terrestrial compensation – creation of undisturbed semi-natural terrestrial grazing;
- Intertidal compensation - conversion of agricultural land (currently unsuitable for SPA birds) to intertidal; and
- Sub-tidal compensation – conversion of intertidal to sub-tidal through dredging.
- Not taking account of wider professional judgement, the metric currently indicates a need for between 10ha and 14.5ha of compensatory habitat (approximately), split as follows:
- Approximately 9ha intertidal compensatory habitat;
- Approximately 1ha of sub-tidal compensatory habitat; and
- Approximately a further 4.3ha of terrestrial habitat compensation if Option B is taken forward as this Option involves development on the terrestrial habitat within the SPA/Ramsar that is used by SPA/Ramsar birds.

8.135 In the process of identifying potential locations for compensatory provision the site promoter team has identified ten sites across the North Solent between Portsmouth Harbour and Chichester Harbour amounting to approximately 400ha. The smallest parcel is c. 5ha in area with the largest being 126ha in area. Approximately 344ha of this total is suitable for intertidal or subtidal habitat creation and approximately 62ha is suitable for terrestrial habitat creation. This sums to more than 400ha because some parcels are suitable for both/either intertidal or terrestrial habitat. Approximately 40% of this land is in public body ownership (such as Portsmouth City Council, Hampshire County Council and The Crown Estate) with the remainder in private landowner hands. Site owners have expressed willingness in broad terms to contribute land to compensation.

8.136 The sites identified by the site promoter team are commercially confidential. Aecom and members of the Council's LPA team have, however, been permitted to review those parcels for the purposes of this HRA and are satisfied that there is easily sufficient land that is both suitable and available to compensate any loss of protected habitat caused by the adoption of Policy PLP3 and available. The Council as LPA is working with the promoter team to explore what information about the sites can be made publicly available and how the Secretary of State, PINS and relevant statutory consultees can receive information about those sites, if necessary on a confidential basis.

8.137 The final approach to compensatory habitat will continue to be discussed between the PCC Promoter team and the Regulatory Panel, having regard, for instance, to any preference for high-tide roosting habitat over inter-tidal/sub-tidal options, which may favour a more local solution, such as island recharge within Portsmouth Harbour. Moreover, at the project-stage, the SPA metric will need to be accompanied by a careful assessment of the baseline evidence in relation to both the existing site and the proposed compensation site and professional ecologist assessment will be required.

8.138 Some members of the Regulatory Panel have criticised aspects of the metric approach used by the promoter to calculate the compensation requirement. However, due to the area of available land identified a considerable margin for error is built into the proposals at this stage (c. 400ha of land identified as suitable compared to 14.5ha of compensation currently calculated to be required). As such, amendments to the

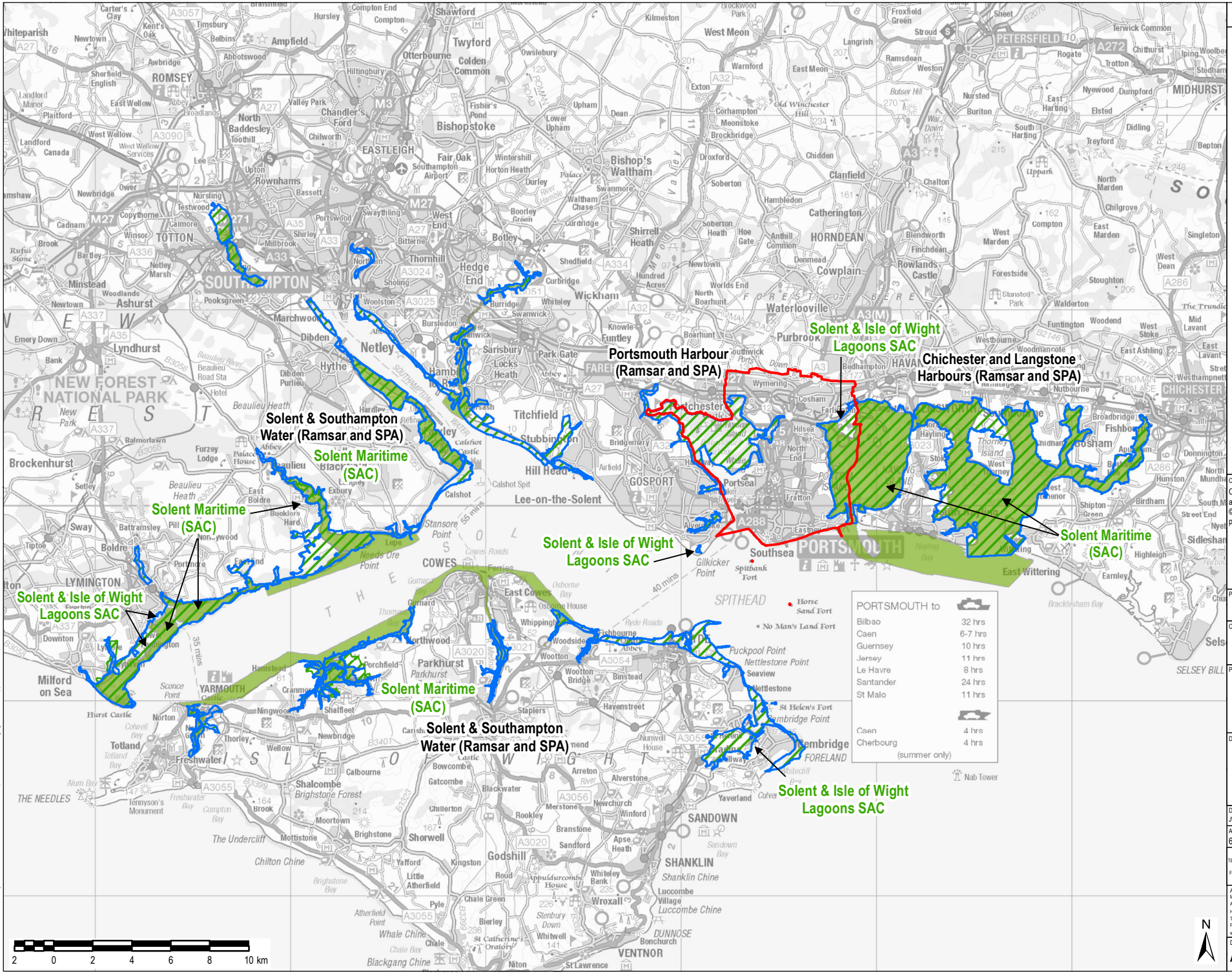
calculations at the project-stage, or in an HRA to accompany a planning application, are unlikely to change compensation requirements to such an extent that suitable and available land is inadequate.

8.139 At the strategic planning stage, AECOM considers that there can be high confidence that across these parcels sufficient areas can be secured to deliver the necessary compensatory habitat once the quantum and nature of the required compensatory habitat is known.

Overall conclusion on the Derogations Tests

8.140 The overall conclusions of the preceding assessment of each part of the derogation tests, is that sufficient information exists at the Local Plan level to be able to conclude that the Tipner West and Horsea Island East (Policy PLP3) that a) there are no feasible alternatives to this allocation that would be less damaging to the integrity of the SPA/Ramsar site while still meeting the objective set out in section 8.1 of this HRA as expressed in the Local Plan, b) there are IROPI as to why the Local Plan should be adopted with Policy PLP3 intact despite the harm caused to Portsmouth Harbour SPA/Ramsar site and c) there is sufficient suitable land identified for delivery of compensatory measures to conclude that suitable compensation can be secured at the planning application level once the quantum and nature of the required compensatory habitat is known.

Appendix A Map of Habitats Sites



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- Portsmouth City boundary
- Ramsar
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)

Purpose of Issue: DRAFT

Client: PORTSMOUTH CITY COUNCIL

Project Title: HRA OF THE EMERGING PORTSMOUTH LOCAL PLAN

Drawing Title: EUROPEAN SITES WITHIN 10KM OF PORTSMOUTH CITY

Drawn	Checked	Approved	Date
JW	TD	DW	24/08/2021

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Drawing Number: APPENDIX A

Rev: 01

File Name: I:\5004 - Information Systems\60586784 Portsmouth SA\02_Maps\HRA of the Emerging Local Plan\Appendix A - European Sites with 10km.mxd

Appendix B Screening for Likely Significant Effects

Table 8: Likely Significant Effects (LSEs) test for policies included in the emerging Portsmouth Local Plan.

Each policy is assessed for potential impact pathways linking to Habitats sites. If LSEs cannot be excluded and Appropriate Assessment is needed, the final column is marked in orange, otherwise the last cell is marked green.

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
Chapter 3 – Development Strategy		
Core Policy PLP1: Design	This policy seeks to ensure a high standard and quality of design. Proposals will be assessed on certain criteria including: • Making a positive contribution towards achieving the Portsmouth Design Vision • Demonstration of key design and placemaking characteristics: – Context – Identity – Built form – Movement – Nature – Public spaces – Uses – Homes – Resources – Lifespan • Large scale development and development at sensitive locations should have positive regard to any design code or design guide relevant to the site. • Development proposals should combat crime through their design and layout • Developments should not give rise to unacceptable adverse impacts in relation to amenity of occupiers • Developments should avoid, minimize and mitigate where necessary the impact of: – Outlook / aspect – Sense of enclosure – Direct or perceived overlooking / privacy – Daylight / sunlight – Noise – Odour	**The are no Likely Significant Effects of this policy on Habitats Sites.** This is a design management policy that identifies important design criteria for new developments in Portsmouth City. Some of these features (building height, lighting, fenestration) clearly relate to impact pathways, such as impacts on SPA / Ramsar bird flightlines. However, no specific detail on any of these design criteria is provided in this policy. **Therefore, there are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	– Glare – Micro-climatic effects • Developments for tall buildings are subject to additional criteria	
Core Policy PLP2: Climate Emergency	1. Development proposals will be supported provided that they: a) Reduce greenhouse gas emissions and store carbon; b) Minimise energy use and demonstrate that residual energy demand can be met with renewable forms of energy; c) Maximise the generation of energy from renewable and low carbon sources of energy; d) Are designed to adapt and be resilient to the impacts of local climate change; e) Reduce the risk of flooding both now and in the future, taking account of predicted sea level rises and the impact on areas vulnerable to coastal change; f) Maximise water re-use and the protection of water resources; g) Prioritise active travel and effective public transport over car use wherever possible; h) Deliver green infrastructure and enhance biodiversity; i) Prevent and minimise waste and encourage re-use, recycling, and resource recovery; and j) Encourage the reuse of existing buildings and structures. 2. Development proposals for major development must be supported by a Sustainability Statement, which clearly demonstrates how it meets the objectives set out in Part 1 of this policy	**The are no Likely Significant Effects of this policy on Habitats Sites.** This is a design management policy that supports environmentally friendly development. **There are no specific allocations made in this policy. Therefore, there are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Chapter 4 – Strategic Sites		
Strategic Site Allocation Policy PLP3: Tipner West & Horsea Island East	Policy allocates land at Tipner West & Horsea Island East, for mixed use development including: • 58,000m^2 marine employment floor space • 814 to 1,250 residential dwellings • A bridge between Tipner West and Horsea Island East for the use of sustainable transport modes only; • Flood defences along the peninsula edges; • Shops selling essential goods, including food, where the shop's premises do not exceed 280m^2; and • Meeting places for the principal use of the local community (class F2b). Development proposals for these uses will be permitted provided that they meet additional criteria including: • Create a landmark gateway to the City of Portsmouth with a site-wide master plan and design code • Designing of buildings and spaces to break down the barrier (physical and perceived) created by the M275 and Portsbridge Creek. • Allowing views from Tipner West and notable landmarks within the zone of visibility including Portchester Castle, the Spinnaker Tower and His Majesty's Naval Base • Integrating green and blue infrastructure into the masterplanning and design of the development; • Identifying and incorporate opportunities to conserve, restore and recreate priority habitats and ecological networks;	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for Tipner West and Horsea Island East, which allocates the 814 to 1,250 dwellings and 58,000m^2 of marine employment space The following impact pathways are associated with an increase in population size, employment area and tourism opportunities: • Recreational pressure (in Habitats sites and functionally linked habitat) • Loss of functionally linked habitat • Water quality • Water quantity, level and flow • Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction)

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	• Except for the minimum dredging necessary to establish and maintain deep water access to the marine hub, avoid the loss of, or damage to, SPA/Ramsar habitats. If that is not viable or feasible, minimise such loss, or damage, to that required to enable the viable and feasible development of the site in line with the development quantums set out in this Policy whilst protecting the integrity of the international, national and local nature designations; • Incorporating car-free streets where feasible; • Improving off-road pedestrian and cycle provision linking Port Solent and Tipner to the City Centre and nearby public open spaces; • Providing safe and efficient vehicular access to and from the M275 and the surrounding non-strategic road network; • Deliver or contribute proportionally to relevant transport and highways mitigation measures, identified in the STP and/or IDP; • Mitigating likely significant effects from recreational disturbance; • Providing for public access along the waterfront where feasible; • Delivering appropriate surface water and foul drainage infrastructure together with required nutrient neutrality and water usage mitigation measures; • Implementing land raising and construction of flood defences informed by the SFRA Level 1 and 2 • Deliver surface water management measures for high tide events • Mitigating and remediate contamination from current and historic uses; • Providing a skills and employability plan; The Listed Buildings and Scheduled Monument must be retained, restored and re-used as appropriate. A segregated bus way between Tipner West and Horsea Island via a new bridge and on to Port Solent will be established and operated. The deep water access to Tipner Point and the new marine hub quaysides will be maintained. A shadow, project level Habitat Regulations Assessment (HRA) will be required to be submitted along with the planning application, and as necessary for any phased applications, to the local planning authority as competent authority. On account of the fact that delivery of the Policy will inevitably result in the loss of some designated SPA/Ramsar habitat and will likely result in the loss of some functionally linked habitat, the HRA must among other things: a. provide sufficient evidence for the local planning authority to conclude, in consultation with Natural England and Secretary of State, that all three derogation tests have been passed. b. demonstrate that any loss of functionally linked habitat, including that identified as a primary or secondary support area in the Solent Waders and Brent Goose Strategy , will be mitigated through the provision of replacement functionally linked supporting habitat of equal or greater quality and quantity, which fulfils the same special contribution and particular function of the areas lost or damaged for the same species of birds. Planning applications may come forward separately or in phases. All proposals need to demonstrate consistency with other permissions granted and emerging proposals. Planning applications will need to demonstrate potential solutions if future phases do not come forward within an agreed timeframe.	• Atmospheric pollution • Impacts on flightlines • Coastal squeeze • Permanent habitat loss **Due to these linking impact pathways, this policy is screened in for Appropriate Assessment.**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
Policy PLP4: Tipner East	Policy allocates land at Tipner East, for mixed use development including: • 1,056 residential dwellings • A new transport hub with 840 m^2 ancillary commercial uses • Commercial and community uses including a convenience store, a restaurant/café and a community space. • Flood defences in line with robust climate change scenarios Development proposals for these uses will be permitted provided that they meet additional criteria including: • Create a new landmark gateway to the City of Portsmouth ; • Designing of buildings and spaces to break down the barrier (physical and perceived) created by the M275 and Portsbridge Creek. • Integrating green and blue infrastructure into the masterplanning and design of the development; • Incorporating car-free streets where feasible; • Improve off-road accessible pedestrian and cycle provision linking with the city centre and local open space and local facilities; • Providing safe and efficient vehicular access to and from the M275 and the surrounding non-strategic road network; • Deliver or contribute proportionate transport and highways mitigation measures identified in the STP and IDP; • Providing for public access along the waterfront where feasible and mitigating likely significant effects from recreational disturbance; • Safeguard the routes of the Pilgrims Trail, the King Charles III England Coast Path and National Cycle Route 22 through the site • Providing appropriate compensation and mitigation measures to the satisfaction of the local planning authority and Natural England in regard to the Secondary Support Sites P136 and P139 of the Solent Waders and Brent Goose Strategy; • A shadow, project level Habitat Regulations Assessment (HRA) will be required to be submitted along with the planning application(s) to the Local Planning Authority as competent authority. This must provide sufficient evidence for the Local Planning Authority to undertake an Appropriate Assessment, in consultation with Natural England, and to be satisfied that the mitigation measures proposed by the applicants would result in no significant effects upon the integrity of the National Site Network, whether alone or in combination with other plans and/or projects in the area; Delivering surface water management measures to make provision for storage during high tide events. • Implementing land raising and construction of flood defences informed by the SFRA Level 1 and 2 • Mitigating and remediating for contamination from current and historic uses; and • Planning applications may come forward separately or in phases. All proposals need to demonstrate consistency with other permissions granted and emerging proposals. Planning applications will need to demonstrate potential solutions if future phases do not come forward within an agreed timeframe	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for Tipner East, which allocates the 1,056 dwellings and a new transport hub. The following impact pathways are associated with an increase in population size, employment area and tourism opportunities: • Recreational pressure (in Habitats sites and functionally linked habitat) • Loss of functionally linked habitat • Water quality • Water quantity, level and flow • Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) • Atmospheric pollution • Impacts on flightlines • Coastal squeeze • Permanent habitat loss **Due to these linking impact pathways, this policy is screened in for Appropriate Assessment.**
Policy PLP5: Lakeside North Harbour	Lakeside North Harbour is allocated as an employment-led location to provide at least 50,000sqm of office uses. Alternative commercial uses may be permitted, if it can be demonstrated that there is insufficient market demand for offices at this location.	**Likely Significant Effects on Habitats Sites cannot be excluded.**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	A new secondary access point at Lakeside to be provided on to the Western Road (A27) in accordance with the general arrangement plan (figure XX) of the Strategic Transport Assessment, or such alternative as may be developed and agreed with PCC Highways. Development proposals will be permitted provided that they meet all of the development requirements, including: • A masterplan and design code for the whole site • A high standard and quality of design sympathetic to the campus style setting and ecological value; • An employment skills plan • To meet the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended), the developer should provide evidence that the allocated site will not result in the loss of habitat that is functionally linked (Candidate Site P138) to Solent's SPAs / Ramsars. To demonstrate this, non-breeding bird surveys between October and March (typically two survey seasons) may be required to determine if the allocation itself or land adjacent to it, constitute an area of significant supporting habitat. If the site is found to be functionally linked to Habitats sites, mitigation and / or avoidance measures will be required, and the planning application will need to be supported by a bespoke Habitats Regulations Assessment to ensure that the development does not result in adverse effects on site integrity.. Appropriate avoidance and mitigation measures to be provided to the satisfaction of the local planning authority and Natural England • A biodiversity net gain of at least 20% • An Arboricultural Impact Assessment, Arboricultural Method Statement and associated Tree Protection Plan • A site specific Flood Risk Assessment will be required • Flood management measures should be incorporated within the site in accordance with the SFRA Level 1 and 2 • Effective surface water management measures for high tide events • The provision of a Sustainable Drainage System (SuDS) to mitigate the risk of surface water flooding. • Provision made for remediation of any current and historical contamination of the site. • Effective access arrangements that are safe and suitable for all users. • A Travel Plan to minimise car use by current and prospective occupants of Lakeside and to maximise use of sustainable modes of transport, • Deliver or contribute proportionally to the relevant transport and highways mitigation measures identified within the Local Plan Strategic Transport Assessment and/or Infrastructure Development Plan	This is the strategic development policy for Lakeside North Harbour which allocates approx. 50,000m^2 office-led floorspace in the plan period. The following impact pathways are associated with an increase in employment area. Water quality • Water quantity, level and flow • Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) • Atmospheric pollution • Impacts on flightlines **Due to these linking impact pathways, Policy PLP5 is screened in for Appropriate Assessment.**
Policy PLP6: Portsmouth City Centre	This policy allocates Portsmouth City Centre, for the comprehensive mixed-use development of the following uses: • 4,158 dwellings • 20,000m^2 (Gross) of employment office space (net 1,546m^2) • 2.9ha park at City Centre North Development proposals will be permitted provided that they meet all of the development requirements, including: • Enhancing the city centre's commercial uses and supporting culture, arts, civic and leisure uses. Including space for a regular market. • Protecting and enhancing the existing open spaces • Provision is made for a space for a regular market on Commercial Road; • Improve pedestrian and cycle connectivity to the surrounding residential areas;	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for Portsmouth City Centre, which allocates new dwellings (4,158), new commercial floorspace (net 1,546m^2). The following impact pathways are associated with an increase in population size and employment area: • Recreational pressure (in Habitats sites and functionally linked habitat)

