

Land at Barnham, Eastergate and Westergate (BEW Parcel SC1) Environmental Statement

Chapter N: Cumulative Assessment

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N1.0 Introduction

- N1.1 This chapter considers the findings from the individual assessments within this Environmental Statement ('ES'); assesses whether there are any inter-relationships between the identified effects and considers the cumulative effects of the Proposed Development when considered alongside other developments in the area surrounding the site. As a result, it establishes whether there are any residual cumulative effects on the identified sensitive receptors which may require mitigation not previously identified.
- N1.2 Chapter O then summarises the mitigation and monitoring measures identified within this ES and how these can be delivered and secured.
- N1.3 There are inter-relationships between the various assessments within the ES and this section identifies the key links between any impacts identified and how these may influence each other. Where these relationships give rise to other combined direct effects arising from the Proposed Development, it is necessary to identify how these impact on the sensitive receptors identified in this ES.
- N1.4 There may also be indirect effects arising from the Proposed Development when considered with other proposals or schemes in the surrounding area. These effects may also give rise to the need to consider additional mitigation measures; albeit it is necessary to consider the likelihood of those other schemes proceeding and the ability or necessity of the applicant to mitigate any such effects for other sites.
- N1.5 Accordingly, this Chapter considers two types of cumulative environmental effect in association with the proposed development:
- 1 Synergistic – the combined effect of different types of impacts attributable to the proposed development ('direct impacts') in respect of a particular receptor. An example of this could include the combined impact of noise, air quality and changes to views on a residential dwelling. This includes consideration of the impacts during the construction and operational phases; and
 - 2 Cumulative – these arise from the combined effect of the proposed development with committed development schemes that, individually, may be insignificant, but when combined with other impacts, may be significant or of greater effect.
- N1.6 During the process of agreeing the scope of the Environmental Impact Assessment ("EIA") with Arun District Council ('ADC') (see Chapter B of this ES), a number of developments were identified as having the potential to require consideration in relation to those other indirect or cumulative effects. Those which require consideration in this chapter are listed in Table N4.1.
- N1.7 Sensitive receptors have been identified in individual chapters of the ES and are summarised in Section N2.0. These receptors have varying degrees of sensitivity to environmental impact and change as a result of the proposals. Regard has been given to the sensitivity of the identified receptors to determine which are potentially susceptible to cumulative impacts, taking into account the extent of the effects arising. The professional judgement of those undertaking the EIA as well as topic specific criteria, legislation or guidelines have been used to identify the degree of sensitivity.
- N1.8 A consideration of the impacts arising from the construction and operation phases of the development has been carried out within this ES and is also addressed in the assessment of the interrelationship and cumulative effects arising from the scheme.

N1.9 This chapter should be read in conjunction with the following appendix provided at Volume 2 to this ES:-

- **Appendix N1 – Plan showing schemes assessed cumulatively**

N2.0 Identification of Key Sensitive Receptors

- N2.1 Chapters D to M of this ES have identified a series of receptors most likely to be affected by significant environmental effects as a result of the Proposed Development. The EIA process has then identified the likely degree of change or impact to each receptor.
- N2.2 Assuming that the proposed mitigation will be implemented, an analysis has been carried out of the residual effects arising from the assessment of each technical aspect scoped into the EIA. This section draws out and identifies those key sensitive receptors which are likely to be affected by an impact which will be greater than negligible. This means any receptor identified with an effect classified as being of minor, moderate or substantial/major significance is identified.
- N2.3 It is assumed that there is a low likelihood for cumulative or synergistic effects to arise for those receptors which are subject to no or negligible impacts when the Proposed Development is considered in isolation. These are therefore discounted at this stage.
- N2.4 Using the significance criteria described within Chapters B and D to M, it is also then possible to identify which of these effects are significant and which are non-significant effects. This approach accords with EIA legislation and best practice which focuses on the main or significant effects arising from the development. The Planning Practice Guide states (ID: 4-035-20170728, last updated 28 July 2017):
- “Whilst every Environmental Statement should provide a full factual description of the development, the emphasis should be on the “main” or “significant” environmental effects to which a development is likely to give rise.”*
- N2.5 The likely synergistic and cumulative effects on the key sensitive receptors have been assessed. These include all receptors likely to be affected by significant effects (typically major or moderate effects). It also considers all those receptors currently likely to be affected by non-significant (typically only minor effects) to robustly assess whether, cumulatively or synergistically, these may give rise to new significant effects previously not identified.

Summary of Residual Effects

- N2.6 Table N2.1 provides a summary of the main residual effects (following incorporation of the mitigation measures described in Chapter O) as identified in Chapters D to M of this ES that could be expected to arise during construction and operation of the Proposed Development:-

Table N2.1 Summary of Residual Effects

Technical Aspect	Summary of Residual Effects
During Construction	
Transport & Accessibility	Minor adverse (not significant) effects on the local highways network
Landscape and Views	Moderate to Substantial adverse (significant) effect on wider general landscape features (night time character of the area, the Westgate-Barnham Coastal Plain Landscape Character Area ('LCA')(LCA 17)); on several site landscape character features (Barnham Plant Nurseries, the open farmland and the local night time character of the site); and for users of public rights of way through the site Moderate adverse (significant) effect on New Barn and on views out of the site Minor to Moderate adverse (not significant) effects on the landscape setting of the Church of St George; the Lidsey Coastal Plain LCA 11; on several site landscape character features (topography, site vegetation, the Lidsey Rife Valley

Technical Aspect	Summary of Residual Effects
	Corridor and the former Chichester to Arun Canal); and for individuals at their workplace or visiting public spaces Minor adverse (not significant) effects on the landscape setting to the South Downs National Park; and on several wider general landscape features (the South Coast Plain, the Chichester to Yapton Coastal Plain LCA 9, the Fontwell Upper Coastal Plain LCA SC8 and the Westergate Eastern Fringe LCA 14) Other impacts are neutral or negligible.
Ecology	No impacts on statutory or non-statutory designated sites Moderate (significant) beneficial impacts at a European level on bats; at a national level on water vole and reptiles; and at a local level on badgers and birds Moderate (significant) beneficial impacts at a local level on various habitats including semi-improved grassland, hedgerows, trees, woodland and stream habitats Minor (significant) beneficial impacts at a local level on bare ground, buildings and arable land habitats
Air Quality	Negligible/no effects (not significant) on all receptors
Noise and Vibration	Minor (not significant) adverse temporary on all receptors
Historic Built Environment	No effects on all receptors
Archaeology	Minor (not significant) adverse impact on archaeological remains
Water Environment and Drainage	Negligible/minor adverse (not significant) impacts on all receptors including water courses, ground water, flood risk and the Lidsey Rife
Socio-Economics	Moderate (significant) beneficial (temporary) on employment and economic output in Phase 1 moving to minor (not significant) beneficial (temporary) in Phases 2 and 3
Climate Change and Resilience	Minor (not significant) adverse impact on the global climate
During Operation	
Transport & Accessibility	Minor adverse (not significant) effects on the local highways network and existing traffic and on junction capacity and delay Minor beneficial (not significant) effects on pedestrian severance, fear and intimidation
Landscape and Views	Moderate to Substantial (significant) adverse impacts on New Barn (built feature); the Westergate-Barnham Coastal Plain LCA 17; and various site specific landscape character features including those associated with Barnham Plant Nurseries, the site's open farmland character, its historic and cultural landscape character and its night-time character. The impacts are all permanent with no change after 15 years. Moderate adverse (significant) impact on views out of the site and the site's enclosed farmland character. Permanent change with no change after 15 years. Minor to Moderate adverse (not significant) impacts on the Lidsey Coastal Plain LCA 11 and the site's landscape character associated with the Lidsey Rife Valley Minor adverse (not significant) impacts on the South Coast Plain and other Coastal Plain's landscape character areas (LSA SC9, LCA SC8, LCA14), on the former Chichester to Arundel Canal and on receptors using roads, PROWs and receptors visiting scenic viewpoints and public spaces. The impacts are all permanent with limited change after 15 years.
Ecology	No impacts on statutory or non-statutory designated sites

Technical Aspect	Summary of Residual Effects
	Moderate (significant) beneficial impacts at a European level on bats; at national level on water vole and reptiles; and at local level on badgers and birds Moderate (significant) beneficial impact on all habitats
Air Quality	Negligible/no effects (not significant) on all receptors
Noise and Vibration	Minor (not significant) adverse on all receptors
Historic Built Environment	No effects on all receptors
Archaeology	No effects on all receptors
Water Environment and Drainage	Moderate (significant) beneficial impact on flood risk and the Lidsey Rife due to SuDS implementation Minor (not significant) adverse impact on capacity and operation of the Ford and Lidsey Wastewater Treatment Works ('WwTW') Negligible impact on all other receptors
Socio-Economics	Moderate (significant) beneficial on the local housing market, local education provision Minor (not significant) beneficial arising from additional resident expenditure, local employment and economic output, open space and community facilities Negligible impacts on all other receptors
Climate Change and Resilience	Minor (not significant) adverse impact on the global climate

Summary of Sensitive Receptors

N2.7

Table N2.1 has identified that the following sensitive receptors are likely to be impacted by effects (adverse or beneficial) that can be considered to be significant during either construction or operation:-

- Various Coastal Plain landscape character areas;
- The site's existing farmland landscape character, habitats and low lying areas (subject to flood risk);
- Users of public rights of way through the site;
- New Barn;
- Bats;
- Water Vole;
- Reptiles;
- Badgers;
- Birds;
- Those reliant on local employment and economic output (e.g. local businesses and workers);
- The Lidsey Rife;
- Those reliant on the local housing market (e.g. local residents); and
- Those reliant on local education provision (e.g. local students).

