

13.0 CUMULATIVE AND SYNERGISTIC EFFECTS

13.1 INTRODUCTION

- 13.1.1 This chapter of the ES considers the findings from the individual assessments within the Environmental Statement and provides an assessment of the cumulative and synergistic effects of the Proposed Development both in combination with other developments and from within the development itself.
- 13.1.2 This chapter has been produced in accordance with the EIA Regulations which require that:
- “The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors –*
- (a) Population and human health;*
 - (b) Biodiversity....;*
 - (c) Land, soil, water, air and climate;*
 - (d) Material assets, cultural heritage and the landscape;*
 - (e) The interaction between the factors referred to in sub-paragraphs (a) to (d).’ [Regulation 4(2)]*
- And*
- ‘A description of the likely significant effects of the development on the environment resulting from, inter alia:*
-*
- (f) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.’ [Schedule 4(5)]*
- 13.1.3 Cumulative effects within EIA are considered to be:
- Effects caused by the actions of different projects together with the project being assessed. These impacts can either contribute to an existing impact or combine to produce an additional impact; and,
 - Impacts between different environmental aspects of a single project which in-combination, incrementally have greater effect on particular receptors.
- 13.1.4 Accordingly, this chapter considers two types of cumulative environmental effects in association with the proposed development:
- Synergistic – the combined effect of different types of impacts attributable to the proposed development; and,
 - Cumulative – effects which arise from the combined effect of the proposed development with other committed developments.

13.2 METHODOLOGY AND SCOPE

Policy Background

National Planning Policy Framework

- 13.2.1 The National Planning Policy Framework (NPPF) places an emphasis on viability and deliverability of plans, ensuring that sites and scales of development should not be subject to such a scale of obligations and policy burdens that their ability to be developed viably is threatened. The NPPF emphasises that cumulative impacts should be considered for a number of topics:
- Planning and flood risk:
- 13.2.2 Paragraph 160 states:
- “Strategic policies should be informed by a strategic flood risk assessment and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards”.*
- Ground Conditions and pollution
- 13.2.3 Paragraph 185 states:
- “Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.”*
- 13.2.4 Paragraph 186 states:
- “Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas”.*

Key Legislation

EC Environmental Impact Assessment (EIA) Directive (2014/52/EU)

- 13.2.5 The EC Environmental Impact Assessment (EIA) Directive (85/337/EEC, as amended by the Directives 97/11/EC, 2003/35/EC, 2009/31/EC, 2011/92/EU and replaced by 2014/52/EU) requires ‘the likely significant effects of projects on the environment must be considered in relation to...the cumulation of the impact with the impact of other existing and/or approved projects.

The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (SI 2017/571)

- 13.2.6 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 outlines ‘the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources’ to be included within ES’.

13.2.7 As required by Schedule 4, Paragraph 5e) of the EIA Regulations (HMSO, 2017), the assessment will take into consideration other existing and /or approved projects.

Assessment Methodology

13.2.8 A range of public sector and industry-led guidance is available on Cumulative Effects Assessment (CEA) and Synergistic or In-combination effects, but at present there is no single, agreed industry standard method. Consequently, the approach to CEA varies between applications. The approach to this assessment is based on previous experience and professional judgement, the types of receptors being assessed, the nature of the Scheme and the environmental information available to inform the assessment.

Cumulative

- 13.2.9 Cumulative effects occur as a result of the interaction of the construction and operation of the proposed development with ‘other’ projects and plans. For this application, the Planning Inspectorate (PINS) Advice Note 17: Cumulative effects assessment relevant to nationally significant infrastructure projects (NSIPs) has been reviewed in determining the most effective approach to cumulative effects assessment within the ES. Albeit, the guidance providing an overview of the CEA process for NSIPs, the note provides clear staged approach and template formats for documenting the CEA within an ES.
- 13.2.10 This ES chapter was therefore based on the staged process as outlined in Table 13.1, amended where necessary to align with the site baseline and constraints identified and information available in the public domainIdentify planning policies of relevance to your specific topic area.

Table 13.1 Summary of the staged approach to the CEA process

Stage	Activity
1	Identify a long list of ‘other developments’ to support Stage 2 Establish the Tier number for each ‘other development’ identified – (summary of each Tier proposed is outlined in Table 8.2) Establish ZOI of scheme for environmental topics proposed to be scoped into the EIA
2	Develop a shortlist of ‘other development’ for CEA by applying inclusion/exclusion criteria to the Stage 1 list of ‘other developments’ and document these in Matrix 1
3	Gather available information regarding the shortlisted ‘other development’ to inform the CEA. These are then documented in Matrix 2
4	Conduct the cumulative effects assessment of the shortlisted ‘other developments’