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	• Incorporating car-free streets with Mobility-as-a-Service and prioritise sustainable transport modes; • Deliver or contribute proportionally to the relevant transport and highways mitigation measures identified within the Local Plan Strategic Transport Assessment and/or Infrastructure Development Plan • Ensure the air quality in adjoining AQMAs is not worsened • Provision made for remediation of any current and historical contamination of the site. • Complement the proposals set out in the University of Portsmouth Estate Masterplan where relevant; • Demonstrate how its design enhances the centre's appearance and considers the needs and safety of all its users including reducing crime, through the provision of a design code; • Major development including major commercial development should provide an employment and skills plan to demonstrate how the proposals provide opportunity for local workers; • Major Development should provide a travel plan to demonstrate how it is contributing to a shift to sustainable and public transport in in the centre; and • Development protects trees within the City Centre and takes opportunities to plant more and provide enhanced greening. This policy breaks down the city centre area is divided into areas, with differing design goals for the four areas in which proposals are supported. These areas are City Centre North, City Centre Commercial Area, Station Road Regeneration Area, Guildhall Cultural Regeneration Area.	• Loss of functionally linked habitat • Water quality • Water quantity, level and flow • Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) • Atmospheric pollution • Impacts on flightlines **Due to these linking impact pathways, Policy PLP6 is screened in for Appropriate Assessment.**
Policy PLP7: Fratton Park and The Pompey Centre	This policy allocates Fratton Park and the Pompey Centre, for the comprehensive mixed-use development of the following uses: • Expansion to the north stand of Fratton Park Football Stadium; • Approximately 710 residential dwellings with ground floor active uses. • Supporting hotel (Approx 145 rooms) • Mixed conference and event facilities Development will: • include an off-road pedestrian and cycle link from Fratton Train Station to Fratton Park. • Incorporate active frontages and entrances that promote activity • Planning applications may come forward separately or in phases. All proposals need to demonstrate consistency with other permissions granted and emerging proposals. Planning applications will need to demonstrate potential solutions if future phases do not come forward within an agreed timeframe Develop proposals will be permitted if they meet the site specific requirements, which include: • The design, height and density of development integrates with the existing context and character of the site • Effective, safe access arrangements • Deliver or contribute proportionally to the relevant transport and highways mitigation measures identified within the Local Plan Strategic Transport Assessment and/or Infrastructure Development Plan • A travel plan and transport assessment provided • Sustainable Drainage System (SuDS) Provision • A network of interconnecting green and public access corridors throughout the site	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for Fratton Park and the Pompey Centre, which allocates the following number of dwellings, employment areas and leisure uses: • Expansion to Football Stadium, • 710 dwellings, • Hotel, conference and event facilities The following impact pathways are associated with an increase in population size and employment area: • Recreational pressure (in Habitats sites and functionally linked habitat) • Loss of functionally linked habitat • Water quality • Water quantity, level and flow • Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) • Atmospheric pollution

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
		• Impacts on flightlines **Due to these linking impact pathways, Policy PLP7 is screened in for Appropriate Assessment.**
Policy PLP8: St. James' and Langstone Campus	This policy allocates St James's and Langstone campus for a mixed use development comprising healthcare facilities, education facilities, recreation, sports and community facilities, 417 dwellings. Planning permission for the St James's part of the site has the site specific requirements including: • Conserving the setting and significance of heritage assets in the hospital grounds. • A heritage statement for all proposed development • Conserve or enhance the district parkland landscape and open character • Provide Arboricultural Impact assessment and method statement for implementation • Integrating the following open spaces into new development: The St James's Hospital Cricket Pitch, The Dog Park, Land to the north west of the listed chapel, and to the east and west of Chapel Way. • Providing north-south pedestrian and cycle links from Locksway Road to Longfield Road. • Provides off site highway network improvements. Planning permission for the Langstone Campus part of the site has the site specific requirements including: • A landscape and visual impact assessment • Retention of playing fields and pitches where possible • Retention and enhancement of public access • Enhancement and retention of public access to open space and playing fields • The north-south bus / cycleway connection along Furze Lane is retained and enhanced • Safe and accessible off-road walking and cycle routes All developments at the site should provide: • Mitigation for direct recreational disturbance on Nationally and Locally designated habitat sites • A site specific flood risk assessment and appropriate flood management measures • A sustainable drainage system • A travel plan and transport assessment • Deliver or contribute proportionally to the relevant transport and highways mitigation measures identified within the Local Plan Strategic Transport Assessment and/or Infrastructure Development Plan • Transport links including road improvements and pedestrian/cycle links across the site and to wider parts of the City • Proposals should meet the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended). The developer should provide evidence that the allocated site will not result in the loss of habitat that	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for the St. James' and Langstone Campus, which allocates the 417 dwellings. The following impact pathways are associated with an increase in population size and employment area: • Recreational pressure (in Habitats sites and functionally linked habitat) • Loss of functionally linked habitat • Water quality • Water quantity, level and flow • Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) • Atmospheric pollution • Impacts on flightlines • Coastal squeeze **Due to these linking impact pathways, Policy PLP8 is screened in for Appropriate Assessment.**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	is functionally linked (Core Area P23B, Secondary Support Area P25) to Solent's SPAs / Ramsars. To demonstrate this, non-breeding bird surveys between October and March (typically two survey seasons) may be required to determine if the allocation itself or land adjacent to it, constitute an area of significant supporting habitat. If the site is found to be functionally linked to Habitats sites, mitigation and / or avoidance measures will be required, and the planning application will need to be supported by a bespoke Habitats Regulations Assessment to ensure that the development does not result in adverse effects on site integrity;	
Policy PLP9: Horsea Island Open Space	This Policy allocates Horsea Island Open Space for development including: • Public open space; • Improved habitat for wildlife; • Infrastructure supporting the provision of the open space; • Infrastructure supporting the remediation of the former landfill; • Provision of a segregated busway / cycle and pedestrian link between Tipner West and Port Solent, via a new bridge at Horsea Island East. Development proposals for the above-named uses will be permitted provided that they meet all of the following site-specific development requirements: • The open space provision should consider the needs of users and provide multi- functional spaces; • The open space provides for a mosaic of habitat that links to and supports the habitat of the neighbouring Portsmouth Harbour Special Protection Area and recognises the role of the site as habitat for waders and Brent Geese; • To meet the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended), the developer should provide evidence that the allocated site will not result in the loss of habitat that is functionally linked to Solent's SPAs / Ramsars . To demonstrate this, non-breeding bird surveys between October and March (typically two survey seasons) may be required to determine if the allocation itself or land adjacent to it, constitute an area of significant supporting habitat. If the site is found to be functionally linked to Habitats sites, mitigation and / or avoidance measures will be required, and the planning application will need to be supported by a bespoke Habitats Regulations Assessment to ensure that the development does not result in adverse effects on site integrity.' Proposals will need to comply with and Policy PLP 42 of this plan and take account of the guidance set out in and the Solent Waders and Brent Goose Strategy Guidance on Mitigation and Off-setting Requirements; • Proposals will need to be in line with the restrictions of the MoD exclusion zone; • Public access will be restricted from areas needed for the safe extraction of gases from the former landfill; • Proposals will take account of the approved plan for landscaping and maintenance of the former landfill site; • Allow views to and from the open space and notable landmarks, within the zone of visibility;	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy supports the habitat of the neighbouring Portsmouth Harbour Special Protection Area. **There are no impact pathways that link this policy to Habitats Sites. Therefore, the policy is screened out from Appropriate Assessment.**
Chapter 5: Site Allocations		

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
Policy PLP10: Land West of Portsdown Technology Park	This policy allocates Land West of Portsdown Technology Park for the provision of 12,500m^2 of employment land for research and development and/or manufacturing. Development proposals for this must meet the site specific requirements including: • Providing an employment and skills plan • Provide evidence for ground conditions and contamination, making provision for remediation as necessary; • Ensuring safe and suitable access arrangements; • Provide a Travel Plan to minimise car use and maximise the use of sustainable transport; • Requiring a landscape design strategy, considering views within an agreed zone of visibility and viewpoints to the north and south; • Landscaping that enhances the site's contribution to the downland setting and provides links to green infrastructure; • Deliver or contribute proportionally to the relevant transport and highways mitigation measures identified within the Local Plan Strategic Transport Assessment and/or Infrastructure Development Plan • Restricting development to the previously developed land; • Responding positively to local heritage assets.	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for Land West of Portsdown Technology Park, which allocates new employment floorspace (12,500m^2). The following impact pathways are associated with an increase in employment area: • Loss of functionally linked habitat • Water quality • Water quantity, level and flow • Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) • Atmospheric pollution • Impacts on flightlines **Due to these linking impact pathways, Policy PLP10 is screened in for Appropriate Assessment.**
Policy PLP11: Port Solent	Land is allocated at Port Solent for the provision of 500 residential uses and for marine related uses. Development proposals for this will be permitted if they meet site specific requirements including: • A conceptual framework masterplan to ensure high quality development responding positively to the existing character and land uses; • Providing buildings designed to a high standard that complement the existing built form • Including measures to avoid and mitigate impacts, including recreational impact, on the adjacent SPA, SSSI and Ramsar Site; • Including measures to protect and enhance the SPA supporting habitats to the south of Marina Keep; • Provide evidence that the site allocation will not result in loss of functionally linked habitat to Solent SPAs/Ramsar (P48A/P48B) • A site specific Flood Risk Assessment should be submitted; • Safeguarding land for flood defence structures. Improved flood defences should be delivered at Port Solent to ensure any development is safe from floodwaters for its lifetime; • Improving facilities for cycling, walking and public transport linking to and enhancing transport networks; • A Travel Plan and Transport Assessment; • Deliver or contribute proportionally to the relevant transport and highways mitigation measures identified within the Local Plan Strategic Transport Assessment and/or Infrastructure Development Plan	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for Port Solent, which allocates new dwellings (500). The following impact pathways are associated with an increase in population size: • Recreational pressure (in Habitats sites and functionally linked habitat) • Loss of functionally linked habitat • Water quality • Water quantity, level and flow • Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) • Atmospheric pollution • Impacts on flightlines

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	• Safeguard the existing cinema, gym, retail and restaurant uses from redevelopment; • Providing leisure, retail and restaurant uses at this location unless there is proven to be insufficient • Safeguard pedestrian access to the waterfront; • Ensure the amenity of occupiers / users of any new development can be adequately protected; • Take into account and where appropriate protect viewpoints and the visual impact across Portsmouth Harbour.	• Coastal Squeeze **Due to these linking impact pathways, Policy PLP11 is screened in for Appropriate Assessment.**
Policy PLP12: St John's College	The policy makes an allocation for land at St John's College for the development of 212 dwellings Development proposals will be permitted if they meet site specific requirements including: • Provide a masterplan ensuring development is high quality and provides improved access arrangements • Retaining and restoring historic assets on the site; • Conserving or enhancing Owen's Southsea Conservation area and retaining and protecting trees on the site; • Responding positively to existing heritage assets on the site; • Enhancing pedestrian connectivity through the site • Not preventing public access to the site • Take opportunities for new publicly accessible open space on site; • Creating greening on site; • Providing reduced car parking provision; • A Travel Plan and Transport Assessment. • Flood Management measures	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for St John's College, which allocates new dwellings (212). The following impact pathways are associated with an increase in population size: • Recreational pressure (in Habitats sites and functionally linked habitat) • Loss of functionally linked habitat • Water quality • Water quantity, level and flow • Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) • Atmospheric pollution • Impacts on flightlines **Due to these linking impact pathways, Policy PLP12 is screened in for Appropriate Assessment.**
Policy PLP13: Fraser Range	Fraser Range is allocated for development of: • 134 dwellings; • New sea wall flood defences and a related walkway, including removal and reinstatement of listed tank traps; • Construction of access road, parking and landscaping works. Development proposals will be permitted if they meet development requirements including: • Retaining the open green character of the eastern part of the site, and appropriately integrating and enhancing the landscape setting of the rest of the site; • Protecting areas within or near the site that are part of the National Site Network, Ramsar Sites, Sites of Special Scientific Interest (SSSI) and any other designated habitat sites;	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for Portsmouth City Centre, which allocates new dwellings (134). The following impact pathways are associated with an increase in population size: Recreational pressure (in Habitats sites and functionally linked habitat) Loss of functionally linked habitat

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	• A Habitat Regulations Assessment (HRA) of the site, and appropriate mitigation for any direct recreational disturbance upon the adjacent Langstone and Chichester Harbour SPA and/or Solent Maritime SAC; • To meet the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended), the developer should provide evidence that the allocated site will not result in the loss of habitat that is functionally linked to Solent's SPAs / Ramsars (P142 / P144). The developer will provide mitigation of any alone impacts on the habitat that is functionally linked to Solent's SPAs / Ramsars (P78 / P142 / P144). This is in addition to the contributions provided through the Solent Recreation Mitigation Strategy. Must respond positively to heritage assets on site Provide a Heritage Statement assessing the significance and impact of all proposals on any heritage assets Land should be safeguarded for the delivery, management and maintenance of a seawall and/or other flood defence(s) for the development lifetime. A site-specific Flood Risk Assessment and surface water management measures Secure the construction of an enhanced and appropriate access road, and landscaping works; Provide safe, appropriate, publicly accessible off-road walking and cycling routes linking the site to the nearby Fort Cumberland Road to the north west, but not increasing disturbance of the ecologically sensitive parts of the site to the east; Development proposals that gate off the whole site and prevent public access will be refused; and A Transport Assessment is required including mitigation measures and sustainable transport initiatives.	Water quality Water quantity, level and flow Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) Atmospheric pollution Impacts on flightlines Coastal Squeeze **Due to these linking impact pathways, Policy PLP13 is screened in for Appropriate Assessment.**
Policy PLP14: The News Centre, Hilsea	The News Centre, as shown on the Policies Map, is allocated for the development of a purpose built all-electric bus depot and 100 homes. Small scale ancillary uses may be allowed depending on the type and scale, impacts on the surrounding area and nearby centres Development proposals for the above named uses must meet site specific development requirements including: High quality design that maximises the development's gateway location Retains and enhances the distinct character and green infrastructure of the site; including protection of trees on and bordering the site with an arboricultural assessment to ensure this occurs; A design that responds to and celebrates the original building's historic presence and architecture; Delivery of homes at the high end of medium density range Incorporating appropriate mitigation and design measures to minimise and protect residential development from harmful noise and air pollution; Access for a high level of use from buses to and from A2047 and A3. Safe and convenient local pedestrian and cycle links particularly along north-south main roads; A Travel Plan and Transport Assessment A site specific Flood Risk Assessment will be prepared and submitted and flood management measures incorporated.	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for The News Centre, Hilsea, which allocates new dwellings (100). The following impact pathways are associated with an increase in population size: Recreational pressure (in Habitats sites and functionally linked habitat) Loss of functionally linked habitat Water quality Water quantity, level and flow Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) Atmospheric pollution Impacts on flightlines