1 Where a receptor is likely to be subject to both significant and non-significant effects, a precautionary approach has been adopted and it is identified as receiving significant effects. However other non-significant effects may also be relevant. Further consideration is given in Section N3.0 of this Chapter.

- N2.8 Table N2.1 has also identified that the following sensitive receptors are likely to be impacted by effects (adverse or beneficial) that can be considered to be non-significant (minor considered, negligible is not) but not during either construction or operation:-
- Local highways network (and users of the local highways network);
 - Pedestrians using local roads;
 - Church of St George;
 - former Chichester to Arun Canal;
 - individuals at their workplace or visiting public spaces;
 - Local Residents of immediate surrounding area (Church Lane, Critchmere Drive, Upton Brooks, Elm's Grove, Gospond Road and Westgate);
 - South Downs National Park (landscape setting);
 - Known or (currently) unknown site archaeological remains;
 - Ford and Lidsey WwTWs;
 - Those using local open space and community facilities (i.e. local visitors/tourists and local residents); and
 - Global climate

N3.0 Inter-relationship of Direct Effects

- N3.1 This section considers the inter-relationship between the direct effects or synergistic effects arising from the Proposed Development. It takes account of the residual effects affecting the key sensitive receptors identified in Section N2.0.
- N3.2 The analysis has considered both positive and negative impacts and makes reference to the degree of effect as identified within the technical assessments. The objective is to identify where the accumulation of effects on particular receptors, and the relationship between those effects, may give rise to a need for additional mitigation not identified previously.
- N3.3 To assist in this analysis, the table below summarises the effects anticipated against each receptor and identifies where particular receptors may be subject to an accumulation of environmental impacts.

Table N3.1 Direct Residual Effects for Identified Sensitive Receptors

Receptor	During Construction	During Operation
Various Coastal Plain landscape character areas	LV/(LV)	LV/(LV)
The site's existing farmland landscape character, habitats and low lying areas (subject to flood risk) and known or (currently) unknown site archaeological remains	LV; E; (AR)	LV; E; WE
Users of public rights of way through the site	LV	(LV)
New Barn	(LV)	LV
Bats	E	E
Water Vole	E	E
Reptiles	E	E
Badgers	E	E
Birds	E	E
Local businesses	SE	(SE)
Local residents	(LV); (NV)*	(LV); (NV); SE
Local workers	(LV); (NV)*; SE	(SE)
The Lidsey Rife	(LV)	(LV); WE
Local students	X	(SE)
Users of the local highways network	(T)	(T)/(T); (LV)
Church of St George	(LV)	(LV)/(LV)
former Chichester to Arun Canal	(LV)	(LV)
Visitors and tourists	(LV)	(LV); (SE)
South Downs National Park (landscape setting)	(LV)	X
Ford and Lidsey WwTWs	X	(WE)
Global climate	(CC)	(CC)

Key: T - Transport & Accessibility; LV - Landscape and Views; E - Ecology; AQ - Air Quality; NV - Noise and Vibration; HB - Historic Built Environment; AR - Archaeology; WE - Water Environment and Drainage; SE - Socio-Economics; CC - Climate Change and Resilience

RED - adverse effects; GREEN - beneficial effects; X - no effect anticipated; (BRACKETS) - non-significant effects; * - transitory/short-term effect or intermittent effect

- N3.4 Table N3.1 highlights residual (after mitigation is taken into account) effects on identified receptors. Where a series of technical aspects have the potential to cause effect (adversely or beneficial; significant or non-significant), then a review of whether the interaction of these

different effects could give rise to a new significant or cumulative effect which could require further mitigation has taken place. This has been conducted with reference to the technical aspect chapters of the ES and the understanding of the sensitivity of the relevant receptor which those chapters have identified. Consideration has also been given to mitigation measures already embedded into the development or capable of being delivered through planning conditions or planning obligations.

N3.5 The conclusions of this review have highlighted the following:-

- 1 No synergistic effects are anticipated in respect of Air Quality, Historic Built Environment and Climate Change and Resilience. This is either because no significant/non-significant residual effects are anticipated (and therefore there is no potential for integration of effects based on the assumptions made in this Chapter) or because the potential for in-combination effects has been examined, assessed and no additional significant impacts are considered likely to arise (because the impacts associated with the relevant technical aspect are the only effects associated with a particular receptor);
- 2 There are a number of existing features within the site boundary that are affected by significant and non-significant effects during both the construction and operational periods. The only significant adverse impact is that associated with the loss of the existing farmland landscape character and its replacement with the Proposed Development. Assuming a worst case scenario, the only other adverse (not significant) impact is associated with the removal of any found archaeological remains. All other impacts are significant and beneficial associated with on-site habitats and the site's water environment. There is potential for further reduction in the significant adverse impact on local landscape character as the detailed design, through reserved matters, is developed. It is considered that the synergistic effects of the Proposed Development are likely to be largely beneficial on balance and further mitigation is not required;
- 3 During construction, several receptors and users within the immediate periphery to the site (workers, residents) are subject to a series of largely non-significant impacts (views and noise/vibration) and significant beneficial socio-economic impacts. The majority of the noise and vibration impacts will be short term during the operation of machinery. Whilst receptors are subject to impacts from more than one technical aspect, it is considered that the implementation of mitigation measures through the Construction Environmental Management Plan ('CEMP') will be sufficient to address any potential synergistic effects and no additional mitigation is required;
- 4 During operation, existing and future local residents, users of the local highways network (vehicular and pedestrians) and visitors/tourists to the area are all subject to non-significant adverse impacts on views and are also subject to beneficial (significant and non-significant) socio-economic impacts and non-significant beneficial and adverse impacts associated with delay (transport impacts). It is considered that the mitigation measures already identified within the ES are sufficient to cover the impacts identified.

N3.6 Other receptors would experience either beneficial or adverse impacts but associated with only one technical aspect. Mitigation identified in Chapters D to M of this ES is sufficient to address these impacts.

N3.7 The analysis has demonstrated that mitigation already identified through the EIA process is sufficient to ensure that both individual and synergistic effects can be addressed. Mitigation measures relating to the individual technical aspects are further reviewed in Chapter O of this ES which demonstrates that all are capable of being secured via planning conditions and Section 106 obligations. In addition, Chapters D to M (and Chapter O) set out a series of possible

enhancements to the development that may assist in further increasing the beneficial effects and reducing any adverse impacts during construction and operation.

N4.0 Other Cumulative Effects

N4.1 It has been agreed with ADC that the ES will assess likely significant cumulative or inter-project effects arising from the impacts of the Proposed Development interacting with the impacts arising from other developments. The objective is to identify whether impacts from several developments, which individually might be insignificant could, when considered together, cause a significant indirect and cumulative impact requiring additional mitigation. Where such effects are identified, this chapter identifies the extent of mitigation required.

Scope of Cumulative Assessment

Schemes to be Assessed

N4.2 Best practice dictates that cumulative assessments of this nature should have regard to those schemes which are 'reasonably foreseeable' (i.e. usually those under construction or with planning permission, as specified in guidance such as IEMA's 'Guidelines for Environmental Impact Assessment' (2004), the EC's 'Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions' (1999); and the Planning Inspectorate's Advice Note 17²). This is further clarified in the Planning Practice Guidance (Environmental Impact Assessment) which states that:

"The local planning authorities should always have regard to the possible cumulative effects arising from any existing or approved development" (Lichfields emphasis) (ID: 4-024-20170728) (last updated 28 July 2017)

N4.3 The assessment is also only capable of being carried out based on the information available at this time.

N4.4 Various schemes have been identified for potential consideration in this EIA. These have been identified via:-

- 1 Review of planning records held by ADC to identify projects which have the potential to give rise to cumulative effects as a result of their geographical proximity to the site, scale of development or other relationship which may be relevant (these records were reviewed regularly through the EIA process to ensure that all relevant developments have been captured and assessed within the ES); and
- 2 The Scoping Opinion from ADC.

N4.5 Cumulative schemes have been assessment in two parts: potential for cumulative impact arising from the BEW Wider Strategic Allocation and potential for cumulative impact arising from identified sites in proximity to the Application Site but sitting outside the Wider Strategic Allocation ('Other Developments').

N4.6 A complete list of potential schemes considered for inclusion in the 'Other Development' cumulative impact assessment is provided at Table N4.1 and a plan showing their proximity to the Proposed Development is provided at Appendix N1.