- 13.2.11 Stages 1 to 2 were undertaken early as part of the EIA scoping phase during which a number of cumulative sites were proposed to HBC for agreement. This stage form part of the Matrix 1 table in which all cumulative sites are listed. At these stages a Zone of Influence (ZOI) is established and a list of ‘other developments’ is identified. For the purposes of this assessment, committed development is defined as those developments meeting one or more of the following criteria:
- The committed development is subject to a planning application, has been, or is currently being consulted upon; has been identified as a local plan commitment or has planning permission;

- The committed development comprises more than 10,000 sqm of development and/ or 100 or more residential units and are of a particularly sensitive nature (e.g. new schools or hospitals);
- The committed development is expected to be built-out at the same time as the proposal and with a defined phasing and construction programme;
- The committed development is considered likely to result in significant environmental effects of some nature, often signified by being subject to EIA; and,
- The committed development is within a relevant geographical boundary or zone of influence, i.e. either within 1km of the site or beyond if this is likely to use same infrastructure network or is visible from same visual receptors.

- 13.2.12 The Zone of Influence (ZOI) of the Proposed Development within which any potential effects of the Proposed Development may combine with the effects arising from other developments has been determined on the basis of the maximum study areas of the technical assessments considered within the EIA. Due to the nature of the proposals and the potential effects resulting from this, the ZOI included cumulative sites located within a 2km radius.
- 13.2.13 The list obtained at these stages is then assessed cumulatively with the Proposed Development and a clear justification for scoping out sites that are likely to represent no significant effects for a specific topic (s) is provided. This staged process was undertaken within Table 13.2 which lists schemes proposed to be assessed as part of the EIA assessments. The list of cumulative sites to be considered were agreed with HBC during the original EIA scoping exercise undertaken in 2018. However, given the time which had elapsed since the previous planning application and that the majority of the development have since progressed, an updated list of potential cumulative developments for consideration was set out within the EIA scoping note which was submitted to HBC in December 2022. However, at the time of writing this ES, no response has been received. The final list of cumulative sites considered within individual technical ES chapters are listed Table 13.2. The last search of cumulative sites was undertaken prior to the submission of this ES in June 2023.

Synergistic

- 13.2.14 Synergistic effects are the effects which in isolation may only represent a slight effect upon a receptor, but in conjunction with the other effects arising from the topic assessments, may represent a greater effect and need to be given further consideration. For example, a local resident might be affected by the noise from the construction phase but might also be affected by dust and increased traffic. Individually, these might not be assessed as being significant, but in combination they might become significant.
- 13.2.15 As there is no established EIA methodology for assessing and quantifying the combined effects of individual effects on sensitive receptors, Tetra Tech has developed an approach which uses the residual effects of the Proposed Development to determine the potential for impact interactions and the consequent potential for combined effect of individual receptors. This form of cumulative assessment is based upon the residual effects as it has been assumed that the additional mitigation detailed within individual topic chapters will be implemented, as it can be readily secured through the planning system.

13.2.16 For some environmental or social topics, no interactions with other aspects can occur and so no combined effects on individual receptors could arise. Where this is the case, the combined effect is not included in the assessment. On this basis, only those effects which have been determined to be minor/slight or above have been considered to represent an effect on identified receptors and are therefore represented in the in-combination effects table.

13.2.17 The assessment of effect interactions has been undertaken in following steps:

- Step A: Identification of receptors or resources considered in more than one technical chapter, and therefore having the potential to be affected by more than one environmental factor. It is during this step that exclusions were identified to avoid overlap with information reported in technical chapters; and,
- Step B: For receptors or resources identified in Step A, the significance of the residual effect from each relevant technical chapter were identified. Consideration was then given to whether there would be a cumulative effect between each individual effect and if so whether the cumulative effect would be of the same or greater significance of the component effects.

Scoping Assessment Stage

13.2.18 The sites considered and where necessary assessed in this chapter include those which have been formally agreed with HBC as part of the EIA scoping exercise undertaken in 2018. Given the time that has lapsed since an agreement of the list was sought, a revised list of cumulative sites was proposed as part of the EIA scoping note (found in Appendix 1.3). No comments on the revised list have been received at the time of writing.

Limitations of the Assessment

13.2.19 There is no established methodology or guidance for assessing and quantifying cumulative or in-combination effects, and therefore the assessment below is qualitative and is based on expert judgement in line with industry best practice.

13.2.20 The developments assessed within this chapter have been identified by Tetra Tech through an informal review of the planning domain as well as any committed developments which were suggested by HBC at scoping stage. However, it is possible that other planning applications are made during the determination of this planning application which are therefore not included in this assessment.

13.2.21 The cumulative assessment is quantitative where practical and utilises relevant data from the corresponding planning applications where this exists in the public domain. Where information does not exist, reasonable assumptions have been made based on the information that is available or an assumption that other schemes will comply with the general national and local policy requirements.

