Tables

16. Cumulative and Combined Effects

16.1 Introduction

16.1.1 This chapter of the Environmental Statement (ES) addresses the potential for combined and/or cumulative effects to occur as a result of the construction, operation (including maintenance) and decommissioning of the proposed gas fired generating station on the site of the West Burton Power Station (the Proposed Development). It draws on the assessment of impacts provided in **Chapters 6-15** of this ES, and information relating to other known developments that are proposed within the study area.

16.1.2 The cumulative assessment does not consider developments that are already constructed and operating; as such existing operational facilities are accounted for in the baseline conditions established for the main assessments within **Chapters 6-15** of this ES. Similarly, the assessment does not consider developments that are being constructed and would be operating in the future, prior to construction of the Proposed Development. Effects of such future operational facilities are also accounted for in the future baseline conditions established for the main assessments within **Chapters 6-15** of this ES.

16.1.3 As detailed in **Chapter 2:** Assessment Methodology, as required by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (2009 EIA Regulations) (Ref 16-1), when considering the potential environmental effects of the Proposed Development, there is a need to consider the potential for cumulative and combined effects. The use of the 2009 EIA Regulations is explained in **Chapter 1**: Introduction.

16.1.4 Combined and cumulative effects are defined herein as:

- cumulative effects: effects that may arise where the impacts associated with the Proposed Development have the potential to interact with those associated with one or more other developments located in proximity to the Proposed Development (e.g. interaction of impacts which leads to effects of the same type (e.g. air quality)) on the same receptor(s) or features; and
- combined effects: effects that may arise when several different impacts resulting from the Proposed Development (e.g. decrease in air quality, increase in noise disturbance) have the potential to affect a single receptor or feature.

16.1.5 This chapter provides details of other proposed schemes in the vicinity of the Proposed Development that may be of relevance to the cumulative assessment, using information that is in the public domain. This includes proposed schemes that have undertaken EIA scoping, where planning applications are registered with the local planning authorities and/or are already consented developments that have not yet been constructed or are not yet operational.

16.1.6 This chapter is supported by **Figure 16.1** and **16.2** (ES Volume III) which illustrate the Site's location in relation to other developments that have been considered in the cumulative effects assessment (CEA).

16.2 Legislation, Planning Policy and Guidance

Legislative Background

16.2.1 The requirement for cumulative and combined impact assessments is stated in the relevant European Directive and domestic legislation, as detailed below:

- European Directive 2011/92/EU (Ref 16-2) on the assessments of effects of certain public and private projects on the environment requires an assessment of '*the direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent or temporary, positive and negative effects of the project'*; and
- Schedule 4 Part 1 of the 2009 EIA Regulations (Ref 16-1) which apply to an Application (Section 1.5) requires:

"*A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development, resulting from -*

a) The existence of the development;

b) The use of natural resources;

c) The emission of pollutants, the creation of nuisances and the elimination of waste, and the description by the applicant of the forecasting methods used to assess the effects on the environment."

and

"*The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development.*"

16.2.2 Bassetlaw District Council (BDC) Core Strategy and Development Policies Development Plan Document (Ref 16-3) Policy DM10: Renewable and Low Carbon Energy sets out a list of criteria against which proposals for renewable and low carbon energy infrastructure will need to demonstrate compliance as follows:

i) "are compatible with policies to safeguard the built and natural environment, including heritage assets and their setting, landscape character and features of recognised importance for biodiversity;

ii) will not lead to the loss of or damage to high-grade agricultural land (Grades 1 & 2);

iii) are compatible with tourism and recreational facilities; will not result in unacceptable impacts in terms of visual appearance; noise; shadow flicker;

watercourse engineering and hydrological impacts; pollution; or traffic generation;

iv) will not result in unacceptable impacts in terms of visual appearance; noise; shadowflicker; watercourse engineering and hydrological impacts; pollution; or traffic generation; and

v) will not result in an unacceptable cumulative impact in relation to the factors above."

16.2.3 BDC is currently in the early stages of preparing a new Local Plan for the District and began consulting on a Draft Bassetlaw Local Plan (Ref 16-4) in January 2019. Although the draft Local Plan makes specific reference to the existing West Burton Power Station, there are no specific policies or objectives relating to cumulative effects. Reference is however made to the National Planning Policy Framework (NPPF) regarding the need to provide a positive strategy for energy from renewable and low carbon energy and heat which ensures that adverse impacts, (including cumulative landscape and visual impacts) are addressed satisfactorily.