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
		Due to these linking impact pathways, Policy PLP14 is screened in for Appropriate Assessment.
Policy PLP15: Somers Orchard	Somers Orchard is allocated for the development of 565 dwellings (293 Net), approximately 500sqm commercial space and approximately 440sqm community space. Development proposals for the above-named uses will be permitted provided that they meet the site-specific requirements: Replaces the 272 affordable homes from Horatia and Leamington with new affordable homes; Provides 30% net homes as affordable homes or in case of Build to Rent scheme provides 20% of affordable private rented; Creating open space and landscaping that providing for the needs of the community; Biodiversity Net Gain of at least 20% is demonstrated and secured on site; Improves connectivity, permeability and legibility through the development, prirotised cycling and walking; Includes tall buildings and high density blocks in order to achieve the densities needed to meet the required level of housing; Provides landscaping to enhances the setting of the retained Birmingham Blocks; Incorporate car-free streets wherever feasible, with 'Mobility as a Service' and sustainable transport modes prioritized. Takes advantage of the site's sustainable location to provide a reduced car parking ratio; Any new build development proposals for the site must respond positively to the presence of nearby heritage assets.	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is the strategic development policy for Somers Orchard, which allocates 566 dwellings (293 net), approximately 500sqm commercial space and approximately 440sqm community space. The following impact pathways are associated with an increase in population size: Recreational pressure (in Habitats sites and functionally linked habitat) Loss of functionally linked habitat Water quality Water quantity, level and flow Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) Atmospheric pollution Impacts on flightlines **Due to these linking impact pathways, Policy PLP15 is screened in for Appropriate Assessment.**
Chapter 6 – Housing		
Policy PLP16: Housing Target	The council will make provision for at least 13,603 net additional dwellings between 2020 and 2040. Housing has or will be provided through; Completions (2020-2023) Sites that have planning permission as of 31 March 2023 (with 15% non implementation discount); Strategic sites; Allocations in the local plan; Identified non strategic housing sites from HELAA; Windfall development of small sites;	**Likely Significant Effects on Habitats Sites cannot be excluded.** This text identifies that the Portsmouth Local Plan will provide for at least 13,603 additional dwellings in the city between 2020 and 2040. The policy also allows for unexpected windfall development, which is inherently difficult to

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	Equivalent contribution from HMOs Equivalent contribution from C2 accommodation Contribution to unmet housing need will be sought from neighbouring local authorities including 800 homes in the Fareham Local Plan. Neighbourhood plans that allocate additional land for housing will be supported if the meet local housing need and are in-keeping with the strategic policies of the local plan.	assess because it is not known where and to what degree this may be coming forward. The following impact pathways are associated with an increase in the local population: Recreational pressure Loss of functionally linked habitat Water quality Water quantity, level and flow Atmospheric pollution Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) Coastal squeeze Impacts on flightlines **Due to these linking impact pathways, Policy PLP16 is screened in for Appropriate Assessment.**
Policy PLP17: Affordable Homes	Policy states that development proposals of 10 or more dwellings must: Make on-site provision for 30% of the total residential dwellings as affordable homes Provide a mix of affordable home tenure Affordable homes should be indistinguishable in design and appearance from the open market houses and shall normally be "pepper-potted" around the site. Where there is an indication that a site or development has been artificially split in order to avoid policy requirements by being below the dwelling or site size threshold identified above, the Council will consider whether it would be appropriate to apply the policy requirements to each of the smaller sites individually, irrespective of their number of dwellings or site area, in order to secure the delivery of affordable housing in accordance with this policy. Where development proposals do not meet the policy requirements for affordable housing the applicant will be required to: Provide an open book viability assessment, that will be independently reviewed on behalf of the Council at the cost of the applicant, demonstrating that the proposed affordable homes provision has been maximised and all other options have been fully explored; and Demonstrate that the proposal contributes towards creating mixed and balanced communities. Where development proposals have been permitted that do not meet policy threshold requirements on affordable housing, the development will be subject to:	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy establishes the proportion of dwellings in a development that should be offered as affordable housing. However, the type of housing typically has no effect on potential impact pathways relating to Habitats sites. **There are no impact pathways that link this policy to Habitats Sites. Therefore, the policy is screened out from Appropriate Assessment.**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	An Early Stage Viability Review if an agreed level of progress on implementation is not made within two years of the permission being granted (or another period agreed by the Council); A Late Stage Viability Review which is triggered when 75% of the homes in a scheme are sold or let (or another period agreed by the Council); or Mid Term Reviews prior to implementation of phases for larger schemes. On site-provision of new affordable homes will be prioritised. Where this not feasible nor viable, then off-site provision or an appropriate financial contribution to provide affordable housing will be accepted where justified. Off-site provision will preferably be through provision on an alternative site close to the development site.	
Policy PLP18: Housing Mix	Policy details how the housing mix of residential developments should be divided, with differing mixes for market rate homes, affordable homes and older persons homes. Deviation from this mix will be granted if there is evidence of local housing need justifying a different mix or site-specific considerations necessitate a different mix. At least 5% of all new market homes should be wheelchair adaptable and 10% of all affordable homes should be wheelchair accessible.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy establishes the different types of housing to be provided in Portsmouth City, including older people's housing, accessible housing and family housing. However, the type of housing typically has no effect on potential impact pathways relating to Habitats sites. **There are no impact pathways that link this policy to Habitats Sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP19: Housing for Specific Groups	Development proposals for the following specialist housing will be supported where there is a need: Self-build and custom-build housing Specialist and Supported housing including older person's housing a and children's/young people's housing Student accommodation Build to Rent Homes Communal/co-living homes Service personnel and service family accommodation Developments including multiple self/custom build homes must have a design framework. Development proposals for purpose built student accommodation will be permitted where: Provision is made for cluster flats and not just studios; An appropriate management plan(s) is submitted that demonstrates that a positive and safe living environment is created for students and negative impacts on the local community are minimised; The building(s) is 'future-proofed' in terms of design to support potential alternative and appropriate uses during its lifespan; and	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy establishes the different types of housing to be provided in Portsmouth City, including older people's housing, accessible housing and family housing. However, the type of housing typically has no effect on potential impact pathways relating to Habitats sites. **There are no impact pathways that link this policy to Habitats Sites. Therefore, the policy is screened out from Appropriate Assessment.**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	Relevant regard has been had to the Council's Student Halls of Residence SPD91 or future equivalent. Development proposals for Build to Rent homes will be permitted where at least 20% of the units within the scheme are let as Affordable Private Rented units at a discount of 20% to local market rents capped at Local Housing Allowance rates. Development proposals for communal or co-living homes will be permitted where an appropriate management plan is submitted that demonstrates how the site will be adequately managed and negative impacts on the local community are minimised.	
Policy PLP20: Houses in Multiple Occupation	In order to support mixed and balanced communities and ensure that a range of household needs continue to be accommodated throughout the city, including development to increase the occupancy of an existing HMO, planning applications for new HMOs and changes of use to a HMO, will only be granted planning permission where: Less than 10% of residential properties within a 50m radius of the area surrounding the application property are in existing use as a HMO; Development does not result in a non-HMO property being 'sandwiched' between HMO properties and does not result in three or more HMO properties in a row Development avoids harm to the amenity of residents; and Developments take account of the HMO Supplementary Planning Guidance. In areas where concentrations of HMOs exceed the 10% threshold, development proposals that intensify the use of an existing HMO, namely change the use of a Class C4 or mixed C3/C4 use to an HMO in Sui Generis use or increase the occupation of an existing HMO, will only be permitted in exceptional circumstances..	**The are no Likely Significant Effects of this policy on Habitats Sites.** This design management policy sets out the conditions that must be fulfilled for houses in multiple occupation. However, housing occupancy has no bearing on Habitats sites. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP21: Residential Density	Policy Outline the minimum density for residential development within certain areas of the city. These are: High density development of at least 120dph in areas of high accessibility; Medium density development of at least 80dph across the City's core residential areas; Lower density development of at least 40dph in the suburban edge. Where a proposed development has a lower residential density level to the thresholds above, the proposal must be supported by robust evidence and rationale that justifies the proposed density is appropriate and is responding positively to its context.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This is a development management policy that sets out the housing density guidelines for Portsmouth City. However, housing density is not a criterion with implications for Habitats sites. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
Policy PLP22: Residential Space Standards	Where planning permission is required, development proposals for new homes (including change of use or conversions) should ensure that the layout and size are suitable to meet the amenity needs of future occupiers. Planning permission will be granted for new homes that: Meet as a minimum the Nationally Described Space Standards (or future equivalent). Provide sufficient on site private and/ or communal outdoor amenity space/ balcony space. Provide sufficient storage space for refuse and recycling	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy identifies required space standards for new residential development. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP23: Estate Renewal	Development proposals within Portsmouth City Council's Estates will be supported provided that they meet specific criteria including: Making provision for suitable homes to meet the needs of residents, Making provision for accessible facilities and hubs for the community; Making the health and wellbeing of residents central Improving access through improved connectivity; Creating open spaces and play areas and improvements to existing open spaces and amenity areas; Delivering improved, safer pedestrian and cycle routes; and Delivering high quality design and sustainability	**The are no Likely Significant Effects of this policy on Habitats Sites.** This design management policy sets out requirements that must be fulfilled for developments within Portsmouth City Council's Estates. However, this policy does not allocate any housing development to these areas and as such has no bearing on Habitats sites. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP24: Gypsies, Travellers and Travelling Showpeople	Development proposals for Gypsies, Travellers and Travelling Show people accommodation planning permission will be granted where certain conditions are met including: The site being well related to and safe, reasonable access to local services, including schools, shops, community facilities and health and welfare services; Sites should have reasonable access for vehicles, pedestrians and cyclists Sites for permanent accommodation must not be located within Flood Zone 2 or 3; Where proposed for transit or temporary provision, the site must not be located within Flood Zone 3; Sites for permanent or transit accommodation must not be located on contaminated or unstable land unless the land can be appropriately remediated and mitigated as part of proposed development The site is capable of being provided with on-site services including water supply, sewage disposal and power supply; Sites should be landscaped to avoid adverse impacts on the amenity and character of an area, or on the natural and historic environment Sites should have good design and landscaping to ensure residential amenity and privacy for occupants	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy stipulates that accommodation proposals for gypsies, travelers and travelling showpeople will be permitted, provided several criteria are met. However, while in principle allowing for new accommodation, no specific locations or quanta are provided. **Therefore, there are no impact pathways that link this policy to Habitats sites. Therefore,**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	Site should not cause unacceptable harm to the amenities of neighbouring uses. There should be safe vehicular access and adequate parking.	**the policy is screened out from Appropriate Assessment.**
Chapter 7 – Thriving Economy		
Policy PLP25: Employment Target	Policy states that the council will make provision for at least 138,429 m^2 of new employment floorspace from 2020-2040 including: 58,645m^2 office floorspace 15,270m^2 research and development / industrial processes floor space 64,514m^2 manufacturing/warehouse floorspace This will be provided from the following source: Completions 2020-2023 Outstanding permissions at 31 March 2023 Strategic Sites allocated in the Local Plan Site allocated for employment in the Local Plan	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is a policy that provides 77,099m^2 of office floorspace, 29,450m^2 research and development/industrial employment floorspace, 64,514 m^2 of manufacturing/warehouse floorspace. The following impact pathways are associated with an increase in employment across Portsmouth City: Loss of functionally linked habitat Water quality Water quantity, level and flow Atmospheric pollution Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) Coastal squeeze Impacts on flightlines **Due to these linking impact pathways, Policy PLP25 is screened in for Appropriate Assessment.**
Policy PLP26: Safeguarding Employment Land	Policy outlines the conditions under which redevelopment of employment land will be acceptable: Proposals for the redevelopment of existing employment premises that provide improved employment accommodation, make more efficient use of land and provides a similar number of jobs will be encouraged. Development proposals for the change of use of land and/or premises allocated, currently used or last used for employment purposes to non-employment purposes will only be permitted where it has been demonstrated that the land or premises is not fit for purpose for employment.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy stipulates the requirements for existing employment land

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	If the site is not fit for purpose and that there is no market demand for the business premises or land for employment, other commercial uses should be considered in the first instance. Only if another type of economic development cannot be found will other uses such as housing be considered. Development proposals that would result in the loss of marine business premises on waterfront sites will be refused.	to be redeveloped. It does not provide any quanta or allocations for redevelopment. **Therefore, there are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP27: Employability and Skills	Development proposals will be permitted where they, as relevant, at both the construction and occupation stages of the scheme: Raise local skill levels and increase employability; Tackle skill shortages in existing and potential business sectors particularly advanced manufacturing and engineering including marine and space businesses, life sciences, creative industries and sustainable construction methods; Address barriers to employment for economically inactive people including the provision of sustainable transport; Provide childcare facilities within or in close proximity to employment sites. Planning applications should where relevant have regard to the Achieving Employment and Skills Plans SPD or future equivalent both at the construction and occupation stages of the development.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy supports development which addresses skill shortages and improves skill levels. It does not provide any quanta or allocations for development. **Therefore, there are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment**
Policy PLP28: Town Centres	Proposals for main town centre uses should be primarily located within the Portsmouth network of centres. Development proposals should contribute positively to the function, vitality and viability of the centre. The Core Commercial Area should be promoted and enhanced as the heart of the centre. Other uses will be acceptable if: It makes a positive contribution to the vitality of the Core Commercial Area and centre overall; It contributes to creating an attractive and vibrant environment through a wide range of complementary uses; It provides an active frontage at ground floor level, with immediate access to the street; It generates pedestrian activity by being open for substantial periods of time to visiting members of the public; There are no significant harmful impacts on the function, on the vitality or viability of the core frontage or Core Commercial Area; and It provides a shopfront or other frontage with a well designed and appropriate display window. Development proposals that would result in the loss of a town centre will need to show that there is no market demand for the premises in its existing use or for another retail, commercial, leisure, cultural and service use.	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is a development management policy that supports the development of Portsmouth's town centres. While no specific quanta are provided, the policy establishes locations in which proposals (e.g. leisure and tourism uses) will be delivered. The provision of further cultural and tourism opportunities is likely to increase the number of temporary visitors to Portsmouth City and are associated with the following impact pathways: Recreational pressure (in Habitats sites and functionally linked habitats)

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	Development proposals for a variety of uses including town centre uses and housing on land and/or premises that is within an identified centre but outside the Core Commercial Area will be permitted. Development of new homes and other residential uses, including as part of mixed use proposals, will be acceptable, where there is a high level of accessibility to key services and transport links. Retail, commercial, leisure, cultural and service uses will be encouraged at ground floor level where there is market demand.	Loss of functionally linked habitat Water quality Water quantity, level and flow Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) Atmospheric pollution Impacts on flightlines Coastal squeeze **Due to these linking impact pathways, Policy PLP28 is screened in for Appropriate Assessment.**
Policy PLP29: Small Local Shops	Policy outlines the conditions for the development of small local shops outside of City, Town, Neighbourhood and Local Centres. These include: A net sale area less than 150m^2 The shop must sell essential goods and provide day to day shopping and service needs such as food. There is no near by similar facility It provides an active well designed shop frontage Development proposals that would result in the loss of a small local shop outside the City, Town, District and Local Centres will be resisted, and will only be allowed where: There is no market demand for the premises in its existing use, or There is an alternative local shop or service use that meets key day to day needs of the community within close proximity.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy which controls the development of shops outside of central locations. It does not provide any quanta or allocations for redevelopment. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
PLP30: Cultural and Visitor Economy	**Proposals that maximise the cultural and visitor economy will be supported in principle. New or enhanced facilities are particularly encouraged at Cultural Quarter and Core Commercial Area as well as other areas identified in the town centre hierarchy.** Development proposals should meet certain criteria including: Being of an appropriate type, scale and design Retaining an active and welcoming frontage at ground floor level, attracting pedestrian activity and encouraging linked trips; Ensuring effective access arrangements, including local pedestrian and cycle links; Not having a harmful impact on nearby occupiers due to	**Likely Significant Effects on Habitats Sites cannot be excluded.** This is a development management policy that supports the delivery of cultural, tourism and leisure facilities, especially in the coastal area of Portsmouth. The provision of further cultural and tourism opportunities is likely to increase the number of temporary visitors to Portsmouth City and are associated with the following impact pathways:

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	Pop up and temporary uses will be encouraged for vacant properties for a period prior to permanent re-occupation or redevelopment. Access to cultural facilities and visitor attractions and the City and town centres should be improved. This may be through enhancement to building design, public realm, signposting and wayfinding. The loss of cultural and tourism facilities in Portsmouth will only be granted where it can be demonstrated that there is no market demand for their existing use or in a related use. Other uses adjacent to cultural and visitor attractions should not undermine the feasibility of these attractions.	Recreational pressure (in Habitats sites and functionally linked habitat) Loss of functionally linked habitat Water quality Water quantity, level and flow Visual and noise disturbance in Habitats sites and functionally linked habitats (during and post-construction) Atmospheric pollution Impacts on flightlines Coastal squeeze **Due to these linking impact pathways, Policy PLP30 is screened in for Appropriate Assessment.**
Chapter 8 – Climate Emergency		
Policy PLP31: Flooding	Development proposals will be permitted if they meet certain criteria including: They seek to reduce the impact and extent of flooding They have a site specific Flood Risk Assessment. The proposal meets the sequential and exception tests as set out in Government policy and guidance The development will be safe over its lifetime The development does not impact the integrity of land used for existing or future flood defences The development will not result in the increase of flood risk elsewhere They are appropriately flood resistant and resilient so that in the event of a flood they can be quickly brought back into use without significant refurbishment Appropriate safety measures have been taken. Appropriate safety measures have been taken in accordance with the SFRA Level 1 and 2 specifically in relation to finished floor levels, access/escape routes, places of safety and emergency planning. Site specific Flood Risk Assessments should use the Upper End climate change allowance when assessing flood risk, unless an alternative approach can be justified; Opportunities should be sought to implement natural flood management techniques to attenuate surface water runoff and groundwater discharge; Opportunities for de-culverting watercourse sections should be sought to bolster local channel capacity and conveyance; and Proposals that include self-contained basement accommodation for use as a habitable room will not be permitted due to the unacceptable residual flood risks associated with this type of accommodation.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy provides requirements for developments focused on mitigating flood risk to development proposals. This policy does not establish any quata or location for development. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
Policy PLP32: Sustainable Drainage System	Development proposals should: not increase existing surface run-off rates reduce surface run off if the proposal is in an area at risk of flooding minimise the amount of hard landscaping and incorporate permeable surfacing to reduce surface water run-off. incorporate methods for rainwater harvesting, such as water butts. Development proposals will be permitted where SuDS are incorporated and meet criteria including: They incorporate green infrastructure; They are sensitively located and designed to promote an enhanced landscape/townscape and good quality spaces that improve public amenity; Surface water will be separated and managed within the site, or if not possible suitably disposed of Any surface water resulting from development on greenfield sites will not be permitted to enter the combined or foul water system; and Details for future maintenance over the lifetime of the development shall be included with the proposal as part of a sustainable drainage strategy. Development proposals will be permitted where they provide proportionate evidence to demonstrate that wastewater infrastructure can accommodate or be improved to accommodate the proposals and that appropriate provisions will be made. Where necessary, occupation of development should be phased to align with the delivery of network reinforcement, in liaison with the service provider.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy provides requirements for developments focused on mitigating flood risk to development proposals. This policy does not establish any quata or location for development. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP33: Sustainable Construction and Onsite Renewable Energy	Development proposals will be permitted where they are designed to reduce their impact on the environment during construction. Relevant proposals must demonstrate using a Sustainability Statement that all resources are used efficiently, as part of the construction and operation of a building, including consideration of embodied emissions. All developments must follow the principles of the energy hierarchy, to ensure that the design of a building prioritises energy reduction through highly energy efficient fabric measures, lighting, ventilation, and orientation. The retention of existing buildings will be given preference to the demolition and replacement of existing buildings. Retrofitting energy efficiency measures in existing buildings will be supported. Proposals should address rising temperatures and overheating. Development proposals that are powered by solid fossil fuels will not be permitted. Residential development should be designed to meet the 110 litres per person per day water efficiency standard. Development proposals should incorporate Swift Boxes	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy promotes sustainable design and construction in Portsmouth City. Most relevant from an HRA perspective, the policy specifies that new developments will be required to achieve a water efficiency standard of 110l per person per day. This will limit the amount of potable water required and wastewater produced in Portsmouth. Solent's Habitats sites are sensitive to a decline in water quality (primarily due to nitrogen in treated sewage effluent) and changes in the hydrological regime (primarily due to water abstraction). Therefore, this policy contributes to the protection of its ecological integrity. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
		is screened out from Appropriate Assessment.
Policy PLP34: Renewable Energy	Development proposals for wind turbines and solar arrays will be supported at appropriate locations Development proposals for renewable and low carbon energy generation developments that are led by / meet the needs of local communities will be supported. Where community support is identified for a specific technology at a given location, this will be identified as a preferred location for that technology. Proposals for wind and solar PV farms to re-power at the end of their operational life will be permitted, as long as the turbines and/or solar panels are replaced with new equipment of either the same or larger installed capacity, and subject to compliance with statutory, site-specific and other constraints. The development of Combined Heat and Power networks will be encouraged provided that they use renewable and low carbon forms of energy generation; and b) Individual developments make all reasonable efforts to meet net zero through onsite measures, before connecting to a heat network.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy provides general support and guidance for renewable energy projects it will not in itself lead to any development. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP35: Air Quality and Pollution	Planning permission will only be granted where it can be demonstrated that development will not contribute to, be put at unacceptable risk from, and will not be adversely affected by pollution (including cumulative levels) which cannot be addressed through appropriate mitigation, including: a. Air quality/ odour/ dust b. Noise c. Vibration d. Light e. Water (including leachate) f. Any other forms of pollution Planning permission will be granted where development proposals demonstrate how determinants of health and wellbeing have been incorporated into the development, and its impact on the mental and physical health and wellbeing of occupiers. Major development proposals must undertake a Health Impact Assessment, demonstrating how the planning application has been informed by the findings of the assessment in regard to air quality. Planning permission will be granted where it addresses any potential impacts of airborne pollution on the natural environment.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This is a development management policy that states adverse impacts on amenity features, health and in terms of pollution should be avoided. For example, developments must demonstrate that they will not contribute unacceptable risks in terms of air quality, noise, light and water pollution. Solent's Habitats sites are sensitive to all of these impacts and this policy will contribute to their protection. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP36: Coastal Zone	Development proposals on the coast will be permitted where: avoid adverse impacts upon marine and maritime related uses; seek opportunities to maintain and enhance access to the coast. Preserve the character of the coastal zone Protect and where possible enhance key views to and from the Coastal Zone linking the City to its wider landscape setting; Are consistent with the Shoreline Management Plan and South Inshore and South Offshore Marine Plans.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy identifies the conditions required for planning permissions in the Coastal Zone. However, the policy content has no bearing on Habitats sites.

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
		There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.
Policy PLP37: Contaminated Land	Planning permission will only be granted for development on or near contaminated land where appropriate and sufficient measures can be taken to remediate and/ or satisfactorily mitigate the risk of contamination. Such measures must address the long-term safety of the proposed development, the end users of that development and the natural environment and include the future management of the site.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This development management policy relates to planning permissions on or near contaminated land, ensuring that appropriate measures must be in place to prevent contamination. However, developments on contaminated land are not specifically relevant to Habitats sites. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Chapter 9 – Greening the City		
Policy PLP38: Green infrastructure	Major development will be permitted where it provides or contributes to Green Infrastructure. Development should conserve and enhance the green grid and should meet green infrastructure priorities. Proposals that reduce the quality of the green infrastructure network will only be permitted where suitable mitigation is identified and secured. Development impacting proposed green infrastructure projects should not prejudice its future delivery and should provide a physical connection to it. Proposals which impact the Green Grid should take opportunities to raise awareness of nature as part of the design of the scheme. Development that does not provide onsite green infrastructure as set out above will only be permitted where sustainable alternative green infrastructure provision of an equivalent standard is provided in close proximity to the development.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy protects the natural environment by promoting green infrastructure. **There are no impact pathways that link this policy to Habitats Sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP39: Biodiversity	Development proposals will be permitted where they conserve and enhance biodiversity. Development proposals should demonstrate that they: Retain, protect and enhance features of biodiversity interest and ensure appropriate long-term management of those features; Contribute to the creation of larger improved wildlife habitats; Protect and support recovery of rare, notable and priority species;	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy focuses on the natural environment around Portsmouth City, identifying that

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	Seek to eradicate or control any invasive non-native species present on site; Contribute to the protection, management and enhancement of biodiversity; Comply with the mitigation hierarchy as set out in national policy. The following hierarchy of site designation will apply in the consideration of development proposals: Internationally Protected Sites: SPAs, SACs and Ramsar Sites, or candidate and formally proposed versions of these designations: – Development proposals with the potential to impact alone or in combination on one or more international sites(s) will be subject to an HRA. – Development proposals that will result in any adverse effect on international sites will be refused unless: there are no alternatives to the proposal; there are imperative reasons of overriding public interest why the proposal should proceed; and adequate compensatory provision is secured. Nationally Protected Sites: Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR): – Development proposals considered likely to have a significant effect on nationally protected sites will be required to assess the impact by means of an Environmental Impact Assessment; – Development proposals should avoid impacts on these nationally protected sites. Development proposals where an adverse effect which cannot be avoided or mitigated on the site's notified special interest features is likely will be refused, unless the benefits clearly outweigh the likely impact to the notified features of the site and any broader impacts on the network of nationally protected sites. Irreplaceable Habitats (veteran and ancient trees): – Development proposals which result in the loss or deterioration of irreplaceable habitats will be refused unless there are exceptional reasons and a suitable compensation strategy exists. Locally protected sites: Local Wildlife Sites (LWS), including Sites of Importance for Nature Conservation (SINC), Locally Protected Sites (Sites of Nature Conservation Importance (SNCI)) and in addition Local Nature Reserves (LNR)): – Development proposals considered likely to have a significant effect on local sites will be required to assess the impact by means of an Ecological Impact Assessment; – Development proposals that will result in an adverse effect on the integrity of a local site which cannot be avoided or adequately mitigated will be refused, unless exceptional circumstances outweighing the effects are demonstrated. Outside of designated sites: – Development proposals should identify and incorporate opportunities to conserve, enhance, restore and recreate priority habitats and ecological networks. Development proposals should contribute and deliver on the aims and objectives of the relevant biodiversity strategies; – Where development adjoins protected sites, buffers should be provided in order to protect and enhance their biodiversity roles; – Opportunities should be taken to create linkages for wildlife between protected sites.	development proposals must avoid harmful effects on biodiversity and / or ecology. Furthermore, the policy also extends protection to internationally designated sites, by setting out that planning permission will be refused where a proposal has an adverse effect on a SAC, SPA or Ramsar site without compensatory provision. The importance of nature protection is also highlighted in the policy's supporting text, which places international sites at the highest level in the protection hierarchy. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP40: Biodiversity Net Gain	Development proposals (except exempt development) will be permitted where they: Demonstrate at least a 10% net gain for biodiversity, accounted for in a biodiversity net gain plan. Development proposals should prioritise on site Biodiversity Net Gain and only use offsite banks and credits where this is not achievable.	**The are no Likely Significant Effects of this policy on Habitats Sites.**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	Development proposals within the strategic sites of Portsmouth City Centre and Lakeside and the allocation site of Somers Orchard must demonstrate a 20% net gain for biodiversity accounted for in a biodiversity net gain plan.	This policy provides requirements for biodiversity net gain in development proposals within the local plan area. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP41: Trees & Hedgerows	Planning permission for development will be granted where: Proposals must have been informed and influenced by the presence of trees on the site, with regard to any Tree Preservation Order designations; The need for and benefits of the development outweigh loss or deterioration of woodlands, hedgerows or trees of high amenity value; Tree canopy cover is increased in line with the Natural England Green Infrastructure Urban Tree Canopy Cover Standard as follows: – Tree canopy cover of at least 15% is provided on new major development – Replace lost trees at a ratio of 1:1 Development proposals resulting in the loss or deterioration of aged or veteran trees, or impacting on their immediate surroundings, will be refused unless there are wholly exceptional reasons, as defined by national policy, and a suitable compensation strategy has been agreed in writing with the Council.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy provides requirements for biodiversity net gain in development proposals within the local plan area. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP42: Solent Waders and Brent Geese Sites	Functionally linked sites which are used by Solent Waders and/or Brent Geese will be protected from adverse impacts commensurate to their status in the hierarchy of the Solent Wader and Brent Geese Network as outlined in the Solent Waders and Brent Goose Strategy. Proposals that impact the functionally linked sites will need to provide mitigation as set out in the Solent Waders and Brent Goose Strategy (Guidance on Mitigation and Off- setting Requirements) document, and future updated guidance.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This is a positive policy that protects areas used by waders and Brent Geese. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP43: Recreational Disturbance on International Nature Designations	Planning permission for proposals resulting in a net increase in residential units will be permitted where a financial contribution is made towards the Solent Recreation Mitigation Strategy. In the absence of a financial contribution towards the Solent Recreation Mitigation Strategy, proposals will need to avoid or mitigate any in combination negative effects from recreation through a developer-provided package of measures for the lifetime of the development. Development should avoid noise disturbance impacts on birds at the SPA sites and/or at identified terrestrial SPA supporting habitat sites though the overwintering period.	**The are no Likely Significant Effects on Habitats Sites.** This is a policy that seeks to protect Internationally Designated Sites by requiring a financial contribution to the Solent Recreation Mitigation Strategy. This policy does not

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
		allocate any sites for development and does not set a quanta for growth. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP44: Nutrient Neutrality in International Nature Designations	Development proposals (except exempt development) will be permitted where they demonstrate through a nutrient budget that they secure Nutrient Neutrality through either offsetting, provision of direct and indirect mitigation measures, purchase of mitigation credits or a mixture of these	**The are no Likely Significant Effects of this policy on Habitats Sites.** This is a positive policy that requires nutrient neutrality for development proposals within the plan area. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP45: Open Space	Proposals should seek to create, protect and/or enhance open space and accessibility to open space where possible. Enhancements of existing open spaces should seek to maximise their quality and multi-functionality. Any proposals that would result in the net loss of open space will be refused, unless: Provision is surplus to requirements; or The loss would be adequately replaced Development would provide alternative sports and recreational provision, the benefits of which clearly outweigh the loss of the current or former use; or There are wider public benefits which outweigh the harm of the loss. Development proposals for 50 or more new homes will be expected to provide open space to the ratio of 1.65 ha per 1,000 people. Where this is not feasible, off-site enhancement or developer contribution may be agreed The nature of new open space provision should consider the needs of the intended occupants and that of the local area, and the need to provide multi-functional spaces where practicable.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy specifies that new developments should create, protect or enhance existing open spaces, maximizing their quality and functionality. Furthermore, developments of more than 50 dwellings are to provide publicly accessible open space at the standard of 1.65ha per 1,000 people. The provision of additional open space is standard statutory requirement and helps in diverting recreational pressure away from more sensitive sites. Proximity to home is a very important factor in determining site usage and the inclusion of an appropriate amount of open space in large residential developments is considered to be positive for Solent's Habitats sites. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
		is screened out from Appropriate Assessment.
Policy PLP46: Local Green Spaces	The following green areas are designated and protected as Local Green Spaces: Southsea Common West, St Thomas & St Jude Southsea Common East, Eastney & Craneswater Kingston Park, Fratton Tamworth Park, Baffins Baffins Pond and Tangier Field, Baffins Great Salterns Recreation Ground, Baffins Hilsea Lines, Hilsea Alexandra Park, Hilsea College Park, Hilsea Gatcombe Gardens, Hilsea Gurnard Road Park, Cosham Cosham Park, Cosham King George Playing Field, Cosham Drayton Park, Drayton & Farlington Farlington and St John's College Playing fields and Farlington Triangle Farlington Marshes Nature Reserve, Drayton & Farlington Portsdown Hill Stamshaw Fields, Nelson Victoria Park, Charles Dickens Land at Leominster Road, Hempsted Green and Paulsgrove Park, Paulsgrove Highland Road Cemetery, Eastney and Craneswater Kingston Cemetery, Fratton	**There are no Likely Significant Effects of this policy on Habitats Sites.** This is a development management policy that designates several green areas to be Local Green Spaces. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP47: Movement and Transport	Development proposals will be permitted where they deliver a people centred travel network that prioritises walking, cycling, public and shared transport, in line with LTP4, and which is compatible with the Council's Climate Emergency pledge Improvements to transport infrastructure that align with the aims of the Local Transport Plan will be supported. Development proposals that are in highly accessible locations and facilitate access to sustainable transport will be permitted. Development proposals should contribute to the delivery of a network of walking and cycling routes throughout the City. Applications should be supported by a Travel Plan along with a Transport Statement or Transport Assessment. Development proposals should protect and enhance highway safety. Any significant detrimental impacts must be mitigated as approved by the Local Highway Authority.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy promotes a reduction in travel and the use of sustainable transport modes, such as walking, cycling and public transport. It explicitly gives priority to pedestrian and cycle movements, facilitating high levels of permeability. Overall, this policy is likely to have a positive effect on well-being, as well as helping to protect Habitats sites. Reducing the need for