Table 13.2 Cumulative Sites assessed as part of the 2019 ES and updated in June 2023

ID	Application Reference	Application for 'other development' and brief description	Status	Distance from the proposed development?	Progress to ES Assessment?
Previously agreed cumulative sites					
1	10/02862/OUT	Berewood Outline application for the development of approx 2,550 no. dwellings including the construction of a new access from Ladybridge Roundabout, Milk Lane and completion of Maurepas Way access, a local centre (comprising retail, community building, land for healthcare, land for elderly care) public house, land for 2 primary schools, land for a nursery, land for employment uses, associated amenity space along with substantial green infrastructure, SuDS, land for allotments, main pumping station, land for cemetery, restoration of River Wallington, together with landscape structure planting (Matters for Approval Access only) Full planning application for the development of Phase 1 comprising 194 no. dwellings, internal roads, garages, driveways, pathways, boundary treatment, substation, pedestrian/cycleways, including to Maurepas Way, associated parking spaces, flood attenuation ponds, temporary play provision, associated amenity space and hard and soft landscape works. Full planning for engineering operations associated with infrastructure requirements and service provision for the detailed Phase 1 application, the temporary closure of Havant footpath No.11 and Southwick and Widley footpath No.30 with suitable alternative route provided	RMs being submitted Construction ongoing	2km north west	Yes
2	13/01124/FUL 14/01134/NMA	Land adjacent to East Lodge Playing Fields Darlington Construction of a two-storey building (with ancillary accommodation in roofspace) to form 72 bed residential care home and car parking on northern part of site with access from East Lodge Park and change of use of southern part of site to open space	Decision issued in 2014 Not yet constructed	1km to the south	No – application likely to lapse
3	17/00224/OUT	Former Dairy Site, Station Road, Portsmouth Outline application for the construction of up to 108 dwellings	Constructed	2.2	No, forms the existing baseline
4	APP/17/01243	208 London Road, Waterloooville Erection of a single storey building to accommodate a nursery for a maximum number of 78 children including outside play area together with formation of a car park, provision of boundary treatment and landscaping and alternations to existing pedestrian and vehicular accesses following demolition of the existing house	Constructed	2.2	No, forms the existing baseline
5	APP/19/00513	Car Park, Wellington Erection of three-storey multi-storey car park to provide 263 car parking spaces on existing Wellington Way car park	Application withdrawn	2.2	No
6	APP/18/00234	Wellington Way, Waterloooville Demolition of existing shopping parade and redevelopment of the site to provide a nine-storey building consisting of 264 No. 1 bed/studio build to rent apartments and associated amenity facilities, an A2 unit (Financial and Professional Services) together with associated parking and landscaping	Application withdrawn	2.1	No

7	KP8 Allocated Site	South Downs campus Refurbishment and redevelopment of the existing campus to provide new teaching space and educational facilities	No application yet submitted	0.05	Yes
8	H22 Allocated Site	Littlepark House Residential development of up to 50 dwellings	No application yet submitted	0.3	Yes
9	C11 Allocated Site APP/20/01221	Land at Hulbert Road Development of about 6,250m ² of employment floorspace (Class B1, B2 and B8) Erection of retail foodstore with associated car parking, access, landscaping and engineering works.	Decided December 2022	0.5	Yes
10	H14 Allocated Site APP/18/00450	Forty Acres 320 dwellings and a care home Erection of 320 dwellings (including a 30% provision of affordable homes), 66 bed care home, provision of public open space, habitat mitigation zone, allotments, closure of existing access and creation of 2 new access points and associated infrastructure following demolition of existing buildings	Construction works ongoing	0.8	Yes – operational phase only
11	H20 Allocated Site APP/21/01071	Land south of Lower Road Residential development of up to 50 dwellings Outline planning application for up to 43 dwellings, with access from Lower Road and associated landscaping, open space and allotments, and all other matters reserved.	Construction works ongoing	0.8	Yes – operational phase only
12	H24 Allocated Site	Land at Palk Road Residential development of up to 15 dwellings	No application yet submitted	1.7	No due to the distance from the two developments
	APP/22/01231 Land at Palk Road	Redevelopment of a brownfield site to include the provision of 4No. Apartment blocks comprising of 90No. residential dwellings (including 27 affordable units) (Use class C3 residential), parking, public open space, landscaping and other associated works, including demolition of existing buildings on site, with access from Palk Road	Application submitted in December 2022. Not yet decided	1.3	Yes
13	H17 Allocated Site	Portsmouth Water Headquarters Residential development of up to 135 dwellings	No application yet submitted	1.8	No due to the distance from the two developments

	APP/21/00601	Proposed Portsmouth Water Headquarters building (Use Class E(g)(i) use) and new employment premises (Use Class B2.B8/E(g)(iii) use); widened access onto Solent Road; and associated access, car parking, landscaping and works; including the felling of 7No. trees the subject of TPO No.1801 in order to improve the access and allow for the development.	Registered, not yet decided	1.8	Yes
14	H43 Allocated Site	Goodwillies Timber Yard Residential development of up to 120 dwellings	No application yet submitted	1.8	No due to the distance from the two developments