Table N4.1 Potential Cumulative Schemes for Assessment

Site address	Parish	Reference	Application description	Status
1 Land at former	Barnham & Eastergate	EG/71/14/OUT	Outline application for the erection of 60 residential dwellings with new vehicular	Approved Feb 2015

² Guidance relates to the delivery of Nationally Significant Infrastructure Projects but provides helpful guidance on cumulative impact assessment relevant to this EIA

Site address	Parish	Reference	Application description	Status	
Eastergate Fruit Farm Eastergate PO20 3RP			access, open space & other ancillary works		
2	Land south and west of Barnside and east of pond, Hook Lane	Aldingbourne	AL/8/16/OUT	Outline application with all matters reserved for a residential development of up to 14 No. dwellings & associated works including access, landscaping & open space. This application is a Departure from the Development Plan.	Refused (Appealed and allowed May 2018)
			AL/33/19/RES	Approval of reserved matters following the consent of AL/8/16/OUT (APP/C3810/W/16/3155330) for the erection of 14 No. dwellings with associated access, parking, landscape & open space.	Approved July 2019
3	Land at Nyton Rd & Northfields Lane, Westergate & land off Fontwell Lane, Eastergate	Walberton	AL/61/13/OUT	Outline application with some matters reserved for the demolition of existing glasshouses, residential bungalow, stables and various outbuildings and residential development of up to 268 dwellings including 30% affordable housing (incorporating 60 Senior Living units), with associated access, public open space and landscaping. This is a Departure from the Development Plan.	Allowed on appeal 2015
			AL/102/17/RES	Application for approval of Reserved Matters following outline application AL/61/13/ for the demolition of existing glasshouses, bungalow, stables & outbuildings & residential development of 268 dwellings incl 30% affordable housing (incorporating 60 senior living units) with associated access, public open space & landscaping.	Approved 2018
4	Wings Nursery Lidsey Road Woodgate PO20 3SU	Aldingbourne	AL/32/19/OUT	Outline application with some matters reserved for the erection of 55 No. dwellings, access arrangements, sustainable drainage measures, public open space, landscaping & all other associated works (resubmission following AL/115/17/OUT). This application is a Departure from the Development Plan.	Approved October 2020
5	Land north of Lee’s Yard Lidsey Road Woodgate PO20 3SU	Aldingbourne	AL/21/20/OUT	Outline application with some matters reserved for the erection of 38 No. dwellings consisting of 5 No. 4-bed house, 14 No. 3-bed houses & 19 No. 2-bed houses, with communal work hub & associated car parking & landscaping (resubmission following AL/57/18/OUT). This application is a Departure from the Development Plan.	Approved July 2020

Site address	Parish	Reference	Application description	Status
6 Land west of Fontwell Avenue Fontwell Avenue Eastergate	Barnham and Eastergate	BN/50/20/PL	Demolition of existing structures on-site & erection of 42 No. dwellings with access, parking, landscaping & associated works. This application is a Departure from the Development Plan.	Approved December 2020
7 Land south of Barnham Station Barnham	Barnham and Eastergate	BN/142/20/OUT	Outline planning application with all matters reserved, other than principal means of access, for up to 200 No. dwellings, with access taken from Marshall Close, associated infrastructure & landscaping & demolition of existing buildings. This application is a Departure from the Development Plan, may affect the setting of listed buildings, may affect the Church Lane, Barnham Conservation Area & affects a Public Right of Way.	Validated November 2020. Refused Subject to Appeal. No decision yet available.

Wider Strategic Allocation

- N4.7 In addition to the above, it has been agreed through the Scoping Opinion issued by ADC (see Chapter B to this ES), that the cumulative assessment should include a review of potential development that would be brought forward within the Wider Barnham Eastergate Westgate ('BEW') Strategic Allocation (Policy S SP2C) (See Chapter A of this ES for further detailed consideration of the BEW Strategic Allocation).
- N4.8 The assessment is based on the BEW Framework Masterplan which proposes 2,300 homes in the plan period and 3,000 homes in total as part of the Wider Strategic Allocation; and up to 4,300 homes as part of the Framework Masterplan. The Framework Masterplan sets out the key principles of development across the Wider Strategic Allocation (i.e. roads and transport networks, landscape networks, location of community facilities and schools) and has been endorsed by ADC.
- N4.9 It is necessary to use the details of the proposals for the allocation contained in the Framework Masterplan as detailed information on the majority of the individual phases of development is not yet available. This is because applications have not yet been made (or have been refused by ADC and therefore details remain uncertain). Table N4.2 sets out the known information on other applications in the Strategic Allocation.

Table N4.2 Development parcels within the BEW Wider Strategic Allocation

Landowner / site	Development	Timescales
West Sussex County Council	A29 realignment to the north of Barnham Road (Phase 1)	Approved WSCC/052/20 (30 June 2021)
Barratts (land north of Barnham Road)	Circa 600 units (source: ADC scoping opinion ref: BN/155/20/EIS, issued February 2021)	Detailed planning application submission expected Winter 2021/22. Not yet submitted.
CALA land parcel	Hybrid Application 1) Full Planning Application for 101 No. dwellings with new access & associated works on 3.34 ha land; 2) Outline Planning Application with all matters reserved for 249 No.	Application refused in March 2020 (ref. AL/15/17/PL). Revised application for the site not yet submitted.

Landowner / site		Development	Timescales
		dwelling with access & associated works on 15.06 ha of land	
Pye Homes land parcel		Demolition of the Woodgate Centre buildings and the construction of 180 residential dwellings with associated works (ADC application ref: AL/107/21/PL)	Application submitted 16 August 2021. Target determination in March 2022.
Other landowners immediately south of Barnham Road	Boweries	Full application (ref: BN/135/20/PL) for 30 no. dwellings, new access, public open space, landscaping and associated works (submission following EG/22/19/OUT, refused and allowed on Appeal).	Resolution to grant approval issued 30 July 2021; awaiting conclusion of s106 Agreement
	Landscre - Warwick Nursery	Full application for 44 No. dwellings & associated infrastructure (ref: BN/153/20/PL)	Resolution to grant approval issued 10 December 2021; awaiting conclusion of s106 Agreement
	Bexstone House	17 units (source: 2019 HELAA).	No application yet submitted.

Consideration of Potential for Cumulative Effects

Assumptions and Approach

- N4.10 No cumulative effects are likely to occur where the zone of impact or influence³ of a particular aspect considered in this ES has no potential to overlap with those arising from the schemes identified for assessment in this cumulative assessment. In those circumstances, there is no potential for cumulative effects and no further assessment required. This is stated below where relevant.
- N4.11 There is a greater likelihood for cumulative effects when the Proposed Development is considered alongside the potential future development of the plots within the Wider Strategic Allocation. This is because the zone of impact or influence ('ZOI') of a particular aspect considered in this ES is more likely to overlap with other parts of the Wider Strategic Allocation due to its adjacency to the Development Site. In addition, many of the sensitive receptors identified in this chapter also have a close geographical relationship with other parts of the Wider Strategic Allocation.
- N4.12 However, and importantly, the identification of any cumulative effects from the Wider Strategic Allocation must be balanced against the fact that the development of the majority of the wider plots is, at the time of this ES, not 'reasonably foreseeable' in EIA terms (as described in paragraph N4.2 above).
- N4.13 There are some circumstances where the assessments set out in Chapters D to M of this ES have already taken account of the likely effects of the schemes identified in Table N4.1 and the Wider Strategic Allocation and therefore no further cumulative assessment is required. However, this is stated below for ease of reference.
- N4.14 The cumulative assessment is quantitative where possible, 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 information that is available

³ Zone of Impact/Influence – the area within which the significant effects from BEW are likely to be experienced

on a particular scheme or on an assumption that other schemes will comply with general policy requirements for ADC.

N4.15 The remainder of this section reviews each technical aspect in turn.

Transport & Accessibility

Wider Strategic Allocation

N4.16 The transport model described and assessed in Appendix D1 of the ES (Transport Assessment) and in Chapter D includes a full consideration of the Wider Strategic Allocation. As a result, the assessment described in Chapter D already has regard to the potential for cumulative effects and no further consideration is required in this Chapter.

Other Developments

N4.17 Similarly, the transport model described and assessed in Chapter D and Appendix D1 includes those other developments set out in Table D4.1 and no further consideration is required in this Chapter.

Landscape and Views

N4.18 The assessment of potential for cumulative effects associated with landscape and views has been considered for the Wider Strategic Allocation and Other Developments together and is set out below. Effects described below are cumulative effects.

Effects on Landscape Receptors

N4.19 Consistent with the application site, there will be no physical change to existing contextual landscape receptors within the study area relating to each of the development sites within the Wider Strategic Allocation, namely topography and topographic profile; land cover; public / communal open space, including access land; settlement pattern and built form; movement corridors and public rights of way; landscape and built features; the detracting features; and the historic and cultural landscape beyond each of the proposed developments. The significance of effect on these receptors is therefore judged to be **neutral**. This effect is not considered significant in EIA terms.

N4.20 In terms of the contextual skyline and visual setting to the Development Site, there will be no physical change to the ridgeline of the South Downs to the north, nor the treed setting to the south. These elements will continue to form the visual setting to the sites. The significance of effect on these receptors is therefore judged to be **neutral**. This effect is not considered significant in EIA terms.

N4.21 The operational stage will result in the retention of a green landscape setting (in the form of open space and new planting) to the south of the Parish Church of St George in Eastergate. Beyond this green zone, dwellings of 3 storeys are proposed. In landscape and visual terms the Development Site would maintain an open and green landscape setting to the Conservation Area. This receptor is considered to be of medium landscape value; the susceptibility to the proposed change overall is low; and therefore the sensitivity of this receptor is medium-low. The magnitude of change is predicted to be low to neutral. Effects on the setting overall is therefore limited and range from **neutral to minor adverse**, which is not considered significant in EIA terms.