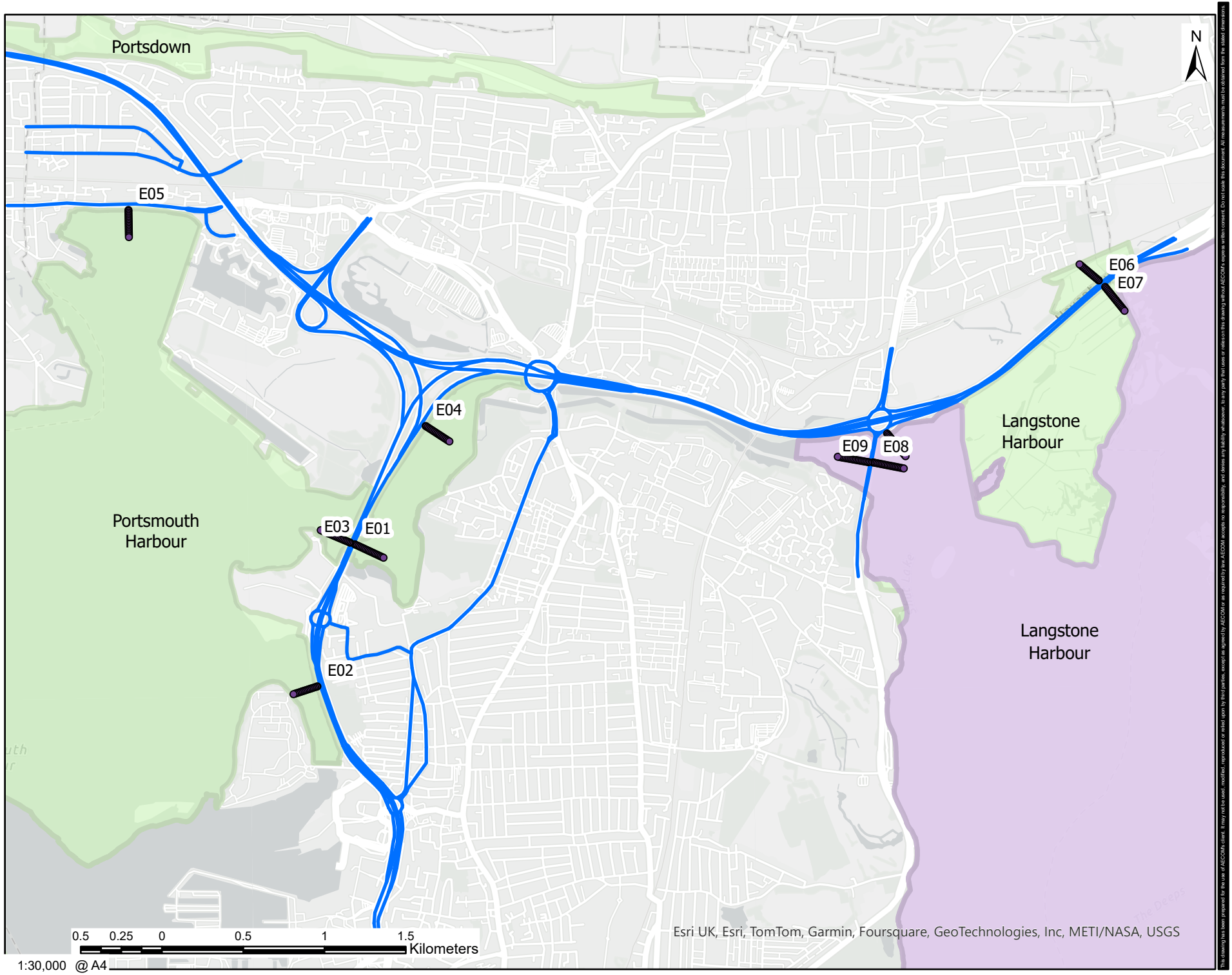
Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	The design and site layout of new development must protect the safety and amenity of all and give priority to the needs of pedestrians, cyclists, users of mobility aids and other non-motorised forms of transport. Movement through the site must be a safe, legible and attractive experience for all users, with roads and surfaces that contribute to the experience rather than dominate it. Development proposals must accommodate the needs of people with disabilities by all modes of transport. All proposals should allow for delivery of goods and access by service and emergency vehicles. All proposals must maintain or enhance all transport interchanges and sustainable transport facilities where relevant.	individual car-based travel will reduce the amount of nitrogen deposition on sensitive habitats. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP48: Access and Parking	Development should be designed in a way that discourages car use and encourages travel by other means. If parking is deemed desirable for the development it should meet parking standards. If parking is deemed desirable or necessary as part of a development it should be provided in accordance with the Parking Standards set out in the Parking Standards and Transport Assessments SPD or future equivalent and made neighbourhood plans as relevant. All new private and public parking provision must: • Not give rise to unacceptable adverse impacts on amenity; • Be of a location, scale, layout and design that reflects its context; • Incorporate appropriate sustainable drainage systems; and • Where feasible, incorporate green infrastructure and renewable energy. New development should include infrastructure for electric and ultra-low emission vehicles and consider shared transport options. Development proposals should provide sufficient levels of cycle and other micro-mobility parking to serve the needs of that development. Development proposals will be permitted where on and off-street parking provision and access protects a highway safety. Any significant impacts must be mitigated. Development proposals should provide parking facilities compatible for all users, including those with disabilities and reduced mobility. Proposals which result in an increase in the number of access points onto primary and distributor roads will not normally be permitted.	**There are no Likely Significant Effects of this policy on Habitats Sites.** This policy details parking and access restrictions for new developments. It specifically promotes the encouragement of sustainable transport modes. It explicitly gives priority to pedestrian and cycle movements, facilitating high levels of permeability. Overall, this policy is likely to have a positive effect on well-being, as well as helping to protect Habitats sites. Reducing the need for individual car-based travel will reduce the amount of nitrogen deposition on sensitive habitats. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP49: Public Realm	Development proposals should enhance the public realm, ensuring that: It is safe, healthy, accessible for all, inclusive, multifunctional, attractive, well-connected, legible and easy to maintain, and that it relates to the local, cultural and historic context; Measures to prevent Violence Against Women and Girls (VAWG) have been incorporated; Design is of the highest quality; Street clutter is avoided; It encourages walking and cycling and eases movement within the city; Integration into key corridors and provides ease of access to areas of public convenience and amenity. Major development proposals and allocated sites will be expected to create and enhance the public realm, supporting the wider sustainability of the city and providing social and environmental benefits.	**There are no Likely Significant Effects of this policy on Habitats Sites.** This is a design management policy which details how developments should interact with the public realm. This policy state that development should improve the quality of public spaces. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	The Council will support the delivery of public art that helps to enhance the public realm.	**is screened out from Appropriate Assessment.**
Policy PLP50: Infrastructure Delivery	Development proposals will be required to: Demonstrate appropriate infrastructure investment through on or off site works and/or financial contributions. The whole life cost of infrastructure provision has been considered and mechanisms are in place for its future maintenance/care; A programme of delivery has been agreed with the relevant infrastructure provider(s) prior to commencement. Delivery of infrastructure should be integrated with development phasing to ensure prompt delivery. The provision of new or improved utility infrastructure by service providers will be supported in principle where it meets identified strategic and/or community needs, or enhances protection of the environment.ies	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy stipulates that development proposals will be required to provide or make financial contributions to relevant infrastructure, which may cover various types of infrastructure relating to transport, open space, water supply and wastewater. While no specific detail is provided, this is a positive policy from an HRA perspective. This is because it ensures that the necessary infrastructure to accommodate development is provided. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP51: Electronic Communication and Utilities Infrastructure	Development proposals for new electronic communications and/or utilities infrastructure will be permitted where; The most efficient use of existing electronic communication networks and utilities infrastructure has been fully explored and the need cannot be met using existing infrastructure; They are of an appropriate design; They minimise environmental impacts; They remove, reduce in prominence, or move underground related existing infrastructure, where feasible. Where one or more infrastructure providers have agreed to provide superfast broadband connectivity or full fibre, the development should be designed to connect to this service. Development proposals will be expected to be served by superfast broadband connection as a minimum and full fibre connections where available. If this cannot be achieved, it must be demonstrated that this would not be deliverable.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This is a design management policy that requires developments be suitable for superfast broadband or full fibre. It also stipulates requirements for development of communications and utility infrastructure. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP52: New & Existing Community & Leisure Facilities	Development proposals for new and/or expanded community and leisure facilities will be permitted where: The site is accessible and inclusive; Appropriate consideration has been given to the shared use, re-use and/or redevelopment of existing buildings; The scale of the proposed infrastructure is proportionate.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy provides criteria under which change of use, or loss of premises or land used for community facilities would be considered.

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
	Developments resulting in the change of use or loss of premises or land in use as a community facility must: demonstrate there is no market demand for the existing use or an equivalent community use, for commercially run facilities For community or publicly owned or managed facilities, there is no longer a need for the facility or an equivalent community use and its retention would not be practical or viable; Alternative community facilities are provided that are accessible, inclusive and available, and of an equivalent or better quality to those lost, without causing unreasonable reduction or shortfall in the local service provision. Development proposals for community and leisure facilities that are listed as Assets of Community Value will be subject to a six month statutory delay on sale.	**There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP53: Historic Environment Policy	Development proposals will only be permitted where they conserve or enhance the City's heritage assets. Development proposals which affect heritage assets, or their setting, will be determined with regard to the significance of the asset. Proposals which are considered to substantially harm the significance of a designated heritage asset will not be permitted except in exceptional circumstances. Where a development proposal would impact on the fabric or setting of a designated or non-designated heritage asset, the applicant will be required to provide a supporting Heritage Statement (HS). Development proposals that would improve the condition of heritage assets that are considered to be 'at risk' through neglect, decay or other threats will be encouraged and supported. Development proposals which secure the long term conservation or enhancement of redundant or under-used heritage assets including their setting through their optimal/ viable (re)use will be supported. Proposals for alteration and/ or extension that conserve or enhance the significanceof non-designated heritage assets will be supported. Non-designated heritage assets should be retained where appropriate. Any development proposals relating to a registered park or garden that would lead to harm to its significance will not be permitted, unless the public benefits associated with the proposal are considered to outweigh that harm. Development proposals for works to heritage assets that are intended to adapt to, or mitigate the effects of, climate change will be supported where it can be clearly demonstrated that they conserve the fabric and/or setting of the asset.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy protects the historic environment from the impacts of development. It makes no allocations for any development. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
PLP54: Listed Buildings	Development proposals which affect a listed building, or its setting will only be permitted and Listed Building Consent and or Planning Permission granted where: They preserve or enhance the significance of the listed building and its setting by demonstrating that loss of historic fabric and detail of significance, including internal features, floor plans and the integrity of the rooms, is avoided; or Harm to the significance of the listed building or its setting is minimised and considered to be outweighed by public benefits by the Council, In such circumstances appropriate mitigation measures will be expected, including archaeological investigation including a written report or recording. Development proposals will be refused planning permission and/or listed building consent where they cause substantial harm to a listed building or its setting.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy protects existing listed buildings from negative impacts of development. It makes no allocations for any development. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**

Policy Number / Name	Policy Summary	Test of Likely Significant Effect
Policy PLP55: Conservation Areas	Development proposals within a conservation area will be permitted where they preserve/enhance the character of the conservation area. Development in a conservation area will be permitted where: Architectural features which contribute to the character of an area are retained; There is no adverse impact on the townscape and roofscape of the conservation area, A high standard of design has been applied and good quality materials are proposed to be used; Trees, open spaces and other landscape features are protected. Within a conservation area, development proposals involving the total or substantial demolition of buildings or structures will only be permitted where: The current buildings or structures make an insufficient positive contribution to the conservation area; A replacement building of equal or greater quality is proposed.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy protects areas that are designated as conservations areas from unsuitable development. It makes no allocations for any development. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**
Policy PLP56: Archeology	Development proposals will be permitted where they do not cause harm to archaeological heritage assets and/or their setting. There will be a presumption in favour of preservation in-situ for Scheduled Monuments and equivalently significant archaeological heritage assets. Development proposals that would result in unavoidable harm to, or loss of, an archaeological heritage asset's significance, will only be permitted where there is clear justification in terms of benefits from the development which outweigh that harm and also meet the following requirements: There is no less harmful viable option; The amount of harm has been reduced to the minimum possible. The city's archaeological ALERT layers should be used to identify sites where unrecorded archaeology may be present and research such as a desk-based assessment should be carried out. In those cases where archaeological intervention and recording is considered appropriate to take place the resulting archive should be deposited with Portsmouth Museum and a copy of the report with the city's HER.	**The are no Likely Significant Effects of this policy on Habitats Sites.** This policy protects the archeological heritage assets from negative impacts of development. It makes no allocations for any development. **There are no impact pathways that link this policy to Habitats sites. Therefore, the policy is screened out from Appropriate Assessment.**

Appendix C Air Quality Modelled Transects



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Drawn: HMChecked:JM Approved: AS Date: 08/02/2024

Revision: 1

AECOM

PROJECT

Portsmouth City Council
Air Quality Modelling
Portsmouth Local Plan

CLIENT

Portsmouth City Council

CONSULTANT

AECOM Ltd
Midpoint, Alençon Link,
Basingstoke RG21 7PP
United Kingdom

LEGEND

- Ecological Transects
- Modelled Road Network
- Special Areas of Conservation
- Sites of Special Scientific Interest

NOTES

ISSUE PURPOSE

FINAL

PROJECT NUMBER

60586784

SHEET TITLE

Ecological Transect Area

SHEET NUMBER

Figure A.1

Appendix D Air quality modelling results

Transect / Receptor	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)			
	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS
E1_4.9m	86.55	25.37	27.78	28.30	3.89	3.89	5.09	5.26	29.74	24.95	31.37	32.29
E1_10m	70.82	23.69	25.45	25.86	3.17	3.17	4.05	4.18	25.04	21.07	25.80	26.50
E1_20m	57.63	22.29	23.49	23.79	2.56	2.56	3.18	3.26	21.07	17.82	21.09	21.57
E1_30m	51.35	21.62	22.56	22.78	2.28	2.28	2.75	2.82	19.16	16.28	18.82	19.20
E1_40m	47.58	21.22	22.00	22.18	2.10	2.10	2.50	2.55	18.01	15.36	17.46	17.77
E1_50m	45.04	20.95	21.62	21.77	1.99	1.99	2.33	2.37	17.24	14.73	16.53	16.80
E1_60m	43.20	20.75	21.34	21.48	1.91	1.91	2.20	2.24	16.67	14.28	15.86	16.09
E1_70m	41.80	20.60	21.13	21.25	1.84	1.84	2.10	2.14	16.25	13.94	15.35	15.55
E1_80m	40.70	20.49	20.96	21.07	1.79	1.79	2.03	2.06	15.91	13.67	14.94	15.13
E1_90m	39.81	20.39	20.83	20.93	1.75	1.75	1.97	2.00	15.63	13.45	14.61	14.78
E1_100m	39.07	20.31	20.72	20.81	1.72	1.72	1.92	1.95	15.41	13.27	14.34	14.50
E1_110m	38.45	20.25	20.63	20.71	1.69	1.69	1.87	1.90	15.22	13.12	14.11	14.26
E1_120m	37.92	20.19	20.55	20.62	1.67	1.66	1.84	1.86	15.05	12.99	13.91	14.05
E1_130m	37.46	20.14	20.48	20.55	1.64	1.64	1.81	1.83	14.91	12.88	13.74	13.87
E1_140m	37.06	20.10	20.42	20.48	1.63	1.63	1.78	1.80	14.79	12.78	13.60	13.72
E1_150m	36.71	20.06	20.36	20.43	1.61	1.61	1.75	1.77	14.68	12.70	13.47	13.58
E1_160m	36.40	20.03	20.32	20.37	1.60	1.60	1.73	1.75	14.58	12.62	13.35	13.46
E1_170m	36.12	20.00	20.27	20.33	1.58	1.58	1.71	1.73	14.50	12.55	13.24	13.35
E1_180m	35.87	19.97	20.23	20.29	1.57	1.57	1.69	1.71	14.42	12.49	13.15	13.25
E1_190m	35.65	19.95	20.20	20.25	1.56	1.56	1.68	1.70	14.35	12.43	13.07	13.16

Transect / Receptor	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)			
	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS
E1_200m	35.44	19.93	20.17	20.22	1.55	1.55	1.66	1.68	14.29	12.38	12.99	13.08
E2_15.45m	61.00	27.44	28.54	28.65	2.48	2.48	3.01	3.07	19.92	16.83	19.67	20.01
E2_20m	57.31	27.05	27.99	28.08	2.31	2.31	2.76	2.82	18.81	15.94	18.35	18.65
E2_30m	52.29	26.52	27.24	27.31	2.08	2.08	2.43	2.47	17.29	14.71	16.56	16.79
E2_40m	49.32	26.20	26.79	26.86	1.95	1.95	2.23	2.27	16.39	13.99	15.50	15.69
E2_50m	47.34	25.99	26.50	26.55	1.86	1.86	2.10	2.13	15.78	13.50	14.79	14.96
E2_60m	45.91	25.84	26.28	26.33	1.79	1.79	2.00	2.03	15.34	13.15	14.28	14.43
E2_70m	44.82	25.72	26.12	26.17	1.74	1.74	1.93	1.95	15.01	12.89	13.89	14.02
E2_80m	43.97	25.63	25.99	26.04	1.70	1.70	1.87	1.90	14.74	12.68	13.58	13.71
E2_90m	43.29	25.56	25.89	25.93	1.67	1.67	1.83	1.85	14.53	12.51	13.34	13.45
E2_100m	42.72	25.50	25.80	25.84	1.65	1.65	1.79	1.81	14.36	12.37	13.13	13.24
E2_110m	42.24	25.45	25.73	25.77	1.62	1.62	1.76	1.77	14.21	12.25	12.96	13.06
E2_120m	41.83	25.41	25.67	25.71	1.61	1.60	1.73	1.75	14.08	12.15	12.81	12.91
E2_130m	41.48	25.37	25.62	25.65	1.59	1.59	1.71	1.72	13.97	12.06	12.69	12.77
E2_140m	41.17	25.33	25.57	25.61	1.58	1.57	1.68	1.70	13.88	11.98	12.57	12.66
E2_150m	40.89	25.31	25.53	25.56	1.56	1.56	1.67	1.68	13.79	11.92	12.47	12.55
E2_160m	40.65	25.28	25.49	25.53	1.55	1.55	1.65	1.66	13.71	11.86	12.39	12.46
E2_170m	40.44	25.26	25.46	25.49	1.54	1.54	1.63	1.65	13.65	11.80	12.31	12.38
E3_3.9m	78.33	24.48	26.67	27.61	3.47	3.47	4.72	4.95	27.09	22.71	29.36	30.61
E3_10m	60.87	22.63	24.01	24.54	2.69	2.69	3.46	3.59	21.96	18.53	22.62	23.34
E3_20m	50.67	21.54	22.47	22.78	2.24	2.24	2.74	2.82	18.91	16.07	18.73	19.17
E3_30m	45.90	21.04	21.75	21.97	2.02	2.02	2.40	2.46	17.48	14.92	16.93	17.25
E3_40m	43.08	20.74	21.32	21.49	1.90	1.90	2.20	2.25	16.62	14.24	15.87	16.12

Transect / Receptor	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)			
	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS
E3_50m	41.19	20.54	21.04	21.17	1.81	1.81	2.07	2.11	16.05	13.78	15.15	15.36
E3_60m	39.83	20.39	20.83	20.94	1.75	1.75	1.97	2.01	15.63	13.45	14.64	14.82
E3_70m	38.79	20.28	20.68	20.77	1.70	1.70	1.90	1.93	15.31	13.20	14.25	14.41
E3_80m	37.97	20.20	20.55	20.64	1.67	1.67	1.84	1.87	15.06	13.00	13.95	14.09
E3_90m	37.31	20.13	20.45	20.53	1.64	1.64	1.80	1.82	14.86	12.84	13.70	13.83
E3_100m	36.77	20.07	20.37	20.44	1.61	1.61	1.76	1.78	14.69	12.71	13.50	13.61
E3_110m	36.31	20.02	20.30	20.36	1.59	1.59	1.73	1.75	14.55	12.60	13.32	13.43
E3_120m	35.91	19.98	20.24	20.30	1.57	1.57	1.70	1.72	14.43	12.50	13.18	13.27
E3_130m	35.57	19.94	20.19	20.24	1.56	1.56	1.68	1.69	14.33	12.42	13.05	13.14
E3_140m	35.28	19.91	20.15	20.19	1.54	1.54	1.66	1.67	14.23	12.34	12.94	13.02
E3_150m	35.02	19.88	20.11	20.15	1.53	1.53	1.64	1.65	14.15	12.28	12.84	12.92
E3_160m	34.78	19.86	20.07	20.11	1.52	1.52	1.62	1.63	14.08	12.22	12.75	12.83
E3_170m	34.58	19.84	20.04	20.08	1.51	1.51	1.61	1.62	14.02	12.17	12.68	12.75
E3_180m	34.39	19.82	20.01	20.05	1.50	1.50	1.59	1.61	13.96	12.13	12.61	12.67
E3_190m	34.22	19.80	19.99	20.02	1.50	1.50	1.58	1.59	13.91	12.09	12.54	12.61
E3_200m	34.07	19.78	19.96	20.00	1.49	1.49	1.57	1.58	13.86	12.05	12.48	12.55
E4_26.1m	64.04	30.19	31.06	31.33	1.97	1.97	2.29	2.35	17.49	15.13	16.87	17.17
E4_30m	63.34	30.12	30.93	31.17	1.93	1.93	2.23	2.28	17.25	14.93	16.56	16.83
E4_40m	62.00	29.97	30.67	30.87	1.86	1.86	2.12	2.16	16.78	14.54	15.95	16.19
E4_50m	61.03	29.87	30.48	30.65	1.81	1.81	2.04	2.08	16.45	14.26	15.52	15.72
E4_60m	60.29	29.79	30.34	30.49	1.77	1.77	1.98	2.01	16.19	14.05	15.19	15.38
E4_70m	59.69	29.72	30.23	30.36	1.74	1.74	1.93	1.96	15.99	13.88	14.93	15.10
E4_80m	59.20	29.67	30.14	30.26	1.71	1.71	1.89	1.92	15.82	13.74	14.72	14.88