New cumulative sites included in 2023

15	APP/22/00439	The South Downs College, College Road, Purbrook, Waterloooville, PO7 8AA Redevelopment of southern section of site to provide 102 dwellings comprising 56 No. 2, 3 & 4 bed houses and 46 No. 1 & 2 bed flats with associated parking, landscaping, waste and cycle storage. New roundabout access from College Road.	Registered, not yet decided	Immediately to the north	Yes
16	APP/22/00576	The South Downs College, College Road, Purbrook, Waterloooville, PO7 8AA Construction of a new college car park	Registered, not yet decided	Immediately to the north	Yes

13.4 BASELINE ENVIRONMENT

Existing baseline

Cumulative

13.4.1 Developments included within the assessment are as listed within Tables 13.2. The baseline of these developments is outlined, where relevant, within the individual topic assessment presented in this Chapter. No further information is therefore required in this section.

Synergistic

13.4.2 The environmental topics assessed within this ES and the baseline environments outlined within each ES chapter form the baseline environment of the assessment of synergistic effects. No further information is therefore presented in this chapter.

Future baseline

13.4.3 The developments assessed within this chapter are considered to form the future baseline.

13.5 MITIGATION WITHIN THE SUBMITTED DESIGN

Design

- 13.5.1 This form of cumulative assessment is based upon the residual effects as it has been assumed that the additional mitigation detailed within individual topic chapters will be implemented, as it can be readily secured through the planning system.
- 13.5.2 For the cumulative assessment, it has been assumed that all committed schemes will be developed in accordance with the latest national regulations and local policy requirements. No embedded mitigation measures are therefore provided here.

13.6 LIKELY SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE SCHEME

Cumulative

Traffic and Transport

13.6.1 As agreed with HCC, the Former South Downs College Car Park residential development, Forty Acre Farm and the recently approved LIDL has been assessed as committed developments for their likely impact during both the construction and operation phases.

Construction

- 13.6.2 It is likely that the construction phases of both the Former South Downs College Car Park would route from the A3(M) in the same manner as the Proposed Development, therefore passing through both the College Road/Purbrook Way junction and the new proposed signalised junction on College Road. Forty Acre Farm development is not expected to route through the same junctions as the development.
- 13.6.3 Whilst it is not known for certain the level of HGV movements likely to be associated with the cumulative sites, a proportionate estimate has been made based upon the information for the

Proposed Development. As both the Former South Downs College Car Park comprise approximately 100 dwellings (1/7th of the Proposed Development) this proportion has been applied to the HGV movements stated in paragraphs 5.6.3 and 5.6.4. This therefore equates to 13 HGV per day per site.

13.6.4 HGV movements associated with Forty Acres Farm are not anticipated to travel through the junctions assessed as part of the Proposed Development (particularly Junction 4 of the A3(M)) with vehicles utilising Junctions 3 and 5 of the A3(M) respectively. The LIDL development is expected to result in 32 deliveries per day during construction, the majority of which are expected to be undertaken by HGVs (taken from the submitted Transport Assessment). It is anticipated that the majority of these would be routed via the strategic road network via the A3(M). The cumulative construction effect is therefore likely to be slight adverse during the construction period.

Operation

- 13.6.5 As aforementioned, 4 developments have been treated as Committed Developments and included within this baseline traffic flows. No further cumulative assessment is therefore required and cumulative operational effects are considered as part of Section 5.5.
- 13.6.6 These committed developments have been considered and are described in greater detail within the Transport Assessment.
- 13.6.7 As the local junctions are all operating either over capacity in baseline scenarios and mitigation measures have been identified by the Proposed Development to mitigate against its own impact, it is anticipated that the three developments would pay a contribution to the improvements or look for further mitigation measures when they progress with applications.

Archaeology and Heritage

13.6.8 A qualitative assessment of the selected sites has been undertaken considering the potential of any shared resources or receptors which may experience cumulative effects, along with the potential for additional effects as a result of a cumulative interaction. Tables 7.6 and 7.7 list the nearby cumulative schemes that have been considered in this assessment. Consideration of cumulative effects has been determined with reference to assessment reports and consultee responses attached to the planning applications available through the online planning application database of HBC.

Construction

Table 13.3 Cumulative Effects (Construction Phase)

No	Application ref.	Address	Status	Resource Potentially Shared with Proposed Development	Residual Cumulative Impact
1	10/02862/OUT	Berewood	RMs being submitted Construction ongoing	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified, 2km from the Proposed Development