N4.22 The South Downs lies approximately 2km to the north of the northernmost development site boundary (relative to the Strategic Allocation SD5 / the application site). All of the cumulative

sites lie on the greenfield settlement edge. Each site forms a small part of the setting to the South Downs National Park; a setting which includes dispersed inland settlement and a farmland mosaic, with the settled coastline and English Channel beyond. Collectively, the larger of the proposed completed developments along with the Strategic Allocation will be readily perceived and will create a new settlement context to the South Downs set within a wider farmland mosaic and in the context of the settled coastline and English Channel beyond. The separation of settlements between the inland and coastal settlements will however remain. Due to the proximity of the Strategic Allocation SD5 to the South Downs, together with the type of proposals (including a new road corridor), the extent that it covers in combination with the cumulative schemes and the anticipated change to the night time character, it is predicted that the overall level of tranquillity will be reduced in the area of the South Downs closest to these proposed developments. The collective value that the sites play in the landscape setting to the South Downs is judged to be low; the susceptibility to the proposed change is low, considering the small and distant contribution the sites play in the setting; and therefore the sensitivity of this receptor is low. The magnitude of change at this stage is also predicted to be low. Effects are therefore predicted to be indirect, long term and permanent of **minor adverse** significance overall to the setting of the South Downs. This effect is not considered significant in EIA terms.

- N4.23 As with the development of any green field site (some of which are allocated for development whereby the principle of this change is already accepted) the most significant effects will occur at the site level as a result of the substitution of existing green fields with built form and associated green infrastructure. Collectively, this landscape resource is considered to be of medium landscape value; the susceptibility to the proposed change overall is high; and therefore the sensitivity of this receptor is high-medium. The magnitude of change is predicted to be high for each and therefore collectively. The overall effect on the land cover and landscape character of each of these sites considered together is predicted to be direct, long term, permanent and of **substantial adverse** significance relative to the areas of new built form, but also of **moderate beneficial** significance as each will deliver new areas of publicly accessible green space. These effects are considered significant in EIA terms.

Effects on Landscape Character

- N4.24 The cumulative sites (including those that are allocated) predominantly include a series of green field parcels abutting the existing settlement edge. On completion, the proposed developments collectively would introduce a range of new built form which is essentially characteristic of the South Coastal Plain landscape, that of domestic scale dwellings, a school, mixed use buildings and open space. The NCA recognises that the former South East Plan identified significant areas of growth throughout and surrounding this NCA. The landscape value of this character area is judged to be medium; the susceptibility to the proposed cumulative change is judged to be low; and therefore the sensitivity of this receptor is medium – low. The magnitude of change at this stage is also predicted to be negligible considering that collectively the proposed developments are characteristic of the NCA. The cumulative effects are therefore predicted to be of **negligible** significance overall to the South Coast Plain NCA, as the key characteristics are essentially retained. This effect is not considered significant in EIA terms.
- N4.25 At the regional level, the overall strategy is to ‘protect, conserve and enhance’ the key characteristics of this character area (which includes the open character of the landscape, the hedgerow framework, the rife and the setting to Listed Buildings). At completion, the cumulative schemes will see the replacement of the current open and greenfield nature of the sites with built form and open space, set within a retained vegetation and rife framework. The landscape value of this character area is judged to be medium; the susceptibility to the proposed change is judged to be low; and therefore the sensitivity of this receptor is medium – low. The magnitude of change at this stage is also predicted to be low, again, considering the extent of

cumulative sites on the geographic extent of this character area. Cumulative effects are therefore predicted to be direct, long term, permanent and of **minor adverse** effect overall to the South Coast Plain character area, arising as a result of the direct replacement of existing character. This effect is not considered significant in EIA terms.

- N4.26 The Strategic Allocation and six of the other cumulative sites lie within Landscape Character Area (LCA) South Coast 9 (SC9) the Chichester to Yapton Coastal Plain. The Landscape and Visual Impact assessment recognises that this character area is under development pressure, especially between settlement gaps. The cumulative schemes will essentially result in the direct replacement of the existing character and therefore a geographic reduction to the character area. The landscape value of this character area is judged to be medium; the susceptibility to change is judged to be medium; and therefore the sensitivity of this receptor is medium. The magnitude of change at this stage is also predicted to be medium. Effects are therefore predicted to be direct, long term, permanent and of **moderate adverse** significance overall to the western section of the Chichester to Yapton Coastal Plain. This effect is considered significant in EIA terms.
- N4.27 The other three cumulative schemes lie within LCA SC8 Fontwell Upper Coastal Plain. These three schemes cumulatively will essentially result in the direct replacement of the existing character and therefore a geographic reduction to the character area. The landscape value of this character area is judged to be medium; the susceptibility to change is judged to be low; and therefore the sensitivity of this receptor is medium-low. The magnitude of change at this stage is also predicted to be low. Effects are therefore predicted to be direct, long term, permanent and of **minor adverse** significance overall on a small part of the SC8 Fontwell Upper Coastal Plain LCA. This effect is not considered to be significant in EIA terms.
- N4.28 There will be a wholesale change to the character areas of the Strategic Allocation SD5 (refer to Figure E2.19 of Appendix E2, where the Barnham Woodland Mosaic, Barnham Plant Nurseries, BEW Open Farmland, BEW Enclosed Farmland, Westergate Meadows and Farmland and Woodgate Equestrian would all be directly replaced with built form and open space and a new road corridor. The landscape value of these character areas is judged to be medium; the susceptibility to the proposed change is high; and therefore sensitivity is medium-high. The magnitude of change is judged as being high. Effects will therefore be direct, long term, permanent and of **moderate – substantial adverse** significance on these character areas. This effect is significant in EIA terms.
- N4.29 The Lidsey Rife Valley Corridor would be predominantly retained, albeit with new road crossings. These road crossings are a characteristic feature of this corridor, which is crossed by the railway line and the Arundel to Chichester Canal, both on embankment through this area. The landscape value of this character area is medium; the susceptibility to this proposed change is medium; and sensitivity is medium. The magnitude of change is judged as being low. Effects overall on this character area are predicted to be direct, long term, permanent and of **moderate - minor adverse** significance. It is material however that this effect occurs on a small section of the character area and that the proposal replicates a characteristic element that crosses this character area. This effect is significant in EIA terms.
- N4.30 The Strategic Allocation SD5, together with two of the cumulative schemes, would change the southern setting to LCA SC8, resulting in direct, long term, permanent effects of **minor adverse** significance overall on a small part of the southern setting of this character area. This effect is not considered to be significant in EIA terms.
- N4.31 In terms of night-time character, it is predicted that there will be an increase in lighting experienced on the settlement edges in areas that are currently predominantly dark. The value of the night-time character is judged to be medium; the susceptibility to the proposed change is high; and therefore the sensitivity of this receptor is high – medium. The magnitude of change is

predicted to be high. The overall cumulative effect on the night-time character is predicted to be direct, long term, permanent and of **substantial adverse** significance in comparison to the current night-time environment. This effect is considered significant in EIA terms.

Effects on Visual Receptors

- N4.32 The visual assessment has focused predominantly on the Development Site.
- N4.33 There will be no additional effects on the key representative viewpoints 1, 2, 4-7, 12-15, 20 and 21 (from road corridors, public rights of way and residential areas) to those set out in Chapter E: LVIA of the ES as a result of the cumulative scheme proposals beyond the application site, as these viewpoints are focused predominantly on the application site.
- N4.34 It is predicted that there will continue to be no change to the character and amenity of the view for key representative viewpoints 4-6, 9 and 12-16 with the cumulative schemes in place. In particular, long distance views from viewpoints 20-21 are limited due to the intervening layers. This is the same as the Development Site.

Residential Receptors

- N4.35 It is predicted that each of the proposed cumulative schemes will be visible for the residential receptors immediately adjacent to each of the cumulative sites and on the settlement edges and within Conservation Areas, where the character and amenity of the view will change from that across fields to that including new built form (for example key representative viewpoint 3). The value of this group of receptors is judged to be low; the susceptibility to the proposed change is high; and the sensitivity therefore is medium. The magnitude of change is high and therefore the effect is predicted to be direct, long term, permanent and of **substantial - moderate adverse** significance on this group of receptors as a whole. This effect is considered significant in EIA terms.

Transient Receptors Using Roads and Associated Pavements

- N4.36 A number of the cumulative schemes lie adjacent to existing road corridors, replacing the green gaps between groups of dwellings and the gaps between settlements with new domestic scale built form. The value of this group of receptors is judged to be low, considering the views to the South Downs. The susceptibility to the proposed change is medium and the sensitivity therefore is medium-low. The magnitude of change is high, considering the reduction in breaks between the existing built form and therefore the effect is predicted to be direct, long term, permanent and of **moderate adverse** significance on this group of receptors travelling on the section of road that passes the cumulative sites. This effect is considered significant in EIA terms.

Transient Receptors Using the Railway Line

- N4.37 The development associated with the Strategic Allocation, together with the cumulative scheme south of Barnham Station, will introduce new built form beyond a green buffer zone, wholly changing the character and amenity of the view experienced at this point of the journey from that across fields to that of a new settlement. Views out to the wider countryside and to the South Downs are predicted to be obscured. The value of this group of receptors is judged to be low; the susceptibility to the proposed change is low; and therefore the sensitivity is low. The magnitude of change to the character and amenity of these views is judged to be high for a short section of the journey where the railway line passes the Strategic Allocation and land south of Barnham Station cumulative site. Effects are therefore predicted to be direct, long term, permanent and of **moderate adverse** significance. This effect is significant in EIA terms.
- N4.38 Once past the cumulative sites, these effects diminish to neutral.