Transect / Receptor	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)			
	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS
E4_90m	58.79	29.62	30.06	30.17	1.69	1.69	1.86	1.88	15.68	13.63	14.54	14.68
E4_100m	58.43	29.59	30.00	30.10	1.67	1.67	1.83	1.85	15.56	13.53	14.39	14.52
E4_110m	58.12	29.55	29.94	30.04	1.65	1.65	1.80	1.83	15.45	13.44	14.25	14.38
E4_120m	57.85	29.52	29.89	29.98	1.64	1.64	1.78	1.80	15.36	13.36	14.14	14.26
E4_130m	57.60	29.50	29.85	29.93	1.63	1.63	1.76	1.78	15.28	13.29	14.03	14.15
E4_140m	57.38	29.47	29.81	29.89	1.61	1.61	1.75	1.76	15.20	13.23	13.94	14.05
E4_150m	57.19	29.45	29.77	29.85	1.60	1.60	1.73	1.75	15.14	13.18	13.86	13.96
E4_160m	57.01	29.43	29.74	29.81	1.60	1.59	1.72	1.73	15.07	13.13	13.78	13.88
E4_170m	56.85	29.41	29.71	29.78	1.59	1.59	1.70	1.72	15.02	13.08	13.71	13.80
E4_180m	56.70	29.40	29.69	29.75	1.58	1.58	1.69	1.71	14.97	13.04	13.65	13.74
E4_190m	56.56	29.38	29.66	29.72	1.57	1.57	1.68	1.70	14.92	13.00	13.59	13.68
E4_200m	56.43	29.37	29.64	29.70	1.57	1.56	1.67	1.68	14.88	12.97	13.53	13.62
E5_32.95m	33.66	18.80	19.05	19.08	1.74	1.68	1.79	1.80	16.96	14.55	15.15	15.21
E5_40m	32.86	18.71	18.94	18.97	1.69	1.63	1.73	1.74	16.63	14.32	14.85	14.91
E5_50m	32.06	18.62	18.82	18.85	1.63	1.59	1.68	1.69	16.30	14.09	14.56	14.61
E5_60m	31.48	18.56	18.74	18.77	1.60	1.56	1.64	1.65	16.06	13.93	14.35	14.40
E5_70m	31.05	18.51	18.68	18.71	1.57	1.54	1.61	1.62	15.88	13.80	14.19	14.24
E5_80m	30.71	18.47	18.63	18.66	1.55	1.52	1.59	1.59	15.75	13.70	14.07	14.11
E5_90m	30.44	18.44	18.59	18.62	1.53	1.50	1.57	1.58	15.63	13.63	13.97	14.01
E5_100m	30.21	18.41	18.56	18.59	1.51	1.49	1.55	1.56	15.54	13.56	13.88	13.93
E5_110m	30.01	18.39	18.54	18.56	1.50	1.48	1.54	1.55	15.46	13.50	13.81	13.85
E5_120m	29.84	18.37	18.51	18.54	1.49	1.47	1.53	1.53	15.39	13.45	13.75	13.79
E5_130m	29.69	18.36	18.49	18.52	1.48	1.46	1.52	1.52	15.33	13.41	13.70	13.73

Transect / Receptor	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)			
	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS
E5_140m	29.56	18.34	18.47	18.50	1.47	1.46	1.51	1.51	15.28	13.37	13.65	13.69
E5_150m	29.44	18.33	18.46	18.48	1.46	1.45	1.50	1.51	15.23	13.34	13.61	13.64
E5_160m	29.34	18.32	18.44	18.47	1.46	1.44	1.49	1.50	15.18	13.31	13.57	13.60
E5_170m	29.24	18.31	18.43	18.46	1.45	1.44	1.49	1.49	15.15	13.28	13.53	13.57
E5_180m	29.15	18.30	18.42	18.44	1.45	1.43	1.48	1.49	15.11	13.25	13.50	13.53
E5_190m	29.07	18.29	18.41	18.43	1.44	1.43	1.47	1.48	15.08	13.23	13.47	13.50
E5_200m	28.99	18.28	18.40	18.42	1.44	1.43	1.47	1.47	15.05	13.21	13.44	13.47
E6_15.7m	67.17	23.45	24.10	24.13	3.07	3.09	3.46	3.48	33.61	29.97	31.95	32.05
E6_20m	61.75	22.88	23.44	23.46	2.79	2.82	3.13	3.15	31.85	28.49	30.19	30.28
E6_30m	53.90	22.04	22.47	22.49	2.40	2.41	2.65	2.67	29.28	26.35	27.63	27.70
E6_40m	49.23	21.54	21.90	21.91	2.16	2.18	2.37	2.38	27.74	25.07	26.11	26.16
E6_50m	46.10	21.21	21.51	21.52	2.01	2.02	2.18	2.19	26.71	24.21	25.08	25.13
E6_60m	43.83	20.97	21.23	21.24	1.89	1.90	2.04	2.05	25.95	23.59	24.34	24.38
E6_70m	42.12	20.79	21.02	21.03	1.80	1.81	1.93	1.94	25.38	23.12	23.78	23.81
E6_80m	40.77	20.64	20.85	20.86	1.74	1.74	1.85	1.86	24.93	22.75	23.33	23.37
E6_90m	39.69	20.53	20.71	20.73	1.68	1.69	1.78	1.79	24.57	22.45	22.98	23.01
E6_100m	38.80	20.43	20.60	20.61	1.64	1.64	1.73	1.73	24.27	22.20	22.68	22.71
E6_110m	38.06	20.36	20.51	20.52	1.60	1.60	1.68	1.69	24.02	22.00	22.43	22.46
E6_120m	37.42	20.29	20.43	20.44	1.57	1.57	1.64	1.65	23.80	21.82	22.22	22.25
E6_130m	36.88	20.23	20.36	20.37	1.54	1.54	1.61	1.61	23.62	21.67	22.04	22.07
E6_140m	36.41	20.18	20.30	20.31	1.51	1.52	1.58	1.58	23.46	21.54	21.89	21.91
E6_150m	36.00	20.14	20.25	20.26	1.49	1.49	1.56	1.56	23.32	21.43	21.75	21.77
E6_160m	35.64	20.10	20.21	20.22	1.47	1.48	1.53	1.54	23.20	21.33	21.63	21.65

Transect / Receptor	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)			
	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS
E6_170m	35.32	20.06	20.17	20.18	1.46	1.46	1.51	1.52	23.09	21.24	21.52	21.54
E7_10.8m	97.63	26.71	27.84	27.88	4.64	4.68	5.34	5.37	43.60	38.49	41.99	42.14
E7_20m	77.45	24.55	25.36	25.39	3.61	3.64	4.10	4.12	37.06	32.90	35.37	35.48
E7_30m	66.56	23.39	24.03	24.05	3.05	3.08	3.43	3.45	33.51	29.89	31.80	31.89
E7_40m	59.99	22.69	23.22	23.24	2.72	2.74	3.03	3.05	31.34	28.08	29.65	29.73
E7_50m	55.54	22.22	22.67	22.69	2.49	2.51	2.76	2.77	29.87	26.85	28.19	28.26
E7_60m	52.28	21.87	22.27	22.29	2.33	2.34	2.56	2.57	28.79	25.95	27.13	27.18
E7_70m	49.79	21.61	21.97	21.98	2.20	2.21	2.41	2.42	27.97	25.26	26.31	26.37
E7_80m	47.82	21.40	21.72	21.74	2.10	2.11	2.29	2.30	27.31	24.72	25.67	25.71
E7_90m	46.21	21.22	21.53	21.54	2.02	2.03	2.19	2.20	26.77	24.27	25.14	25.18
E7_100m	44.87	21.08	21.36	21.37	1.95	1.96	2.11	2.11	26.33	23.90	24.70	24.74
E7_110m	43.74	20.96	21.22	21.23	1.89	1.90	2.04	2.04	25.95	23.59	24.33	24.37
E7_120m	42.77	20.86	21.10	21.11	1.84	1.85	1.98	1.98	25.62	23.32	24.01	24.05
E7_130m	41.93	20.77	21.00	21.01	1.80	1.81	1.93	1.93	25.34	23.09	23.73	23.77
E7_140m	41.19	20.69	20.91	20.92	1.76	1.77	1.88	1.89	25.09	22.89	23.49	23.52
E7_150m	40.54	20.62	20.82	20.84	1.73	1.73	1.84	1.85	24.87	22.70	23.27	23.30
E7_160m	39.96	20.56	20.75	20.76	1.70	1.70	1.80	1.81	24.68	22.54	23.08	23.11
E7_170m	39.43	20.50	20.69	20.70	1.67	1.68	1.77	1.78	24.50	22.40	22.91	22.93
E7_180m	38.96	20.45	20.63	20.64	1.65	1.65	1.74	1.75	24.34	22.27	22.75	22.78
E7_190m	38.53	20.41	20.57	20.58	1.62	1.63	1.71	1.72	24.19	22.14	22.60	22.63
E7_200m	38.14	20.36	20.53	20.53	1.60	1.61	1.69	1.70	24.06	22.04	22.48	22.50
E8_6.75m	84.22	31.33	33.04	34.49	3.46	3.16	3.33	3.40	26.44	20.88	21.89	22.34
E8_10m	77.96	30.61	32.06	33.29	3.12	2.88	3.03	3.09	24.31	19.35	20.25	20.63

Transect / Receptor	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)			
	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS
E8_20m	67.69	29.41	30.43	31.26	2.58	2.43	2.55	2.59	20.85	16.91	17.63	17.87
E8_30m	62.69	28.82	29.62	30.25	2.33	2.21	2.32	2.35	19.19	15.74	16.37	16.56
E8_40m	59.66	28.47	29.12	29.62	2.17	2.08	2.18	2.20	18.19	15.04	15.62	15.77
E8_50m	57.60	28.23	28.79	29.20	2.07	1.99	2.09	2.11	17.51	14.57	15.11	15.24
E8_60m	56.11	28.05	28.54	28.89	1.99	1.93	2.02	2.04	17.02	14.23	14.74	14.85
E8_70m	54.97	27.91	28.36	28.66	1.94	1.88	1.97	1.98	16.65	13.97	14.45	14.56
E8_80m	54.06	27.81	28.21	28.47	1.89	1.84	1.93	1.94	16.35	13.76	14.23	14.32
E8_90m	53.31	27.72	28.09	28.32	1.85	1.81	1.89	1.91	16.10	13.58	14.04	14.13
E8_100m	52.69	27.64	27.99	28.20	1.82	1.78	1.86	1.88	15.90	13.44	13.88	13.96
E8_110m	52.15	27.58	27.90	28.09	1.80	1.76	1.84	1.85	15.72	13.32	13.75	13.82
E8_120m	51.69	27.53	27.82	28.00	1.77	1.74	1.82	1.83	15.57	13.21	13.63	13.70
E8_130m	51.28	27.48	27.76	27.92	1.75	1.72	1.80	1.81	15.44	13.11	13.53	13.59
E8_140m	50.92	27.44	27.70	27.85	1.73	1.71	1.78	1.79	15.32	13.03	13.43	13.49
E8_150m	50.59	27.40	27.65	27.79	1.72	1.69	1.76	1.77	15.21	12.95	13.35	13.41
E8_160m	50.29	27.36	27.60	27.73	1.70	1.68	1.75	1.76	15.12	12.88	13.27	13.33
E8_170m	50.02	27.33	27.56	27.68	1.69	1.67	1.74	1.75	15.03	12.82	13.20	13.25
E8_180m	49.77	27.30	27.52	27.64	1.68	1.66	1.73	1.73	14.95	12.76	13.13	13.18
E8_190m	49.54	27.27	27.49	27.59	1.67	1.65	1.71	1.72	14.87	12.70	13.07	13.12
E8_200m	49.32	27.25	27.45	27.55	1.65	1.64	1.70	1.71	14.80	12.65	13.01	13.06
E9_8.05m	76.08	30.46	32.20	33.71	2.90	2.69	2.84	2.88	23.04	18.38	19.25	19.58
E9_10m	73.02	30.09	31.62	32.94	2.77	2.58	2.72	2.75	22.14	17.76	18.57	18.87
E9_20m	64.39	29.05	30.02	30.82	2.37	2.25	2.37	2.39	19.54	15.98	16.65	16.84
E9_30m	60.42	28.57	29.30	29.87	2.19	2.10	2.20	2.23	18.31	15.14	15.75	15.90

Transect / Receptor	Total Annual Mean NOx (µg/m^3)				Total Annual Mean NH_3 (µg/m^3)				Total Annual Mean N Dep (kgN/ha/yr)			
	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS	2019 Base	2041 FB	2041 DM	2041 DS
E9_40m	58.14	28.30	28.89	29.32	2.08	2.01	2.11	2.13	17.60	14.66	15.23	15.36
E9_50m	56.67	28.12	28.63	28.98	2.01	1.95	2.05	2.07	17.14	14.35	14.90	15.01
E9_60m	55.66	28.00	28.44	28.74	1.96	1.91	2.01	2.02	16.82	14.14	14.67	14.77
E9_70m	54.94	27.91	28.31	28.56	1.93	1.88	1.98	1.99	16.59	13.98	14.51	14.61
E9_80m	54.40	27.84	28.21	28.43	1.90	1.86	1.96	1.97	16.42	13.87	14.40	14.48
E9_90m	54.00	27.79	28.14	28.33	1.88	1.85	1.94	1.96	16.30	13.79	14.32	14.40
E9_100m	53.70	27.75	28.08	28.25	1.87	1.84	1.93	1.95	16.20	13.73	14.26	14.33
E9_110m	53.47	27.72	28.04	28.19	1.86	1.83	1.93	1.94	16.13	13.69	14.22	14.29
E9_120m	53.30	27.70	28.00	28.14	1.85	1.83	1.92	1.93	16.08	13.66	14.19	14.26
E9_130m	53.18	27.68	27.98	28.11	1.84	1.82	1.92	1.93	16.04	13.64	14.17	14.24
E9_140m	53.10	27.67	27.96	28.08	1.84	1.82	1.92	1.93	16.02	13.63	14.17	14.23
E9_150m	53.06	27.66	27.94	28.06	1.84	1.82	1.92	1.93	16.00	13.63	14.17	14.23
E9_160m	53.04	27.66	27.93	28.04	1.84	1.82	1.92	1.93	16.00	13.64	14.18	14.24
E9_170m	53.04	27.66	27.93	28.03	1.84	1.82	1.92	1.93	16.00	13.65	14.19	14.25
E9_180m	53.07	27.66	27.93	28.02	1.84	1.83	1.93	1.94	16.01	13.66	14.21	14.28
E9_190m	53.11	27.66	27.93	28.02	1.84	1.83	1.93	1.94	16.03	13.68	14.24	14.30
E9_200m	53.18	27.66	27.93	28.02	1.84	1.83	1.94	1.95	16.05	13.71	14.27	14.33

Appendix E Air quality modelling methodology

Portsmouth City Council- Air Quality Modelling

Portsmouth Local Plan

Project number: 60586784

February 2024

Delivering a better world

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
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1. Introduction

1.1 Portsmouth City Council (PCC) is preparing a Draft Local Plan 2041 which represents a full review of the adopted Local Plan. Once the Local Plan has been through a number of statutory stages of preparation, it will be examined and if found to be sound, it can be adopted. Upon adoption it will replace the current Portsmouth Plan (Revised Local Plan 2012-2027). The Council has commissioned AECOM Limited to conduct an air quality assessment to inform the Habitats Regulations Assessment (HRA) of the Regulation 18 Stage 2 preparation of the Local Plan 2041 and to form part of the evidence base.

1.2 The work presented in this report is to be used to inform the Appropriate Assessment of the HRA. It focuses on the impact of traffic related emissions due to planned development during the Local Plan period on sensitive ecosystems within the:

- Solent Maritime Special Area of Conservation (SAC);
- Portsmouth, Chichester and Langstone Harbour Special Protection Areas (SPAs);
- Portsmouth, Chichester and Langstone Harbour wetlands of international importance (RAMSAR); and
- Portsmouth and Langstone Harbour Sites of Special Scientific Interest (SSSIs).

1.3 The Ecological sites are mainly designated for their importance for bird species, consisting of a range of wetlands and mudflats which are potentially sensitive to nitrogen and acid deposition due to several reasons, such as soil acidification and toxicity to species (Natural England, 2018). More specifically, in terms of nitrogen sensitive habitats, the Solent Maritime SAC contains salt meadows, coastal dunes, mudflats and sandflats. Special Protection Areas (SPAs) are designated for the conservation of wild birds. They are classified for rare and vulnerable species of birds and for regularly occurring migratory species. It should be noted that many of the identified ecological sites overlap substantially and that some areas are designated with two or three different forms of protection.