Land east of College Road, Campdown, Purbrook
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2	13/01124/FUL 14/01134/NMA	Land adjacent to East Lodge	Decision issued in 2014 Not yet constructed	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified. Application is likely to lapse
3	17/00224/OUT	Former Dairy Site, Station Road, Portsmouth	Constructed	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified, already constructed
4	APP/17/01243	208 London Road, Waterloooville	Constructed	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified, already constructed
5	APP/19/00513	Car Park, Wellington	Registered in 2020, no decision of the appeal was issued	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified, 2.2km from the Proposed Development
6	APP/18/00234	Wellington Way, Waterloooville	Registered in 2020, no decision of the appeal was issued	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified, 2.1km from the Proposed Development
7	KP8 Allocated Site	South Downs campus	No application yet submitted	Above ground heritage assets: Buried heritage assets: Previously unrecorded Prehistoric or Roman remains	Above ground heritage assets: Potential cumulative impact on the setting of Littlepark Wood Roman villa Buried heritage assets: Potential cumulative impact on previously unrecorded Prehistoric or Roman remains
8	H22 Allocated Site	Littlepark House	No application yet submitted	Above ground heritage assets: Littlepark Wood Roman villa Scheduled Monument Buried heritage assets: Previously unrecorded Prehistoric or Roman remains	Above ground heritage assets: Potential cumulative impact on the setting of Littlepark Wood Roman villa. Buried heritage assets: Potential cumulative impact on previously

					unrecorded Prehistoric or Roman remains
9	C11 Allocated Site APP/20/01221	Land at Hulbert Road	Registered, not yet decided	Above ground heritage assets: None Buried heritage assets: None	Above ground heritage assets: No impact on the setting of Littlepark Wood Roman villa noted. Buried heritage assets: The site is considered to have low archaeological potential due to past truncation
10	H14 Allocated Site APP/18/00450	Forty Acres	Construction works ongoing	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified; construction works ongoing
11	H20 Allocated Site APP/21/01071	Land south of Lower Road	Construction works ongoing	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified; construction works ongoing
12	H24 Allocated Site	Land at Palk Road	No application yet submitted	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified, 1.7km from the Proposed Development
13	H17 Allocated Site	Portsmouth Water Headquarters	No application yet submitted	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified, 1.8km from the Proposed Development
14	H43 Allocated Site	Goodwillies Timber Yard	No application yet submitted	Above ground heritage assets: None Buried heritage assets: None	No cumulative impact identified, 1.8km from the Proposed Development
15	APP/22/00439	The South Downs College, College Road, Purbrook, Waterloooville, PO7 8AA	Registered, not yet decided	Above ground heritage assets: Littlepark Wood Roman villa Scheduled Monument Buried heritage assets: Previously unrecorded Roman remains	Above ground heritage assets: Potential cumulative impact on the setting of Littlepark Wood Roman villa. Buried heritage assets: Potential cumulative impact on previously

					unrecorded Roman remains
16	APP/22/00576	The South Downs College, College Road, Purbrook, Waterlooville, PO7 8AA	Registered, not yet decided	Above ground heritage assets: None Buried heritage assets: None	Above ground heritage assets: No impact on the setting of Littlepark Wood Roman villa noted. Buried heritage assets: The site is considered to have low archaeological potential due to past truncation

Operation

Table 13.4 Cumulative Effects (Operational Phase)

No	Application ref.	Address	Status	Resource Potentially Shared with Proposed Development	Residual Cumulative Impact
1	10/02862/OUT	Berewood	RMs being submitted Construction ongoing	Above ground heritage assets: None Buried heritage assets: N/A	No cumulative impact identified, 2km from the Proposed Development
2	13/01124/FUL 14/01134/NMA	Land adjacent to East Lodge	Decision issued in 2014 Not yet constructed	Above ground heritage assets: None Buried heritage assets: N/A	No cumulative impact identified. Application is likely to lapse
3	17/00224/OUT	Former Dairy Site, Station Road, Portsmouth	Constructed	Above ground heritage assets: None Buried heritage assets: N/A	No cumulative impact identified, already constructed
4	APP/17/01243	208 London Road, Waterlooville	Constructed	Above ground heritage assets: None Buried heritage assets: N/A	No cumulative impact identified, already constructed
5	APP/19/00513	Car Park, Wellington	Registered in 2020, no decision of the appeal was issued	Above ground heritage assets: None Buried heritage assets: N/A	No cumulative impact identified, 2.2km from the Proposed Development