Transient Receptors Using the Public Rights of Way

- N4.39 Several PRoW pass through the Strategic Allocation and along the edge of the land south of Barnham Station.
- N4.40 For those receptors using PRoW 296, 298, 300, 317, 321, 323 and the alignment of the former Arundel to Chichester Canal on PRoW 200 and 200_1 passing immediately through or adjacent to the assessed cumulative sites, these receptors will experience views of the above combined projects. Refer to representative viewpoints 1-3, 8, 10 and 11. The value of the group of receptors judged to be medium; the susceptibility to the proposed change is high; and the sensitivity is therefore medium-high. The magnitude of change is high, considering the replacement of fields to built form. The effect on this group of transient receptors will be direct, long term, permanent and of substantial - moderate adverse significance. This effect is considered significant in EIA terms.
- N4.41 For those receptors walking footpath 291 where it crosses the railway line, it is predicted that there will be filtered views through the intervening vegetation of the proposed dwellings at land south and west of Barnside and east of pond, Hook Lane site to the west of Woodgate, especially in the winter months. The value of this group of receptors is medium; the susceptibility to the proposed change is low; and the sensitivity is therefore medium-low. The magnitude of change is low and therefore the effect on the transient receptors passing through the landscape will be indirect, medium term, permanent and of **minor adverse** significance on those eastward and views. These effects diminish moving away from the application site. This effect is not considered significant in EIA terms.

Receptors at Visitor Attractions and Scenic Viewpoints

- N4.42 It is predicted that the range of cumulative sites will not be readily perceived in the long-distance panoramic view from the footpaths on the ridgeline in the South Downs due to either distance or intervening vegetation (refer to key representative viewpoints 16, 20 and 21).
- N4.43 The collection of completed developments, in particular those immediately adjacent to the Strategic Allocation are however likely to be perceived as new elements to the view from representative viewpoints 17-19, where the existing open farmland would be replaced with a range of new built form and green infrastructure. The value of this group of receptors is high; the susceptibility to the proposed change is low; and the sensitivity is therefore medium. The magnitude of change is low. The effect on the transient receptors passing through the landscape within the South Downs National Park therefore will be of **moderate - minor adverse** significance. This effect is not considered significant in EIA terms.

Receptors Visiting Public Spaces

- N4.44 Much like the views from PRoW 296, the character and amenity of the view from the green space no. 12 within the Lidsey Rife corridor to the west of the Site and from the churchyard of the Parish Church of St Georges is predominantly agrarian which would be replaced by the proposed open space and associated elements (such as the cricket pitch and pavilion for those visiting the church yard, a typical village green space character) alongside the proposed new built form within the wider Strategic Allocation. The value of this group of receptors using this space is judged to be medium; the susceptibility to the proposed change is low; and therefore the sensitivity is medium-low. The magnitude of change is predicted to be low. The effects would be direct, long term, permanent change and of **minor adverse** significance overall. This is not significant in EIA terms.
- N4.45 These effects are not considered significant in EIA terms.

Receptors at Their Workplace

- N4.46 There will be a change in the character and amenity of the view for those farm workers and those working at the nurseries adjacent to the cumulative schemes west of Woodgate where the residential settlement edge will come forward in the views. The value of the view experienced by this group of receptors above is low; the susceptibility to the proposed change is medium; and the sensitivity is therefore low-medium. The magnitude of change is medium and therefore the effect on the group of receptors working is predicted to be indirect, medium term, permanent and of **moderate - minor adverse** significance. The moderate effect is considered significant in EIA terms.
- N4.47 For those working at Lidsey Caravan Park and adjacent commercial premises, there will be no change to the character and amenity of the view experienced within the Park itself. The new A29 corridor would be perceived as part of the contextual environment which already includes the existing A29. The value of the view experienced by this group of receptors above is low; the susceptibility to the proposed change is low; and the sensitivity is therefore low. The magnitude of change is low and therefore the effect on the group of working receptors is predicted to be indirect, long term, permanent and of **minor adverse** significance. The effects are not significant in EIA terms.
- N4.48 In terms of those receptors working at and visiting the Sir Philip Howard School to the east of the Site, the character and amenity of the view will change to of predominantly 2.5 storey / 12m high dwellings set beyond a green buffer space. The value of the view experienced by this group of receptors above is low; the susceptibility to the proposed change is low; and the sensitivity is therefore low. The magnitude of change is medium and therefore the effect on the group of receptors working and visiting the school is predicted to be indirect, long term, permanent and of **minor to moderate adverse** significance. The moderate effects are significant in EIA terms.

Ecology

Wider Strategic Allocation

- N4.49 As detailed in Chapter F, the application site will deliver a large area of open space, the Rife Valley Park. This Park will extend throughout the site from the northern to the southern boundaries and will incorporate a wide range of natural habitats. A key component of the parks design has been to provide habitats comprising of native plant species, maintaining connectivity, and thus providing benefits to the faunal groups recorded on site and significant biodiversity gains. The Park also provides vast areas of open space for people to utilise. Overall, it is considered that the proposals provide significant ecological benefits even when considering the strategic allocation of the development as a whole.
- N4.50 Given the design of the site, the vast areas of open space, the retainment of those habitats of greater value (loss of arable land), the biodiversity gains at the site far exceed those currently present. The site on its own accord fully accords with the relevant legislation, does not impact any designated sites and in response to the mitigative measures put in place (both preventative and beneficial) is significant improvement over the existing situation. As set out within Chapter F, the proposals for the site will not result in any adverse residual effects, and given this, it is not considered that there is potential for any 'in combination effects' resulting from the site and those developments in the surrounding vicinity.
- N4.51 The ZOI in relation to the Proposed Development is largely confined to the application site itself. Potential impacts on sites and habitats (or plant species) outside of the site would be limited to noise and dust impacts on habitats at and just beyond the site boundary and contamination of

watercourses, namely the Lindsay Rife Stream which flows south. Given the distance of the other development projects, it is not considered possible for there to be combined impacts as a result of these effects and in any event, preventative measures have been put in place to ensure that these will not occur.

- N4.52 Overall, it is considered that the development proposals for the application site will ensure that no adverse impacts occur to any adjacent designated sites or habitats and it is considered that there will not be any cumulative effects.

Other Developments

- N4.53 As noted above, the ZOI for the Proposed Development is largely confined to the application site. Given the distance of the other development projects, it is not considered possible for there to be combined effects and, in any event, preventative measures have been put in place to ensure that these are not possible. Given that the Proposed Development will give rise to a net positive impact in Nature Conservation terms and that no other developments are directly connected to the application site, it is considered that there will not be any cumulative effects.

Air Quality

Wider Strategic Allocation

- N4.54 The potential for cumulative effects largely arises from the creation of dust during the construction period.
- N4.55 Where there are construction works on-going within 500m of each other there is potential for cumulative impacts on dust soiling and PM₁₀ concentrations. To mitigate any potential impacts the mitigation section of the Air Quality chapter (G7.0) has included the following recommendation *“Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.”*
- N4.56 These discussions will minimise the potential for likely significant cumulative effects to negligible.
- N4.57 The air quality assessment has incorporated traffic generation from a number of committed schemes and assumptions on the Wider Strategic Allocation in both the without scheme and with scheme scenarios (further information available in the Transport Assessment (Appendix D1 to this ES)). The impact of these committed developments together with the Proposed Development on future baseline air quality conditions has therefore been taken into account in the assessment. None of these schemes either in isolation or cumulatively will alter concentrations to the extent that they would lead to an exceedance of the objectives.
- N4.58 The air quality impacts of the proposed development upon receptors within the Wider Strategic Allocation and other committed schemes will be similar to those at the modelled receptors on and near to the site. The air quality model results demonstrate that the air quality objectives will be achieved and the impacts of the proposed development will be negligible. The presence of these committed schemes will not alter that conclusion, that is there are no cumulative effects.

Other Developments

- N4.59 The conclusions on likely cumulative effects set out above in respect of the Wider Strategic Allocation similarly relate to other developments considered as part of this cumulative assessment. No additional significant effects are considered likely.

Noise and Vibration

Wider Strategic Allocation

- N4.60 The Proposed Development is close to the following planned developments, and as such cumulative construction noise and construction vibration impacts could occur if there are overlaps in the construction programme:
- The Nursery Fields, Land North of Chalcroft Lane, West Bersted PO21 5TS, Part of strategic allocation – is directly east of application site boundary;
 - Land West of New Barn Lane Bersted, is directly east of application site boundary; and
 - Chalcroft Nursery, Chalcroft Lane, Bersted PO21 5TS, is directly east of application site boundary.
- N4.61 It is expected that all planned developments will incorporate mitigation in the form of a CEMP and, if required, a joint communication plan with ADC can be established to support the response to any potential noise and vibration complaints. With these mitigations in place cumulative impacts from construction noise and construction vibration will not cause significant adverse effects.
- N4.62 In relation to traffic noise, increases in traffic associated with the Wider Strategic Allocation have been built into the traffic data considered as part of Chapter H of this ES and, as such, cumulative effects have already been taken into account as part of the assessment report in that chapter. Therefore, no additional adverse effects need to be reported in this Chapter.

Other Developments

- N4.63 The majority of the other developments are between 1 and 3 kilometres from the application site and there is no potential for significant adverse effects as this lies outside of the ZOI for the noise assessment for the Proposed Development.
- N4.64 The same conclusion on traffic noise associated with the Wider Strategic Allocation relates to other developments and no further adverse cumulative effects are considered likely.

Historic Built Environment

Wider Strategic Allocation

- N4.65 There are no significant impacts identified in Chapter I of this ES and therefore there is no potential for cumulative effects when the Proposed Development is considered alongside other sites within the Wider Strategic Allocation.