1.4 This assessment considers the following four key pollutants shown to affect sensitive ecosystems: ammonia (NH_3), oxides of nitrogen (NO_x), total nitrogen (N) deposition and total acid deposition. All pollutants are considered at receptor points, within transects, up to 200m of the roadside, within each of the ecological sites considered in the assessment.

1.5 The main aims of this study are to:

- Identify potentially sensitive ecological receptor locations within the ecological sites, within 200m of roads that are expected to be affected by the Local Plan 2041;
- Predict annual mean NO_x and NH_3 concentrations and nitrogen and acid deposition rates for the following scenarios at selected ecological receptors;
    - Baseline year (2019): represents air quality in a recent past year (2019);
    - Future Baseline (2041): uses the traffic data from the ‘current baseline’ in 2019, but applies future assessment year vehicle emission factors and background pollutant concentrations to allow for the ‘in combination’ assessment required for the HRA;
    - 2041 ‘Do Minimum’ (DM) Reference Case: future assessment year, which does not include the influence of planned development from the Local Plan 2041, but does allow for strategic planned development in neighbouring local authorities;
    - 2041 ‘Do Something’ (DS) Scenario: future assessment year, which includes the influence of planned development from the Portsmouth City Council Local Plan 2041, using the growth scenario from the Transport Assessment and from strategic planned development in neighbouring local authorities.
- Determine if there are any exceedances of NO_x and NH_3 critical levels, and nitrogen and acid deposition critical loads within the three ecological habitat sites.

1.6 The results and implications of the modelling outputs are presented in the accompanying report ‘Habitats Regulations Assessment (HRA) of the Portsmouth City Council Plan Review’. More detail on the Transport Assessment and associated modelling are available separately.

2. Policy Context

Clean Air Strategy

2.1 In 2019, the UK government released its Clean Air Strategy 2019 (Defra, 2019) as part of its 25 Year Environment Plan (Defra, 2018). These documents include targets to reduce emissions of ammonia from farming activities, and nitrogen oxides from combustion processes, and thus reduce the deposition of nitrogen to sensitive ecosystems.

Environment Act

2.2 The Environment Act 2021 (HM Government, 2021) amends the Environment Act 1995 (HM Government, 1995). On 9th November 2021, the Act received Royal Assent after being first introduced to Parliament in January 2020 to address environmental protection and the delivery of the Government's 25 Year Environment Plan. It includes provisions to establish a set of statutory environmental principles to ensure environmental governance through an environmental watchdog, the Office for Environmental Protection (OEP).

2.3 The Secretary of State must publish a review report every five years (as a minimum and with yearly updates to Parliament). The 25 Year Environment Plan has been adopted as the first Environmental Improvement Plan (EIP) of the Environment Act 2021, with long-term legally binding targets being finalised by Defra[1]. The EIP 2023 was published in January 2023 (updated February 2023), building on the 25 Year Environment Plan, and setting out how the delivery of environmental goals will be coordinated with landowners, communities and businesses.

Habitats Regulations Assessment

2.4 While the UK is no longer a member of the EU, a requirement for HRA will continue as set out in the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

2.5 The HRA process applies the 'Precautionary Principle'[2] to European sites[3]. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the European site(s) in question. To ascertain whether or not site integrity will be affected, an Appropriate Assessment should be undertaken of the Plan or project in question.

2.6 Following evidence gathering, the first stage of any HRA is the screening for Likely Significant Effects (LSEs), a high-level assessment to decide whether the Appropriate Assessment is required. Where it is determined that a conclusion of 'no Likely Significant Effects' cannot be drawn, the analysis proceeds to the Appropriate Assessment.

Other Guidance documents

2.7 Best practice and advice / guidance contained within documents from Natural England (Natural England, 2018), the Institute of Air Quality Management (IAQM) (IAQM, 2020), the Chartered Institute of Ecology and Environmental Management (CIEEM) (CIEEM, 2021) and National Highways (Design Manual for Roads and Bridges DMRB LA105) (DMRB, 2019) have been used to determine the methodology applied, and in the accompanying ecological interpretation of the results.

[1] https://www.gov.uk/government/news/update-on-progress-on-environmental-targets
[2] The Precautionary Principle, which is referenced in Article 191 of the Treaty on the Functioning of the European Union, has been defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005) as: *"When human activities may lead to morally unacceptable harm* [to the environment] *that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. The judgement of plausibility should be grounded in scientific analysis".*
[3] https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site - "*A European site is protected by the Conservation of Habitats and Species Regulations 2017 as amended (known as the Habitats Regulations)*". These include Special Areas of Conservation (SACs), Special Protection Areas (SPAs), and Ramsar sites (wetlands of international importance).

Critical Levels

2.8 Annual mean critical levels of NO_x and NH_3 are summarised in Table 1. These are concentrations above which adverse effects on ecosystems may occur based on present knowledge. The critical level for NO_x is taken from the EU Ambient Air Quality Directive 2008/50/EU (EU Directives, 2008) which has also been set as the Air Quality Strategy objective for the protection of vegetation and ecosystems and has been incorporated into English legislation.

2.9 The EU Directive (EU Directives, 2008) states that the sampling point to determine compliance should be sited more than 20 km away from agglomerations or more than 5 km away from other built-up areas, industrial installations or motorways or major roads with traffic counts of more than 50,000 vehicles per day, which means that a sampling point must be sited in such a way that is representative of an area of at least 1,000 km^2. Applying the critical level for NO_x to designated nature conservation sites that are located close to busy roads is therefore precautionary.

2.10 The critical levels for NH_3 have not been incorporated into legislation and are a recommendation made by the United Nations Economic Commission for Europe (UNECE) Executive Body for the Convention on Long-Range Transboundary Air Pollution (CLRTAP) (UNECE, 2013).

Table 1: Annual Mean Critical Levels (NO_x and NH_3)

Pollutant	Critical Level
Oxides of nitrogen (NO_x)	30 µg/m^3
Ammonia (NH_3)	3 µg/m^3 for higher plants 1 µg/m^3 for lichens and bryophytes

3. Methodology

3.1 The Local Plan will significantly increase the population and employment opportunities within the city which may result in more commuter journeys being undertaken within 200m of sensitive ecological sites. Therefore, LSEs cannot be excluded, and four European sites are screened in for Appropriate Assessment regarding this impact pathway. This is in accordance with Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (Natural England, 2018). In addition, a number of SSSIs have been considered in order to take a precautionary approach.

3.2 As such, the air quality modelling methodology and analyses presented in this report have been undertaken to inform the HRA for the ecological sites, set out in paragraph 1.2. These ecological sites have been considered in the assessment as they contain habitats and species that are sensitive to air quality or deposition impacts with more information provided in the introduction section.

3.3 The following sections outline the methodology used to model air quality in the ecological sites as listed above, affected by changes to traffic associated with the Portsmouth Local Plan 2041. The following sources of information and data have been used to form the basis of the air quality assessment:

- Department for Environment, Food and Rural Affairs' (Defra) Air Quality Background Concentration Maps based on a 2018 base year (Defra, 2020a);
- Defra's Vehicle Emission Factors (Defra, 2020b);
- Emission rates as published in the Calculator for Road Emissions of Ammonia (CREAM) tool (Air Quality Consultants, 2020);
- 1x1 km modelled nitrogen and acid deposition data and ammonia background concentrations from the Air Pollution Information System (APIS, 2022);
- Traffic count and speed data used to inform the Transport Assessment for 2019 and 2041.

3.4 The modelling assessment was conducted following methodology within Defra's Local Air Quality Management Technical Guidance (LAQM.TG(22)) (Defra, 2022), and guidance contained within documents from Natural England (Natural England, 2018), the Institute of Air Quality Management (IAQM) (IAQM, 2020) and the Chartered Institute of Ecology and Environmental Management (CIEEM) (CIEEM, 2021).

Pollutants of Interest

3.5 The pollutants of interest with regard to sensitive ecosystems for which critical levels and critical loads exist, and which are included in the air quality modelling and assessment of impacts on the ecological sites listed above, are NO_x, NH_3, and nitrogen and acid deposition. Modelling of these pollutants is undertaken to assess the air quality impacts of planned development in the Local Plan on the ecological sites alone, and 'in combination' with existing plans within surrounding authorities.

3.6 Whilst emissions of NO_x from road vehicles are regulated according to Euro standards, emissions of NH_3 are not. This means that emissions of NH_3 from individual vehicle types are highly uncertain, particularly as measurements are rarely made (as this is not required for regulatory purposes). The uncertainty associated with the predicted nitrogen deposition rates from NH_3 is also greater than for NO_2, with the NH_3 derived nitrogen deposition rates representing an upper estimate.

3.7 There is currently no tool publicly available for the assessment of road traffic emissions of NH_3 from National Highways, Defra, Natural England, or other nature conservation bodies. However, there is evidence that exclusion of NH_3 from assessments leads to an underestimate of deposited nitrogen (Air Quality Consultants, 2020).

3.8 The methodology used to model NH_3 concentrations from road traffic, using ADMS Roads, and the subsequent contribution to nitrogen deposition within the ecological sites (described below), is considered the most appropriate that is available at this time. The methodology has been applied by AECOM in

several Appropriate Assessments to inform HRA including that for Tunbridge Wells Borough Council, Epping Forest, Wealden and Mid Sussex District Councils.

Nitrogen Oxides

3.9 Detailed dispersion modelling of road traffic emissions of NO_x has been undertaken using the latest version of ADMS Roads (currently v5), combined with the latest version – at the time of assessment – of Defra's Emissions Factor Toolkit (EFT v12.0.1). Although vehicle emission factors are now available for 2031 - 2050, it should be noted that improvements in vehicle emission factors may not be fully accounted for, e.g. the introduction of Euro 7 engine standard anticipated to be around 2025, and the ban on the sale of new petrol and diesel cars and vans in 2035.

Ammonia

3.10 In February 2020, Air Quality Consultants developed and published the Calculator for Road Emissions of Ammonia (CREAM) tool, '*in order to allow tentative predictions regarding trends in traffic-related ammonia emissions over time*'. The tool is based upon remotely sensed pollutant measurements, published real-world fuel consumption data, and ambient measurements of ammonia recorded in Ashdown Forest (2014-2016).

3.11 The report that was published alongside the CREAM tool states that:

"*It should be recognised that these emissions factors remain uncertain. Using them to make future year predictions will clearly be an improvement on any assessment which omits ammonia. They are also considered to be more robust than the emissions factors contained in the EEA Guidebook, which risk significantly under-predicting ammonia emissions. The emissions factors contained in the CREAM model can be considered to provide the most robust estimate of traffic-related ammonia possible at the present time, but they may be updated in the future as more information becomes available*."

3.12 The CREAM tool currently uses vehicle fleet information from Defra's EFT v9 which has now been superseded. AECOM has therefore applied the ammonia emission factors, as derived by Air Quality Consultants and in the current version of CREAM, with the average vehicle fleet on rural roads from EFT v12.0.1 to estimate emissions.

3.13 The latest version of ADMS Roads (v5) has been employed to model the dispersion of emissions of NH_3 from road traffic, consistent with the approach for modelling emissions of NO_x.

Traffic Data

3.14 The traffic data used for this assessment is based on the modelling undertaken for the Transport Assessment for 1 growth scenario. The traffic data were provided for a series of road links within 200m of the ecological sites considered. These links were chosen as they are located on the busiest roads in the area that are expected to experience the greatest increase in flows over the Local Plan period. As such, these are the roads where an air quality effect due to additional traffic growth is most likely to be observed. The modelled road links in each of the ecological sites are shown in Figures A1 and A2.

3.15 Traffic data were provided for each of the road links, in the form of 24-hour Annual Average Daily Traffic (AADT) flows, with percentage heavy duty vehicle (HDV) flows and average speed for four scenarios – 2019 baseline (also used for the future baseline), future year 'Do Minimum' (or 'Reference Case'), and two future year 'Do Something' Scenarios. A summary of the traffic data used in the air quality assessment is given in Appendix 1.

Modelled Vehicle Fleet

3.16 Automatic Number Plate Recognition (ANPR) data from 2023 was used to obtain an estimate of the current local vehicle fleet. Data was obtained from three local traffic monitoring sites over two full days (48 hours in total, one weekend and one weekday). This data was used within the EFT's fleet projection tool to project the 2023 Euro engine classifications of the default fleet backwards to the base scenario year (2019), and also forwards to the future scenario year (2041). These projected fleets were then used in EFT v12.0.1 with the default basic split fleet projections.

Receptors

3.17 Pollutant concentrations and deposition rates have been predicted along defined transects within the ecological sites, within 200m of affected roads, in accordance with National Highways guidance for ecological assessments (LA105) (DMRB, 2019) and Natural England guidance (Natural England, 2018). The greatest impacts from changes in road traffic emissions will be observed and modelled closest to the roadside. Consideration of the road network within 200m of the ecological sites is therefore considered robust as background concentrations utilised in the assessment will account for all other sources that are not defined explicitly in the model.

3.18 The locations of the ecological transects relevant to this project were agreed with PCC and other stakeholders. The transects are situated at key locations where the greatest impacts upon each of the ecological sites assessed are likely to occur.

3.19 For each SAC, the receptors are situated at the closest point to the road within the SAC, and spaced every 10m within the transects, up to 200m from the roadside. All receptors are modelled at ground level (0m height).

3.20 The greatest impacts will generally occur where both the greatest change in traffic flows is expected and the habitats lie closest to the road. This information has been used to select transect locations. The usual approach is to place a transect on a modelled link (sometimes having a transect either side of the road to account for differences in the dispersion of emissions due to meteorology), with each link being defined as a stretch of road between changes in emissions i.e. where there are changes in traffic flows and/or speeds.

Model Setup

3.21 Detailed dispersion modelling was undertaken using the current version of ADMS-Roads (v5) to model concentrations of NO_x and NH_3 using the parameters in Table 2 for the following scenarios:

- 2019 Baseline – 2019 AADT, 2019 emission factors and 2019 “Basic Split” fleet using the backward-projected Euro engine classifications from the 2023 ANPR data, and 2019 background concentrations.
- 2041 Future Baseline – 2019 AADT, 2030 emission factors (latest available year), 2041 projected vehicle fleet using the forward-projected Euro engine classifications from the 2023 ANPR data, and 2030 background concentrations (the latest projected year available from Defra);
- 2041 Do Minimum – 2041 AADT without Local Plan but with all committed development, 2030 emission factors, 2041 projected vehicle fleet using the forward-projected Euro engine classifications from the 2023 ANPR data, and 2030 background concentrations; and
- 2041 Do Something – 2041 AADT with Local Plan, 2030 emission factors, 2041 projected vehicle fleet using the forward-projected Euro engine classifications from the 2023 ANPR data, and 2030 background concentrations.

3.22 A baseline year was modelled to provide a means of model verification – for this assessment, 2019 traffic data were provided for the modelled baseline. To support the assessment of the potential impact of the planned development in the Local Plan scenarios, a ‘future baseline’ and future year ‘do minimum’ scenario were modelled. The ‘do minimum’ scenario includes the influence of development in neighbouring local authorities, whereas the ‘future baseline’ does not.

3.23 The future baseline is a hypothetical scenario as it applies improvements in vehicle emissions standards to the baseline vehicle fleet without allowing for any traffic growth. However, such an approach enables the ‘in combination’ effect of development and traffic growth to be seen unobscured by improvements in emissions technology / performance.

3.24 The difference between the ‘do something’ and the ‘do minimum’ scenarios provide the impact of the planned development within the Local Plan, alone. The difference between the ‘do something’ and the ‘future baseline’ scenarios provides a thorough and precautionary assessment of the impact of the

planned development within the Local Plan 'in combination', as the 'future baseline' accounts for no future growth.

Table 2: General ADMS-Roads Model Conditions

Variables	ADMS-Roads Model Input
Surface roughness at source	0.5m
Surface roughness at Meteorological Site	0.2m
Minimum Monin-Obukhov length for stable conditions	30m
Terrain types	Flat
Receptor location	x, y coordinates determined by GIS, z = 0m for ecological receptors.
Emissions	NO_x – Defra's EFT v12.0.1 NH_3 – CREAM V1A
Meteorological data	1 year (2019) hourly sequential data from Thorney Island meteorological station.
Receptors	Ecological transects
Model output	Long-term (annual) mean NO_x and NH_3 concentrations.

Plume Depletion

3.25 Plume depletion due to dry deposition onto vegetation was taken into account in the model. This was enabled by using the ADMS-Roads 'Dry Deposition' module, applying the 'grassland' deposition rates presented in the Air Quality Technical Advisory Group (AQTAG) deposition velocities that are cited in 2020 IAQM guidance (IAQM, 2020), as shown in Table 3.

3.26 The deposition velocity for NO_2 was applied to raw modelled NO_x. This assumes that 100% of NO_x is emitted as NO_2, and therefore represents an optimistic depletion of NO_x from the atmosphere.