6	APP/18/00234	Wellington Way, Waterlooville	Registered in 2020, no decision of the appeal was issued	Above ground heritage assets: None Buried heritage assets: N/A	No cumulative impact identified, 2.1km from the Proposed Development
7	KP8 Allocated Site	South Downs campus	No application yet submitted	Above ground heritage assets: Buried heritage assets: N/A	Potential
8	H22 Allocated Site	Littlepark House	No application yet submitted	Above ground heritage assets: Littlepark Wood Roman villa Scheduled Monument Buried heritage assets: N/A	Above ground heritage assets: Potential cumulative impact on the setting of Littlepark Wood Roman villa. Buried heritage assets: N/A
9	C11 Allocated Site APP/20/01221	Land at Hulbert Road	Registered, not yet decided	Above ground heritage assets: None Buried heritage assets: N/A	Above ground heritage assets: No impact on the setting of Littlepark Wood Roman villa noted. Buried heritage assets: N/A
10	H14 Allocated Site APP/18/00450	Forty Acres	Construction works ongoing	Above ground heritage assets: None Buried heritage assets: N/A	No cumulative impact identified, 0.8km from the Proposed Development
11	H20 Allocated Site APP/21/01071	Land south of Lower Road	Construction works ongoing	Above ground heritage assets: None Buried heritage assets: N/A	No cumulative impact identified; 0.8km from the Proposed Development
12	H24 Allocated Site	Land at Palk Road	No application yet submitted	Above ground heritage assets: None Buried heritage assets: N/A	No cumulative impact identified, 1.7km from the Proposed Development
13	H17 Allocated Site	Portsmouth Water Headquarters	No application yet submitted	Above ground heritage assets: None Buried heritage assets: N/A	No cumulative impact identified, 1.8km from the Proposed Development
14	H43 Allocated Site	Goodwillies Timber Yard	No application yet submitted	Above ground heritage assets: None	No cumulative impact identified, 1.8km from

				Buried heritage assets: N/A	the Proposed Development
15	APP/22/00439	The South Downs College, College Road, Purbrook, Waterloooville, PO7 8AA	Registered, not yet decided	Above ground heritage assets: Littlepark Wood Roman villa Scheduled Monument Buried heritage assets: N/A	Above ground heritage assets: Potential cumulative impact on the setting of Littlepark Wood Roman villa. Buried heritage assets: N/A
16	APP/22/00576	The South Downs College, College Road, Purbrook, Waterloooville, PO7 8AA	Registered, not yet decided	Above ground heritage assets: None Buried heritage assets: N/A	Above ground heritage assets: No impact on the setting of Littlepark Wood Roman villa noted. Buried heritage assets: N/A

- 13.6.9 Five nearby cumulative effects at construction phase have been identified: KP8 Allocated Site; H22 Allocated Site; C11 Allocated Site (APP/20/01221); The South Downs College (APP/22/00439); and The South Downs College (APP/22/00576). Potential cumulative impacts at construction phase in relation to these sites relate to the potential impact to the setting of Littlepark Wood Roman villa and/or the potential cumulative impact on previously unrecorded Prehistoric or Roman remains.
- 13.6.10 Five nearby cumulative effects at operational phase have been identified: KP8 Allocated Site; H22 Allocated Site; C11 Allocated Site (APP/20/01221); The South Downs College (APP/22/00439); and The South Downs College (APP/22/00576). Potential cumulative impacts at operational phase in relation to these sites relate to the potential impact to the setting of Littlepark Wood Roman villa.

Air Quality

Construction

- 13.6.11 Should the construction phase programmes of any other proposed developments within 500m of the site overlap then there is the potential for increases in dust impacts at sensitive locations. However, the implementation of suitable mitigation at both the proposed development and any other schemes would reduce cumulative impacts to an acceptable level. As such, residual cumulative effects are predicted to be not significant.

Operation

- 13.6.12 No other significant dust sources likely to impact on the sensitive receptors included within the study were identified within the vicinity of the site. As such, residual cumulative effects are predicted to be not significant.
- 13.6.13 Emissions from the above sources were included in the DM and DS scenarios outlined previously. As shown in Table 20, predicted impacts at the sensitive receptor locations, inclusive of the emissions

associated with the cumulative developments, were predicted to be negligible. As such, cumulative air quality effects during the operational phase are therefore considered to be not significant

Noise

Construction

- 13.6.14 Committed developments with the potential for cumulative effects from construction noise have been identified, as listed in Table 13.5.

Table 13.5 Committed Developments relevant to Construction Noise

Scheme Name & Application No.	Scheme Details
KP8 Allocated Site	South Downs campus Refurbishment and redevelopment of the existing campus to provide new teaching space and educational facilities
APP/22/00439	The South Downs College, College Road, Purbrook, Waterloooville, PO7 8AA Redevelopment of southern section of site to provide 102 dwellings comprising 56 No. 2, 3 & 4 bed houses and 46 No. 1 & 2 bed flats with associated parking, landscaping, waste and cycle storage. New roundabout access from College Road.
APP/22/00576	The South Downs College, College Road, Purbrook, Waterloooville, PO7 8AA Construction of a new college car park

- 13.6.15 It is noted that the size and scale of the above cumulative developments are relatively small compared to the Proposed Development. It is unknown whether construction of these elements will coincide. It is considered reasonable to assume that construction operations associated with committed developments will operate under Construction Environmental Management Plans which will require control of noise from construction activities for those sites.
- 13.6.16 The cumulative effects of noise will be most significant during periods where particularly noisy activity is taking place within both the Proposed Development and committed developments at the closest points of the construction workings to nearby noise-sensitive properties, which would be a short-term, minor adverse effect. This would only occur if the programmes and local phasing of both developments were to coincide. For the majority of the time, when workings are more distant from noise-sensitive properties, it is anticipated that any cumulative effects will not be significant, and any effect will be neutral.
- 13.6.17 The remaining committed developments are sufficiently distant from the Proposed Development, so that there will be no cumulative impact from construction noise, and these are not considered further.