Other Developments

- N4.66 Similarly, there is no potential for cumulative effects when the Proposed Development is considered alongside other developments identified in Table N4.1 of this ES.

Archaeology

Wider Strategic Allocation

- N4.67 The ZOI associated with archaeology is limited to the development site boundary and therefore no likely significant cumulative effects are anticipated when the Proposed Development is considered alongside the development of sites in the Wider Strategic Allocation.

Other Developments

- N4.68 Similarly, no likely significant cumulative effects are anticipated when the Proposed Development is considered alongside the development of other sites identified in Table N4.1.

Water Environment and Drainage

Wider Strategic Allocation

- N4.69 Mitigation measures proposed as part of Chapter K of this ES the accompanying Flood Risk Assessment and Sustainable Drainage Report (Appendices K1 and K2) are in line with national and local guidance as at the date of this ES.
- N4.70 The mitigation measures have been identified to sustainably and effectively reduce and mitigate the risk posed to the application site from the various sources of flood risk found on site. Therefore, if the proposed measures were to be adopted, the risk of flooding to the site would be reduced and neither pose a risk, nor increase the flood risk, to other parts of the development site as surface water and flood risk will have been managed appropriately following the guidance in the attached Flood Risk Assessment and Sustainable Drainage Report.
- N4.71 The potential risks related to flood risk and drainage of the Proposed Development have been suitably mitigated to eliminate the impact or minimise the potential impact if elimination was not possible. The mitigation measures identified have ensured that flood risk has been identified and mitigated where possible and will not cause flooding further downstream of the Lidsey Rife, or cause flooding in other areas of the Wider Strategic Allocation.
- N4.72 Furthermore, Chapter K includes a strategic drainage plan and design including the use of SuDS (attenuation basins) to sustainably manage surface water runoff and limit the outfall of the site to pre-development greenfield QBAR rates. This ensures that the on-site watercourses, watercourses within the wider allocation and the ground surrounding the site are not subject to an increased risk of surface water flooding or surface water runoff arising from the Proposed Development.
- N4.73 The mitigation measures will minimise and reduce the potential impacts faced by the Proposed Development during both construction and operation phases. These measures will also ensure the development and operation on-site will not impede or impact the other developments within the Wider Strategic Allocation.
- N4.74 The other sites within the Wider Strategic Allocation will follow a similar mitigation strategy for managing flood risk and ensuring sustainable drainage, with the use of SuDS in line with local and national policy, and reduce and eliminate the impact the wider allocation may have on watercourses and developments outside of the allocated site and to ensure the allocated site as a whole will not increase surface water runoff and infiltration through control of these factors through a comprehensive and calculated drainage strategy.
- N4.75 Therefore, no significant cumulative effects are identified as requiring additional mitigation.

Other Developments

- N4.76 Where relevant, a similar conclusion to that identified in respect of the Wider Strategic Allocation also applies in respect of the other developments identified in Table N4.1 of this Chapter. No significant cumulative effects are considered likely.

Socio-Economics

- N4.77 Information is not publicly available in relation to the build costs and construction period for all of the cumulative schemes. As a result, it has not been possible to assess the cumulative impact of the construction phases of all developments that are planned in the local area. However, the impacts of these schemes in terms of temporary construction employment generation and gross value added (GVA) generation will be beneficial.
- N4.78 Where information has not been provided on bespoke population yields arising from development, assumptions have been made using the West Sussex Planning Obligations document figures.

Wider Strategic Allocation

- N4.79 Based on the currently available information as presented above and combined with the Framework's proposals, Table N4.3 summarises the operational socio-economic effects of the Strategic Allocation. In terms of construction, it is expected that there will be beneficial effects in relation to employment and economic output, however these cannot be quantified at this stage due to not available construction costs information.

Table N4.3 Operational Socio-economic Effects, Wider Strategic Allocation

Theme	Assessment	Effects	
		Local Impact Area	Wider Impact Area
Employment & Economic Output	Alongside the 136 new jobs that will be created by the Proposed Development, additional employment opportunities will be generated by the rest of the commercial provision across the Strategic Allocation, including a second local centre, an additional primary school, new library and the sports hub.	Permanent Minor Beneficial	Negligible
Housing	A total of 4,300 new homes will be delivered by the Strategic Allocation of varied tenures and sizes that will contribute in meeting the housing need across the District.	Permanent Moderate Beneficial	Permanent Minor Beneficial
Education	The total of 4,300 new homes will create demand for 1,075 primary places and 775 secondary places cumulatively across the period to 2038. Two primary schools will be provided within the Strategic Allocation that will accommodate the entire allocation assuming that these will be at least a 2FE and a 3FE primary schools. In terms of secondary provision, it is possible that additional capacity in existing facilities, which account for 1,984 pupils currently, will be required to meet the arising need. The Planning School Places Study (2021) (Error! Reference source not found.) states that "the Arun DC site assessment process has indicated that site options in the Ford area should be considered and policies in the Arun Local Plan facilitate a new secondary school in this area." This is expected to meet the secondary school demand	Permanent Minor Adverse	Negligible

Theme	Assessment	Effects	
		Local Impact Area	Wider Impact Area
	across the Barnham/Westergate school planning area where the Strategic Allocations is located.		
Healthcare	The population increase could relate to 9,225 residents. Although not all of these are expected to be new in the local area, for the purposes of the assessment it is considered that all will need to be catered by the GP Practices in proximity. As analysed in Error! Reference source not found. , there are two GPs around the Strategic Allocation that are expected to absorb the demand. These GP practices currently operate at a combined ratio of 1FTE GP per 1,739 patients. If no additional provision is provided, the ratio will be increased to 1FTE GP per 2,449 patients (+41%) adding further pressures to healthcare providers. It is expected that mitigation measures similar to those identified for the Proposed Development will be in place and the adverse effects will have negligible residual effects.	Moderate Adverse	Minor Adverse to Negligible
Open Space	A variety of widely accessible new open space, walking and cycling routes, allotments and wetland habitats will be provided enhancing the existing biodiversity.	Permanent Minor Beneficial	Permanent Minor Beneficial
Community Facilities	The two new local centres that will be delivered in the Strategic Allocation will provide a variety of shops, restaurants and community space including a Tier 7 library and are expected to meet the additional demand that will be rise from the population increase in the area.	Negligible	Negligible

N4.80 On this basis, it is unlikely that the delivery of the Strategic Allocation will have significant adverse effects in the area, subject to individual mitigation measures particularly in relation to healthcare provision.

N4.81 Synthesising the findings, it is not expected that the delivery of the rest of the sites that together with the Proposed Development comprise the Strategic Allocation will have any further impacts in relation to the socio-economic effects to those identified in Chapter L of this ES.

Other Developments

N4.82 The construction details of these schemes are not publicly available. However, it is assumed for the purposes of this assessment that all the schemes in the above table are estimated to be completed during the construction phases of the Proposed Development (by 2030/33). Therefore, the construction activity generated by the cumulative schemes is likely to overlap with the construction of the Proposed Development.

N4.83 A proportion of the construction jobs generated by the above schemes would be expected to be based in the local and wider impact areas. There are currently 229 JSA claimants in the local impact area and 369 in the wider impact area of which around 82.9% and 62.7%, respectively, were seeking elementary occupations that would be appropriate for construction. As a result, the

employment and economic output cumulative effect conclusions of the Socio-economics Chapter assessment section linked to the construction of the Proposed Development during the construction phase will likely be **temporary (long-term) beneficial** impact of **moderate** significance.

N4.84 Table N4.4 summarises the operational effects of the other schemes assessed as part of this cumulative assessment.

Table N4.4 Assessment of operational Cumulative Effects of other developments

Theme	Eastergate Fruit Farm	Land S & W of Barnside	Nyton Rd, Northfields Lane & Fontwell Lane	Wings Nursery Lidsey Road	N of Lee's Yard	Land W of Fontwell Avenue	Boweries Barnham Road	Land S of Barnham Station	Warwick Nursery	Combined Impacts
Application Ref	EG/71/14/OUT	AL/8/16/OUT & AL/33/19/RES	AL/61/13/ & AL/102/17/RES	AL/32/19/OUT	AL/21/20/OUT	BN/50/20/PL	BN/135/20/PL	BN/142/20/OUT	BN/153/20/PL	n/a
Operational Employment	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No employment is generated
Population Increase	Total resident population 106 persons based on West Sussex County Council (WSCC) Planning obligations	Total resident population 39 persons based on WSCC planning obligations	An increase of 670 resident population assuming 2.5 person per household and 138 residents from care homes.	Increase in population of approx. 138 people assuming 2.5 persons per household	Increase in population of 82 people using WSCC planning obligations	Increase in population of 95 people using WSCC planning obligations	Increase in population of 60 people using WSCC Planning obligations.	Increase in population of 445 people using WSCC Planning obligations.	Increase in population of 105 people using WSCC Planning obligations.	A cumulative increase of 1,878 residents is expected as a result of these schemes.
Housing	Up to 60 homes, 30% affordable, equates to 18 affordable units	Up to 14 homes and 2 affordable units	Up to 268 homes, 30 % affordable equating to 80 affordable units	Up to 55 homes, 33% affordable, equating to 18 affordable units	Up to 38 homes, 30% affordable, equating to 12 affordable units	Up to 42 dwellings, 30% affordable, equating to 13 affordable units	Up to 30 dwellings, 30% affordable equating to 7 affordable units	Up to 200 dwellings, 30% affordable equating to 60 affordable units	Up to 44 dwellings, 30% affordable equating to 13 affordable units	A cumulative increase of up to 751, all of which deliver 30% affordable units in the local area.
Education	n/a	n/a	n/a	Contributions for primary and secondary	n/a	n/a	n/a	n/a	n/a	Section 106 contributions to primary and