Table 3: Nitrogen Deposition Velocities and Conversion Rates

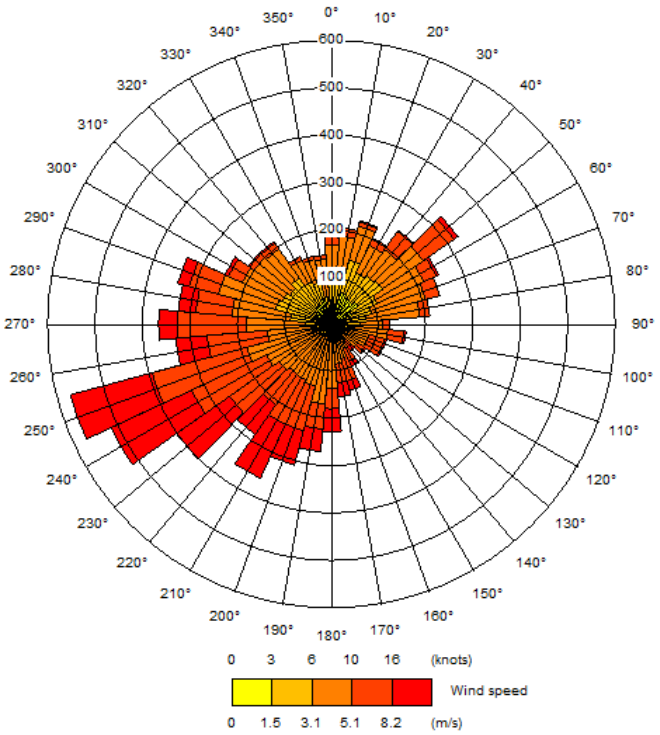
Pollutant	Habitat	Nitrogen deposition conversion rates	Deposition velocity
NO_2	Grassland / short vegetation	1 µg/m^3 NO_2 = 0.14 kgN/ha/yr	0.0015 m/s
NH_3	Grassland / short vegetation	1 µg/m^3 NH_3 = 5.2 kgN/ha/yr	0.020 m/s

Meteorological Data

3.27 One year (2019) of hourly sequential observation data from Thorney Island meteorological station has been used in this assessment to correspond with the baseline traffic data and emission factors. The station is located in a rural setting approximately 3.5 km South of the A27 near Emsworth, along which three of the twelve transects considered in the study are located, and experiences meteorological conditions that are representative of those experienced within the overall air quality study area. In particular, it is noted that the meteorological site experiences a similar level of coastal effects as the ecological sites which is important as this can have a profound effect on dispersion.

3.28 Figure 1 shows that the dominant direction of wind was from the south-west, as is typical for the UK.

Figure 1: Wind Rose, Thorney Island Meteorological Data, 2019



Background Data

3.29 Background concentrations of nitrogen dioxide (NO_2) and NO_x for 2019 and 2030 were sourced from Defra's 2018-based 1x1km background maps in the study area (Defra, 2020a).

3.30 Contributions from explicitly modelled source sectors were removed from the NO_2 and NO_x background concentrations, as outlined in Table 4, in accordance with Defra guidance (Defra, 2022). The data presented in Table 4 show that the concentrations are predicted to decrease between 2019 and 2030.

3.31 The NH_3 background concentrations from APIS are presented in Table 5.

Table 4: Defra Mapped Background Pollutant Concentrations

Transects	Road Name	Grid Square (X, Y)	Annual Mean Concentrations (µg/m³)			
			2019 NO_2	2019 NO_x	2030 NO_2	2030 NO_x
T1	M275	464233 103579	20.8	30.0	14.1	19.3
T2	M275	464003 102705	23.8	35.8	17.3	24.8
T3	M275	464204 103589	20.8	30.0	14.1	19.3
T4	M275	464670 104307	31.9	50.5	19.8	28.7

Transects	Road Name	Grid Square (X, Y)	Annual Mean Concentrations (µg/m³)			
			2019 NO_2	2019 NO_x	2030 NO_2	2030 NO_x
T5	A27	462840 105636	17.8	25.3	13.7	17.9
T6	A27	468812 105203	21.0	30.3	14.2	19.5
T7	A27	429500, 113500	21.0	30.3	14.2	19.5
T8	A2030	467422 104083	26.8	41.1	18.3	26.3
T9	A2030	467394 104084	26.8	41.1	18.3	26.3

Note: Sectors removed as emissions included in detailed dispersion modelling: Motorway (in of 1x1km grid square) and Trunk A road (in of 1x1km grid square)

Ecological Data

3.32 APIS provides 'a searchable database and information on pollutants and their impacts on habitats and species'. For the ecological sites assessed, data for the appropriate habitat have been applied for each receptor along each transect in the study. Data applicable to short vegetation or grassland was used for all of the ecological sites assessed. This includes critical loads of nitrogen and the average nitrogen and acid deposition rates to the habitat, as presented in Table 5.

3.33 Background concentrations of ammonia were also sourced from 5x5 km modelled maps available from APIS, whereas background concentrations of NO_x and NO_2 were sourced from Defra's latest 1x1 km maps, thereby accounting for all sources that are not explicitly defined in the model.

3.34 While scrub and other shrubs are likely to be present within some of the ecological sites assessed, they are not of ecological significance in relation to these habitats. The deposition velocity to short vegetation is applicable where such shrubs are interspersed as part of the habitat.

3.35 In order to create a robust and scientifically agreed projection for background nitrogen deposition trends in the UK, even allowing for growth, the Joint Nature Conservation Committee (JNCC) commissioned the Nitrogen Futures project, which reported in 2020 (JNCC, 2020). The JNCC Nitrogen Futures project investigated whether a net improvement in nitrogen deposition (including expected development over the same period) was expected to occur to 2030 under a range of scenarios ranging from the most cautious scenario (Business As Usual, BAU, reflecting simply existing emission reduction commitments /measures already in place) to much more ambitious scenarios that would require varying amounts of additional, currently uncommitted, measures from the UK government and devolved administrations.

3.36 The report concluded that *'The scenario modelling predicts a substantial decrease in risk of impacts on sensitive vegetation by 2030, under the most likely future baseline [a scenario called '2030 NAPCP+DA (NECR NO_x)']. This is estimated to achieve the UK Government's Clean Air Strategy (CAS) target for England, defined as a 17% decrease in total reactive N deposition onto protected priority sensitive habitats, with a predicted 18.9% decrease [for England] from a 2016 base year'*. The report predicted a fall in nitrogen deposition by 2030 under every modelled scenario, including the most cautious (2030 BAU). For the BAU scenario nitrogen deposition was forecast to decrease between 2017 and 2030 from 277.1 kt N to 239.5 kt N (i.e. a reduction of 37.6 kt N).

3.37 No other changes to the APIS data have been made from those presented (3-year average, 2019-21) for any modelled scenario.

3.38 Not to make *any* allowance for improvements in emission factors or background concentrations would result in increased emissions and hence concentrations over the plan period as an increased number of vehicles is expected on the roads. This is not expected to occur as can be seen from previous long-term trends in the UK, which show improvements over extended periods, not worsening. Historical records (e.g., Defra monitoring trends) show that as increased vehicles enter the fleet that these increases are offset by the improvements in the emissions of the newer vehicles and the removal of older vehicles.

3.39 In 2018 the Court of Justice of the European Union (CJEU) ruled in cases C-293/17 and C-294/17 (often dubbed the Dutch Nitrogen cases). One aspect of that ruling concerned the extent to which autonomous measures (i.e., improvements in baseline nitrogen deposition that are not attributable to the Local Plan) can be taken into account in appropriate assessment, the CJEU ruled that it ***was*** legally compliant to take such autonomous measures into account provided the benefits were not 'uncertain' (paragraphs 130&132). Note that previous case law on the interpretation of the Habitats Directive has clarified that 'certain' does not mean absolute certainty but '*where no reasonable scientific doubt remains*'[4] [emphasis added].

3.40 The forecasts for improvements in NO_x emission factors, background concentrations and background deposition rates used in this report are considered to be realistic and have the requisite level of certainty. This is because a) data are used and to a large extent they build upon established historic trends in NO_x and oxidised nitrogen deposition and b) for total nitrogen deposition they are based on a cautious use of evidenced central government forecasts associated with uptake of technology that has either already been introduced or is widely expected within the professional community to be introduced and effective before 2030, as illustrated in the Nitrogen Futures project.

3.41 When it comes to forecasting the NO_x emissions of additional traffic, it would overestimate those emissions to assume that by 2041 the emission factors will be no different to those in 2019; to make such an assumption would be to fail to take account of the expected continued uptake of Euro 6 compliant vehicles between 2019 and 2041 and would assume (putting it simply) that no motorists would replace their cars during the entire plan period. For example, the latest (Euro 6/VI) emissions standard only became mandatory in 2014 (for heavy duty vehicles) and 2015 (for cars) and the effects will not therefore be visible in the data available from APIS because relatively few people will have been driving vehicles compliant with that standard as early as 2019. Far more drivers can be expected to be using Euro 6 compliant vehicles by the end of the Local Plan period.

3.42 The vehicle emission factors within the air quality modelling tools available only project out to 2030 and so the 2041 assessment year does not recognise continued uptake of more stringent emissions standards. Therefore, the results are likely to be cautious in terms of emissions related to vehicle age.

Table 5: APIS Data for Ecological Transects for 2019-2021

Transect	Av. N Dep kgN/ha/yr[$]	Critical Load N Dep kgN/ha/yr	Total Av. Acid Dep keq/ha/yr N[$]	Critical Load N Acid Dep keq/ha/yr MaxCLMinN-MaxCLMaxN	Background NH_3 (µg/m^3)
E1	12.52	10 - 20	1.01	1.071-5.071	1.29
E2	12.16	10 - 20	0.98	1.071-5.071	1.32
E3	12.52	10 - 20	1.01	1.071-5.071	1.29
E4	12.88	10 - 20	1.04	1.071-5.071	1.26
E5	13.70	10 - 20	1.12	1.071-5.071	1.23

[4] Case C-239/04 Commission v Portugal [2006] ECR 10183, para. 24; Holohan et al vs. An Bord Pleanála (C-461/17), para. 33

Transect	Av. N Dep kgN/ha/yr[$]	Critical Load N Dep kgN/ha/yr	Total Av. Acid Dep keq/ha/yr N[$]	Critical Load N Acid Dep keq/ha/yr MaxCLMinN-MaxCLMaxN	Background NH_3 (µg/m^3)
E6	21.39	5 - 10	0.97	1.071-5.071	1.20
E7	21.39	5 - 10	0.97	1.071-5.071	1.20
E8	12.06	5 - 10	0.94	1.071-5.071	1.24
E9	12.06	5 - 10	0.94	1.071-5.071	1.24

Verification

3.43 Model verification is the process by which the performance of the model is assessed to identify any discrepancies between modelled and measured concentrations at air quality monitoring sites within the study area.

3.44 Modelled predictions were made for annual mean NO_2 concentrations at monitoring locations in order to compare monitored and modelled pollutant concentrations. The comparison of model outputs was made against 2019 monitoring data so as to correspond with the baseline year of assessment. No NH_3 monitoring locations were available and so a standard model adjustment factor of 1.0 was used to adjust the modelled NH_3 concentrations. Following detailed analysis of each monitoring location in the study area, a total of 9 roadside monitoring sites were taken forward in the NO_2 model verification process.

3.45 The calculated verification factor was found to be less than 1.0, which is likely to be due to the impact of open coastal meteorological impacts affecting (increasing) pollutant dispersion at the selected monitoring locations. Therefore, a worst case approach has been considered and a verification factor of 1.0 has been used for NO_2 concentrations, and this factor has additionally been applied to modelled NH_3 concentrations.

Deposition velocities

3.46 Deposited nitrogen from road traffic derived NH_3 and NO_2 was estimated using the deposition velocities presented in Table 3. The conversion rates were applied to the final modelled NO_2 and NH_3 concentrations from road traffic, to provide kgN/ha/year. All of the transects across the ecological habitats were modelled and analysed as heathland / grassland i.e. ‘short vegetation’ was used at all locations.

Appendix A Traffic Data

Transect	Link_Ref	Base 2019			DN 2041			With LP 2041			AADT Comparisons	
		AADT	HGV%	Speed	AADT	HGV%	Speed	AADT	HGV%	Speed	Baseline Growth	2041 Change
E1	58751_90755	35,999	5.0%	103	55,653	3.0%	97	57,550	3.1%	96	19,654	1,896
E2	54146_90847	39,805	4.9%	105	65,620	3.3%	97	68,960	3.2%	95	25,815	3,339
E3	90842_58737	39,820	4.9%	105	69,222	3.2%	50	73,950	3.1%	37	29,401	4,729
E4	58242_58730	0	0.0%	0	1,674	0.0%	80	3,096	0.0%	80	1,674	1,422
E5	28923_58712	10,704	3.6%	52	12,695	5.4%	52	11,992	6.1%	52	1,990	-703
E6	56148_59850	71,749	8.0%	102	89,865	6.7%	95	90,857	6.7%	95	18,115	992
E7	59832_56140	72,134	7.4%	98	89,266	6.4%	92	89,547	6.5%	92	17,132	281
E8	56136_55335	22,474	10.0%	55	25,388	8.2%	53	26,432	8.5%	52	2,914	1,044
E9	55335_56112	22,827	8.4%	20	24,701	7.3%	10	25,232	7.3%	8	1,875	530

Note: Speed is given in kph

Appendix B Modelled Ecological Receptor Locations.

Transect 1	X Co-ordinate	Y Co-ordinate	Transect 2	X Co-ordinate	Y Co-ordinate
E01_4.9m	464233	103579	E02_15.45m	464003	102705
E01_10m	464238	103577	E02_20m	463999	102703
E01_20m	464247	103573	E02_30m	463989	102700
E01_30m	464256	103568	E02_40m	463980	102697
E01_40m	464265	103564	E02_50m	463970	102694
E01_50m	464274	103560	E02_60m	463961	102691
E01_60m	464283	103556	E02_70m	463951	102688
E01_70m	464292	103552	E02_80m	463942	102685
E01_80m	464301	103547	E02_90m	463932	102682
E01_90m	464310	103543	E02_100m	463923	102679
E01_100m	464319	103539	E02_110m	463913	102676
E01_110m	464329	103535	E02_120m	463904	102672
E01_120m	464338	103530	E02_130m	463894	102669
E01_130m	464347	103526	E02_140m	463885	102666
E01_140m	464356	103522	E02_150m	463875	102663
E01_150m	464365	103518	E02_160m	463866	102660
E01_160m	464374	103514	E02_170m	463856	102657
E01_170m	464383	103509			
E01_180m	464392	103505			
E01_190m	464401	103501			
E01_200m	464410	103497			

Transect 3	X Co-ordinate	Y Co-ordinate
E03_3.9m	464204	103589
E03_10m	464199	103592
E03_20m	464189	103596
E03_30m	464180	103600
E03_40m	464171	103603
E03_50m	464162	103607
E03_60m	464153	103611
E03_70m	464143	103615
E03_80m	464134	103619
E03_90m	464125	103623
E03_100m	464116	103627
E03_110m	464107	103631
E03_120m	464097	103635
E03_130m	464088	103639
E03_140m	464079	103643
E03_150m	464070	103646
E03_160m	464060	103650
E03_170m	464051	103654
E03_180m	464042	103658
E03_190m	464033	103662
E03_200m	464024	103666

Transect 4	X Co-ordinate	Y Co-ordinate
E04_26.1m	464670	104307
E04_30m	464673	104305
E04_40m	464681	104299
E04_50m	464690	104294
E04_60m	464698	104288
E04_70m	464707	104283
E04_80m	464715	104277
E04_90m	464723	104272
E04_100m	464732	104267
E04_110m	464740	104261
E04_120m	464748	104256
E04_130m	464757	104250
E04_140m	464765	104245
E04_150m	464774	104239
E04_160m	464782	104234
E04_170m	464790	104228
E04_180m	464799	104223
E04_190m	464807	104218
E04_200m	464816	104212

Transect 5	X Co-ordinate	Y Co-ordinate	Transect 6	X Co-ordinate	Y Co-ordinate
E05_32.95m	462840	105636	E06_15.7m	468812	105203
E05_40m	462841	105629	E06_20m	468808	105205
E05_50m	462841	105619	E06_30m	468801	105212
E05_60m	462841	105609	E06_40m	468793	105218
E05_70m	462841	105599	E06_50m	468785	105225
E05_80m	462841	105589	E06_60m	468778	105231
E05_90m	462841	105579	E06_70m	468770	105237
E05_100m	462842	105569	E06_80m	468762	105244
E05_110m	462842	105559	E06_90m	468755	105250
E05_120m	462842	105549	E06_100m	468747	105257
E05_130m	462842	105539	E06_110m	468739	105263
E05_140m	462842	105529	E06_120m	468732	105270
E05_150m	462842	105519	E06_130m	468724	105276
E05_160m	462843	105509	E06_140m	468716	105282
E05_170m	462843	105499	E06_150m	468709	105289
E05_180m	462843	105489	E06_160m	468701	105295
E05_190m	462843	105479	E06_170m	468693	105302
E05_200m	462843	105469			

Transect 7	X Co-ordinate	Y Co-ordinate	Transect 8	X Co-ordinate	Y Co-ordinate
E07_10.8m	468851	105163	E08_6.75m	467422	104083
E07_20m	468857	105155	E08_10m	467425	104082
E07_30m	468863	105148	E08_20m	467435	104080
E07_40m	468869	105140	E08_30m	467445	104078
E07_50m	468876	105132	E08_40m	467455	104077
E07_60m	468882	105124	E08_50m	467464	104075
E07_70m	468888	105117	E08_60m	467474	104073
E07_80m	468895	105109	E08_70m	467484	104071
E07_90m	468901	105101	E08_80m	467494	104069
E07_100m	468907	105093	E08_90m	467504	104067
E07_110m	468913	105086	E08_100m	467514	104065
E07_120m	468920	105078	E08_110m	467523	104063
E07_130m	468926	105070	E08_120m	467533	104061
E07_140m	468932	105062	E08_130m	467543	104059
E07_150m	468939	105054	E08_140m	467553	104057
E07_160m	468945	105047	E08_150m	467563	104056
E07_170m	468951	105039	E08_160m	467572	104054
E07_180m	468958	105031	E08_170m	467582	104052
E07_190m	468964	105023	E08_180m	467592	104050
E07_200m	468970	105016	E08_190m	467602	104048
			E08_200m	467612	104046

Transect 9	X Co-ordinate	Y Co-ordinate
E09_8.05m	467394	104084
E09_10m	467392	104085
E09_20m	467383	104087
E09_30m	467373	104088
E09_40m	467363	104090
E09_50m	467353	104092
E09_60m	467343	104093
E09_70m	467333	104095
E09_80m	467323	104097
E09_90m	467314	104099
E09_100m	467304	104100
E09_110m	467294	104102
E09_120m	467284	104104
E09_130m	467274	104106
E09_140m	467264	104107
E09_150m	467254	104109
E09_160m	467245	104111
E09_170m	467235	104113
E09_180m	467225	104114
E09_190m	467215	104116
E09_200m	467205	104118

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