Operation

13.6.18 Calculations of the change in road traffic noise level from the 2023 baseline case, as a result of the additional vehicle movements projected for the future scenarios with the Proposed Development and the committed developments are shown in Table 13.6.

Table 13.6 Change in Road Traffic Noise With Proposed Development & Committed Developments

Scenario	Receptor	Predicted Change in L _{A10,18hr} From 2023 Baseline
Future baseline 2033 with development & committed developments	Receptors A – C to west of College Road	4.1 dB
	Receptor D – Purbrook Way	0.7 dB

13.6.19 The maximum anticipated increase in traffic noise levels due to the Proposed Development along with the 2033 Baseline including committed developments, is 4.1 dB L_{A10,18hr} for receptors to the west of College Road. As assessed in accordance with Tables 10.2, 10.3 and 10.5 shown in the Methodology Section of Chapter 10, this is considered a minor adverse effect in the short-term and a neutral effect in the long-term.

13.6.20 For residential receptors adjacent to Purbrook Way, the maximum anticipated increase in traffic noise levels due to the Proposed Development along with the 2033 Baseline, which includes committed developments, is 0.7 dB L_{A10,18hr}. As assessed in accordance with Tables 10.2 – 10.5 shown in the Methodology Section of Chapter 10, this is considered a neutral effect in the short-term and a neutral effect in the long-term.

Ecology

Construction

13.6.21 Apart from Cumulative Sites 7, 15 and 16, none support the same habitat features as are found on site. The rest of the sites are poorly connected due to the A3, A2030 and College Road such that cumulative impacts on mobile features are unlikely.

13.6.22 Embedded mitigation within the Proposed Development for impacts upon statutory designated sites will either mitigate all alone and cumulative effects, or entirely avoid effects such that no cumulative impact is possible.

13.6.23 Cumulative Site 7,15 and 16 are all located within the South Downs College site and reside directly adjacent to the application site. Given the proximity of both these site to deciduous woodland and a SINC, embedded mitigation by means of CEMP will be required consistent with the proposed development. Given the embedded mitigation will avoid all potential effects upon these features there is no potential for a significant cumulative effect.

13.6.24 The site shares a boundary with Cumulative Site 15 and although no dormice have been recorded there, it is suitable. This boundary is also used by foraging and commuting bats and reptiles. With the local presence of protected species concerned, would require suitable surveys and mitigation for these species as per the Proposed Development. The Proposed Development does not result in any

residual effects on these species with embedded and additional mitigation taken into account and there is therefore no potential for significant cumulative effects.

Operation

13.6.25 As discussed above, due to the absence of significant connective features mainly due to main roads, cumulative effects are unlikely for the majority of sites.

13.6.26 Embedded mitigation within the Proposed Development for impacts upon statutory designated sites will either mitigate all alone and cumulative effects, or entirely avoid effects such that no cumulative impact is possible.

13.6.27 Adjacent Cumulative Site 15 shares a boundary with the Proposed Development which is used by bats and other nocturnal fauna. There is potential for lighting from the two sites to combine and result in a significant effect. The proposed development includes a lighting strategy to prevent significant illumination. Due to the presence of protected species, a similar approach will be required for Cumulative Site 15 and as such no significant cumulative effect will occur.

13.6.28 There are considered to be no other potential sources of cumulative effects during operation.

Landscape and Visual

13.6.29 GLS GLVIA 3 states that: ‘In terms of the timescale of proposals for inclusion, existing schemes and those under construction should be included in the baseline for both landscape and visual effects assessment (the LVIA baseline).’

13.6.30 This applies to the cumulative sites identified at Berewood (10/02862/OUT), Forty Acres (APP/18/00450) and Lower Road Bedhampton (APP/18/00450).

13.6.31 The sites at Solent Road Havant (APP/21/00601), Palk Road Bedhampton (APP22/01231), Purbrook Way Havant (APP/20/01221) and Littlepark House Havant (H22 Allocation) will be excluded from the cumulative assessment as neither of these sites can be seen in combination with the proposed development due to intervening topography, dense vegetation or built form and will therefore be unlikely to lead to any cumulative landscape and visual effects.

13.6.32 Allocation KP8 and associated applications APP/22/00439 and APP/22/00576 are all associated with the South Downs College land and will form part of the refurbishment and redevelopment of the existing campus, with current applications comprising a new car park and proposed residential dwellings in the southern part of the campus located immediate to the north west of the site. The development of the South Downs Campus site will be seen in combination with the proposed development site and has to potential to lead to some cumulative effects. Due to the nature of the site being brownfield, the principle of development adjacent to the proposed site has already been established. Whilst built form will be located closer to the proposed site than the current built form associated with the college it is unlikely to result in significant cumulative effects both during the construction and operational stages.