Theme	Eastergate Fruit Farm	Land S & W of Barnside	Nyton Rd, Northfields Lane & Fontwell Lane	Wings Nursery Lidsey Road	N of Lee's Yard	Land W of Fontwell Avenue	Boweries Barnham Road	Land S of Barnham Station	Warwick Nursery	Combined Impacts
				financial contribution.						secondary schools
Health	Contributions £472 per dwelling	n/a	Contribution of £116,727 towards managing GP consultant care at the Croft Practice	Contributions of £54,557 for The Croft GP surgery" for the infrastructure needs of managing "on the day demand"	n/a	n/a	n/a	n/a	n/a	Section 106 contributions to local GP practices
Open Space	New open space provision, landscaping and drainage	Open space, landscaping and drainage.	Open space and children's play area including LEAP and NEAP play spaces.	Open space and children's play area.	Open space of 2,675sqm and children's play area (LEAP) of 460 sqm.	3,471sqm of Public Open Space (POS) to include landscaping and play areas	4,355 sqm of Public Open space and landscaping	Delivery of a community park, amenity green space, green edges, allotments and children's play area (LEAP).	3,878sqm of Public Open Space and landscaping	Additional open space and play areas will be delivered across all schemes.
Community Facilities	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No community facilities provided.

- N4.85 Drawing the analysis together, a description of the cumulative effects during the operation phase upon socio-economics receptors arising from each identified impact is given in the table below. It should be noted that the cumulative effects during the operation phase of the schemes for the local impact area are not expected to change from that set out in the Socio-economics Chapter. The table below summarises the cumulative effects during the operation phases for the wider impact area.
- N4.86 Overall, the schemes will have a cumulatively positive impact across the local area as presented in Table N4.5 below.

Table N4.5 Cumulative Assessment Operational Effects

Theme	Local Impact Area	Wider Impact Area
Employment & Economic Output	Permanent Minor Beneficial	Negligible
Housing	Permanent Minor Beneficial	Permanent Minor Beneficial
Education	Negligible	Negligible
Healthcare	Negligible	Negligible
Open Space	Permanent Minor Beneficial	Permanent Minor Beneficial
Community Facilities	Negligible	Negligible

Climate Change and Resilience

Wider Strategic Allocation

During Construction

- N4.87 Traditionally the greatest impact on an asset's whole life carbon has been associated with its operational phase. As briefly mentioned in Chapter M, this trend is expected to shift due to the ongoing decarbonisation of the UK electricity grid, better performing buildings, and a transition to electric heating and transport. As a result, the embodied carbon of the Proposed Development is expected to represent a significant proportion of the Proposed Development's whole life carbon emissions.
- Embodied carbon of the materials used to construct the buildings of the Proposed Development (RICS Stages A1-A3)
- N4.88 Carbon emissions associated with the raw material extraction and manufacturing of the building materials used on site have been calculated using benchmark data from the Royal Institute of Chartered Surveyors (RICS) for lifecycle stages A1-A3.
- N4.89 The areas utilised for this assessment are only indicative and have been pro rata against the indicative areas used for the outline planning application site. The land uses are based on the proposals contained within the framework masterplan.
- N4.90 The A1-A3 embodied carbon emissions have been estimated to be approximately 231,775 tCO₂e. The RICS carbon factors represent the embodied carbon in the construction materials (as per lifecycle stages A1-A3 (EN 15978)) and are shown in Table N4.6 below. The resulting embodied carbon has been calculated by multiplying the proposed GIA per land use type by the most relevant RICS carbon factor.

Table N4.6 Extract of RICS 2014 Embodied Carbon Benchmarks per use type, 2014

Use type	kgCO ₂ /m ²
Local Centre	690
Mixed use city block (commercial/resi)	720
Semi detached	540
Low rise apartment (3-5 storey)	550
Detached single family home	550
Libraries and community centre	485
Primary/nursery education	690

N4.91 **Effect significance:** As the embodied carbon is confined to the process of the raw material extraction and manufacturing of the building materials used for the Proposed Development rather than being emitted annually, using the quantitative elements of the effect significance criteria and comparing the overall embodied carbon emissions to the (annual proportion) of the national carbon budget's share attributable to the built environment sector would not be appropriate. Instead, a qualitative assessment has been made based on professional judgment and experience with similar schemes. It is expected that the magnitude of produced effects would be low. This considered alongside the identified high sensitivity of global climate has led to a conclusion that any emissions generated in the process are likely to result in indirect, long-term and permanent international effects of **minor adverse** significance.

2 Construction processes, including site fuel and energy use (RICS Stage A5)

N4.92 The carbon emissions associated with the construction processes, such as fuel use in mobile plant and equipment (as per lifecycle stage A5 (EN 15978)), have been calculated using the Royal Institute of Chartered Surveyors (RICS) factor: 1,400 kg CO₂e/£100,000 of project value.

N4.93 The A5 embodied carbon emissions have been estimated to be approximately 312,815 tCO₂e. This has been calculated by multiplying the proposed RICS factor above by the total anticipated project value.

N4.94 **Effect significance:** As the carbon associated with the construction process is confined to the period of construction of the Proposed Development, rather than being emitted annually, using the quantitative elements of the effect significance criteria and comparing the overall embodied carbon emissions to the (annual proportion) of the national carbon budget's share attributable to the built environment sector would not be appropriate. Instead, a qualitative assessment has been made based on professional judgment and experience with similar schemes. It is expected that the magnitude of produced effects would be low. This considered alongside the identified high sensitivity of global climate has led to a conclusion that any emissions generated in the process are likely to result in indirect, long-term and permanent international effects of **minor adverse** significance.

During Operation

N4.95 The key sources of carbon emissions at the Operational stage, which have been reviewed as part of this assessment, are considered below.

1 Regulated components of the Proposed Development's operational energy

N4.96 The Proposed Development will meet the carbon emission limits specified in Part L 2013 of the Building Regulations 2013. The target emission rate for all buildings in the Proposed Development has been calculated to be 6,952 tonnes of CO₂ per year. This baseline has been calculated based on a 'notional gas-fired' scheme, i.e. a scheme identical to the Proposed

Development in terms of areas and use of each building, but serviced by a standard gas-fired heating system.

N4.97 Detail on the energy strategy for the strategic allocation, including the thermal performance and the servicing strategies of the buildings, is not available at this stage. Whilst it is likely that the Proposed Development will deploy an energy strategy which performs substantially better than the Building Regulations baseline, for the purposes of this Environmental Impact Assessment (EIA), the baseline has been used as this represents a 'worst case' scenario.

2 Unregulated components of the Proposed Development's operational energy

N4.98 Unregulated carbon emissions have likewise been calculated based on Part L of the Building Regulations. Although unregulated carbon emissions are not included within Part L results, an estimate of unregulated energy consumption has nevertheless been provided as an output of this methodology. The annual unregulated energy usage anticipated for the Proposed Development is **6,692** tonnes of CO₂ per year.

Operational emissions overall impact

N4.99 The opening year for the complete Proposed Development is expected to be 2024 (subject to successfully gaining planning permission). Therefore, the 3rd, 4th and 5th carbon budgets are the ones applicable to its operational phase.

N4.100 The total emissions associated with operational energy (regulated and unregulated) have been estimated to be **13,644** tonnes of CO₂ per year. This accounts proportionally for:

- 0.087% annual proportion of the 4th carbon budget (2023 – 2027) (40% share attributable to the built environment sector)
- 0.099% annual proportion of the 5th carbon budget (2028 – 2032) (40% share attributable to the built environment sector)
- 0.18% annual proportion of the 6th carbon budget (2033 – 2037) (40% share attributable to the built environment sector)

N4.101 Therefore, it can be concluded that the estimated total regulated carbon emissions:

- represent a contribution lower than 1% of the (annual proportion of the) relevant National Carbon Budgets' share attributable to the built environment sector; and
- are lower than 25,000 tCO₂e in any year.

N4.102 Following the methodology described in Chapter M of this ES this means that the magnitude of produced effects is anticipated to be low. This considered alongside the identified high sensitivity of global climate has led to a conclusion that any emissions generated in the process are likely to result in a combination of direct and indirect, long-term and international effects of **minor adverse** significance.

Other Developments

During Construction

N4.103 As previously, the key sources of carbon emissions at the Construction stage, which have been reviewed as part of this assessment are considered below.

- 1 Embodied carbon of the materials used to construct the buildings of the Proposed Development (RICS Stages A1-A3)

- N4.104 As previously, the carbon emissions associated with the raw material extraction and manufacturing of the building materials used on site have been calculated using benchmark data from the Royal Institute of Chartered Surveyors (RICS) for lifecycle stages A1-A3.
- N4.105 The areas utilised for this assessment of Cumulative Developments within the wider area are based on residential use types or as set out in Table N4.1.
- N4.106 The A1-A3 embodied carbon emissions have been estimated to be approximately 28,967 tCO₂e. The RICS carbon factors represent the embodied carbon in the construction materials (as per lifecycle stages A1-A3 (EN 15978)) and are shown by **Error! Reference source not found..** The resulting embodied carbon has been calculated by multiplying the proposed GIA per land use type by the most relevant RICS carbon factor.

Table N4.7 Extract of RICS 2014 Embodied Carbon Benchmarks per use type, 2014

Use type	kgCO ₂ /m ²
Semi detached	540
Low rise apartment (3-5 storey)	550

- N4.107 **Effect significance:** As the embodied carbon is confined to the process of the raw material extraction and manufacturing of the building materials used for the Cumulative Developments rather than being emitted annually, using the quantitative elements of the effect significance criteria and comparing the overall embodied carbon emissions to the (annual proportion) of the national carbon budget's share attributable to the built environment sector would not be appropriate. Instead, a qualitative assessment has been made based on professional judgment and experience with similar schemes. It is expected that the magnitude of produced effects would be low. This considered alongside the identified high sensitivity of global climate has led to a conclusion that any emissions generated in the process are likely to result in indirect, long-term and permanent international effects of **minor adverse** significance.

2 Construction processes, including site fuel and energy use (RICS Stage A5)

- N4.108 The carbon emissions associated with the construction processes, such as fuel use in mobile plant and equipment (as per lifecycle stage A5 (EN 15978)), have been calculated using the OneClick construction site impact factor of 30.34 kgCO₂ e/m².
- N4.109 The A5 embodied carbon emissions have been estimated to be approximately 1,625 tCO₂e. This has been calculated by multiplying the proposed RICS factor above by the total anticipated project value.
- N4.110 **Effect significance:** As the carbon associated with the construction process is confined to the period of construction of the Cumulative Developments, rather than being emitted annually, using the quantitative elements of the effect significance criteria and comparing the overall embodied carbon emissions to the (annual proportion) of the national carbon budget's share attributable to the built environment sector would not be appropriate. Instead, a qualitative assessment has been made based on professional judgment and experience with similar schemes. It is expected that the magnitude of produced effects would be low. This considered alongside the identified high sensitivity of global climate has led to a conclusion that any emissions generated in the process are likely to result in indirect, long-term and permanent international effects of **minor adverse** significance.

During Operation

- N4.111 As previously, the key sources of carbon emissions at the Operational stage, which have been reviewed as part of this assessment considered below.

1 Regulated components of the Cumulative Development's operational energy

- N4.112 It is assumed that the Cumulative Developments will meet the carbon emission limits specified in Part L 2013 of the Building Regulations 2013. The target emission rate for all buildings in the Cumulative Developments have been calculated to be 878 tonnes of CO₂ per year. This baseline has been calculated based on a 'notional gas-fired' scheme, i.e. a scheme serviced by a standard gas-fired heating system.
- N4.113 Whilst it is likely that the Cumulative Developments will deploy an energy strategy which performs substantially better than the Building Regulations baseline, for the purposes of this EIA, the baseline has been used as this represents a 'worst case' scenario.
- 2 Unregulated components of the Cumulative Development's operational energy
- N4.114 Unregulated carbon emissions have likewise been calculated based on Part L of the Building Regulations. Although unregulated carbon emissions are not included within Part L results, an estimate of unregulated energy consumption has nevertheless been provided as an output of this methodology. The annual unregulated energy usage anticipated for the Cumulative Developments are 850 tonnes of CO₂ per year.
- 3 Operational emissions overall impact
- N4.115 The total emissions associated with operational energy (regulated and unregulated) have been estimated to be 1,728 tonnes of CO₂ per year. This accounts proportionally for:
- 0.0085% annual proportion of the 3rd carbon budget (2023 – 2027) (40% share attributable to the built environment sector)
 - 0.0111% annual proportion of the 4th carbon budget (2023 – 2027) (40% share attributable to the built environment sector)
 - 0.0125% annual proportion of the 5th carbon budget (2028 – 2032) (40% share attributable to the built environment sector)
 - 0.0224% annual proportion of the 6th carbon budget (2033 – 2037) (40% share attributable to the built environment sector)
- N4.116 Therefore, it can be concluded that the estimated total regulated carbon emissions:
- represent a contribution lower than 1% of the local / regional baseline emissions and (annual proportion) of the relevant National Carbon Budgets' share attributable to the built environment sector; and
 - are lower than 25,000 tCO₂e in any year.
- N4.117 Following the methodology described in Chapter N, this means that the magnitude of produced effects is anticipated to be low. This considered alongside the identified high sensitivity of global climate has led to a conclusion that any emissions generated in the process are likely to result in a combination of direct, long-term and international effects of **minor adverse** significance.

Summary and Conclusions

- N4.118 An assessment has been conducted of the potential for likely significant cumulative effects when the Proposed Development is considered alongside the development of land within the Wider Strategic Allocation; and also in conjunction with other identified reasonably foreseeable developments in the wider area. The assessment has concluded that for the majority of technical aspects considered within this ES that no significant cumulative effects are considered likely. However the following potential issues have been identified:-
- 1 **Landscape and Views** – likely substantial to moderate adverse (significant) impacts on existing undeveloped landscapes and the various Coastal landscape character areas considered in this EIA are anticipated in the cumulative scenario but balanced with a

moderate beneficial (significant) impact due to the delivery of publicly accessible green space. A likely substantial adverse (significant) impact is also anticipated on the current predominantly dark night-time sky. In terms of views, substantial to moderate adverse (significant) impacts are anticipated to residential receptors overlooking the various sites being brought forward; to users of roads, PROWs and the railway line due to the replacement of current areas of open space with development. Other minor and negligible cumulative effects are also identified but these are not considered significant in EIA terms;

- 2 **Noise and Vibration** – in an assumed worst case scenario whereby developments are considered alongside each other – and to reduce the potential for cumulative vibration effects during the construction period – it is recommended that a joint communication strategy is implemented between all developers to manage the potential for construction impacts and ensure that these are not significant in EIA terms;
- 3 **Socio-economics** – minor beneficial (significant) cumulative effects are anticipated in relation to the provision of a range of housing and additional open space when the Proposed Development is considered alongside the Wider Strategic Allocation and other developments in the surrounding area; and
- 4 **Climate Change and Resilience** – considered cumulatively, an overall minor adverse (not significant) effect is likely in respect of carbon emissions arising from the consideration of the Wider Strategic Allocation and other developments in the surrounding area. It is recommended that all schemes are asked to address this and identify measures to reduce their impact on carbon emissions as part of their individual proposals, for example in compliance with policy/ Building Regulations.

N4.119 The above demonstrates that any cumulative effects can be appropriately managed as each site is brought forward and through the appropriate use of best practice or other mitigation measures.

N5.0 Summary and Conclusions

- N5.1 This chapter has considered the inter-relationship between impacts identified within the ES and whether there is a need for further mitigation (synergistic effects). It also considers the potential for cumulative impacts when the development is considered with other development in the surrounding area and within the Wider Strategic Allocation (cumulative effects).
- N5.2 The ES has assessed the potential for effects in relation to the following environmental aspects:-
- 1 Transport & Accessibility
 - 2 Landscape and Views
 - 3 Ecology
 - 4 Air Quality
 - 5 Noise and Vibration
 - 6 Historic Built Environment
 - 7 Archaeology
 - 8 Water Environment and Drainage
 - 9 Socio-Economics
 - 10 Climate Change and Resilience
- N5.3 A range of mitigation measures have been identified throughout the ES which are largely capable of being enforced through the planning process in relation to the development.
- N5.4 It has been identified that non-significant synergistic effects exist for some receptors within the Development Site boundary, which do not give rise to a need for additional mitigation measures.
- N5.5 In relation to the potential for cumulative effects when the Proposed Development is considered alongside other emerging schemes in the surrounding area and the Wider BEW Strategic Allocation, the assessment has shown that there is potential for cumulative effects but that these can be addressed on a site by site basis through the use of best practice measures or appropriate mitigation. There are no further mitigation measures required as part of the Proposed Development to address any effects.
- N5.6 Chapter O provides a comprehensive summary of all mitigation measures, and how these can be secured.

N6.0 **Abbreviations & Definitions**

- 1 ADC - Arun District Council
- 2 AQ - Air Quality
- 3 AR – Archaeology
- 4 BEW - Barnham Eastergate Westgate (Wider Strategic Allocation)
- 5 CC - Climate Change and Resilience
- 6 CEMP - Construction Environmental Management Plan
- 7 E – Ecology
- 8 EIA - Environmental Impact Assessment
- 9 ES - Environmental Statement
- 10 FTE – full time equivalent
- 11 GVA - gross value added
- 12 HB - Historic Built Environment
- 13 HELAA – Housing and Employment Land Availability Assessment
- 14 IEMA – Institute of Environmental Management and Assessment
- 15 LCA - Landscape Character Area
- 16 LEAP – local equipped area of play
- 17 LV - Landscape and Views
- 18 NCA – National Character Area
- 19 NV - Noise and Vibration
- 20 PROW – Public Right of Way
- 21 RICS - Royal Institute of Chartered Surveyors
- 22 SE - Socio-Economics
- 23 T - Transport & Accessibility
- 24 tCO₂e – tonnes of Carbon Dioxide emissions
- 25 WE - Water Environment and Drainage
- 26 WwTW - Wastewater Treatment Works
- 27 ZOI - zone of impact or influence

N7.0

References

- 1 Town and Country Planning (EIA) Regulations 2017
- 2 Town and Country Planning (EIA) (Amendment) Regulations 2018
- 3 Planning Practice Guide (<https://www.gov.uk/government/collections/planning-practiceguidance>)
- 4 Guidelines for Environmental Impact Assessment (IEMA, 2004)
- 5 Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (EC, 1999)
- 6 Cumulative Effects Assessment - Advice note seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects (Planning Inspectorate, V2, August 2019)