Socio-economic and Human Health

Construction Phase

- 13.6.33 Based on the information that is publicly available, it is possible that the construction phases of all the listed cumulative schemes would overlap with that of the proposed development. All schemes would generate construction employment, resulting in potential beneficial opportunities in the local supply chain and subsequent beneficial cumulative effects.

Operational Phase

- 13.6.34 Based on the Havant Borough Local Plan, there are numerous options to improve local communities, employment, retail and local infrastructure within the area, particularly in relation to housing provision and employment floorspace. The objective housing requirement showed in the Local Plan is to deliver 10,433 new homes during a time period of 21 years (497 dwellings per year) from 2016 to 2037 and the total objective employment floorspace requirement is 86,919sqm during the same period of 21 years (4,139sqm per year). Sites proposed for residential development including the Proposed Development are therefore considered to result in significant cumulative effects in relation to provision of affordable housing and population mix.
- 13.6.35 Additionally, through the provision of commercial space, the cumulative developments would bring forward operational employment opportunities and deliver beneficial effects for Havant Borough. In relation to the potential increases in pressure on the existing schools and GP surgeries, appropriate mitigation is expected to be sought by individual schemes in agreement with the local authority. No further cumulative effects on community facilities are therefore anticipated.
- 13.6.36 All schemes including the Proposed Development include the provision of landscaping and amenity areas which is considered to result in a beneficial cumulative effect in terms of green infrastructure within the study area.

Water Environment

Design, Construction and Operation Phases

- 13.6.37 The embedded mitigation and the mitigation measures proposed as part of the Flood Risk Assessment, the Sustainable Drainage Report and the Surface Water Management Plan provide adequate mitigation of the potential flood and drainage risk posed to the site. Therefore, there are no inherent cumulative impacts that will remain.
- 13.6.38 As a result of the aforementioned mitigation and management measures, the development will not cause any significant adverse environmental impacts to the site, the wider area, and will not increase flood risk outside of the site. The measures suggested aim to provide a betterment to the catchment and will not influence the flood risk to other developments in the area.
- 13.6.39 It is considered that there will be no adverse cumulative impacts associated with any development within the area from a flood risk and drainage perspective. All developments should adhere to the same principles outlined in the NPPF with regard to reducing flood risk and liming surface water runoff.

- 13.6.40 The only cumulative impacts in terms of flood risk and surface water may be beneficial in terms of further attenuating and restricting surface water runoff into the nearby watercourses, and improvements in water quality from appropriate SuDS design.

Synergistic

- 13.6.41 As outlined previously, synergistic effects are the effects which in isolation may only represent a slight effect upon a receptor, but in conjunction with the other effects arising from the topic assessments, may represent a greater effect and need to be given further consideration.
- 13.6.42 The synergistic effects assessment (Tables 13.3 and 13.4 below) identified a number of in-combination effects on a single receptor or group of receptors, as is the case for local residents and wider community, landscape and ecological assets. However, primarily for the timescale reasons, synergistic effects are not considered to be magnitudinally greater than those effects identified by individual topic chapters within this ES and as such no additional mitigation or compensation is considered to be required.

Table 13.3 Synergistic Effects – Construction Phase

Nature of Effect (Post Additional Mitigation)	Local Residents	Wider Community	Landscape Features and Designations (e.g. local footpaths, woodland)
Socio Economic Employment opportunities	Intermediate beneficial		-
Transport Construction Traffic	Minor, adverse		-
Noise Construction noise	Minor, adverse	-	-
Lighting Construction lighting on ecological receptors	-	-	-
Landscape Features Changes to setting of PRoW	Slight, adverse	-	Slight, adverse
Landscape Features Changes to landscape features and character areas	Slight, adverse	-	Slight, adverse
Visual Effects Visual effects from selected viewpoints	Slight, adverse	-	-
Archaeology Effects on archaeological assets (both identified and previously unrecorded)	-	-	-
Hydrology Water use and the impact on water availability	Negligible	-	-

Table 13.4 Synergistic Effects – Operational Phase

Nature of Effect (Post Additional Mitigation)	Local Residents	Wider Community	Landscape Features and Designations	Ecological Receptors
Socio Economic Increase in working age population	Minor, beneficial	Minor, beneficial	-	-
Socio Economic Housing provision	Minor, beneficial	Minor, beneficial	-	-
Socio Economic Health care	Negligible	-	-	-
Socio Economic Recreation/open space/play space provision	Negligible	Negligible	-	-
Traffic Severance/ Driver delay/ pedestrian delay/ pedestrian amenity/ fear and intimidation / accidents and safety	Negligible	Negligible	-	-
Noise (Site)	Negligible	-	-	Negligible
Noise (Off -site Traffic)	Minor adverse	Minor adverse	-	Negligible

Air Quality	-	-	-	Negligible
Drainage	Negligible	-	-	-