16.3 Assessment Methodology

Impact Assessment and Significance Criteria

16.3.1 There is no standard prescriptive method for assessing cumulative and combined effects.

16.3.2 With regard to cumulative effects, the ability to quantify the extent to which the environmental effects of other schemes can interact with those associated with the Proposed Development depends upon on the level of information available regarding such other schemes. Where environmental assessment information regarding other schemes is not available or is uncertain, the cumulative assessment is necessarily qualitative and the assessment is primarily based upon professional opinion. However, matrices and modelling have been used where appropriate and sufficient information is available.

16.3.3 With regard to the assessment of combined effects, this has taken account of the assessment findings reported within **Chapters 6-15** of this ES and the ability of these to interact and impact upon common receptors.

16.3.4 When considering cumulative and combined effects, the mitigation measures set out in **Chapters 6-15** have been taken into account (i.e. only residual (after mitigation) effects of the Proposed Development have been considered within this chapter).

16.3.5 Cumulative and combined effects are assessed to be neutral, minor, moderate or major. Moderate or major effects are considered to be significant, using the methodologies outlined in each technical chapter (refer to **Chapters 6–15** of this ES).

Cumulative Effects

16.3.6 Cumulative effects are those that accrue over time and space caused by the interaction of impacts associated with a number of developments. The Planning Inspectorate Advice Note 17 'Cumulative Effects Assessment (CEA) Relevant to Nationally Significant Infrastructure Projects' (Ref 16-5) sets out a four stage approach to the assessment of cumulative effects:

- Stage 1: identify the Zone of Influence (ZOI) and identify a long list of other schemes;
- Stage 2: identify short list of other schemes for cumulative assessment;
- Stage 3: gather information; and
- Stage 4: assess.

16.3.7 This approach has been followed and is presented in this chapter.

16.3.8 An initial '*long list*' of schemes in the vicinity of the Proposed Development was identified prior to the submission of the EIA Scoping Report (**Appendix 1A**–(ES Volume II)) and subsequent to this, an initial shortlist of schemes considered to be of relevance to the cumulative assessment was provided in the Preliminary Environmental Information (PEI) Report (Ref 16-6). This list was subsequently reviewed and updated in consultation with the local planning authorities, including taking account of feedback from the statutory consultation. A revised shortlist of other schemes considered to be of relevance to the cumulative assessment (as at February 2019) is presented in **Section 16.5**.

16.3.9 The schemes identified for cumulative assessment have been categorised into tiers to indicate the level of certainty associated with each scheme **(Table 16-1)**. Those in Tier 1 are most certain, while those in Tier 3 are least certain, although they have been assessed, where possible, at a high level, in accordance with PINS Advice Note 17 (Ref 16-5).

Table 16-1: Level of certainty for each tier

Tier	Degree of certainty	Decreasing level of detail likely to be available
Tier 1	• Under construction.* • Permitted application(s), whether under the PA2008 or other regimes, but not yet implemented. • Submitted application(s) whether under the PA2008 or other regimes but not yet determined.	↓
Tier 2	• Projects on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted. • Projects on the Local Planning Authorities' planning application database where a scoping report has been submitted.	
Tier 3	• Projects on the Planning Inspectorate's Programme of Projects where a scoping report has not been submitted. • Identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited. • Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.	

**Where other projects are expected to be completed before construction of the proposed NSIP and the effects of those projects are fully determined, effects arising from them should be considered as part of the baseline and may be considered as part of both the construction and operational assessment. The ES should clearly distinguish between projects forming part of the baseline and those in the Cumulative Effects Assessment (CEA).* Adapted from Table 3 in PINS Advice Note 17 (Ref 16-5).

16.3.10 In order to assess the potential for cumulative effects to arise in relation to other schemes, there is a need to understand their potential for generating environmental effects. Where a planning application has been made, information presented within the applicable ES or environmental reports accompanying the

planning application has been obtained and reviewed. For schemes that are known to be proposed (either via screening or scoping opinion requests submitted to the local authority/Planning Inspectorate or following presentation of information in the public domain), but where an ES or other environmental reports have not yet been prepared or submitted, readily available information has been obtained and reviewed (Stage 3). This includes communication with local authorities, public consultation material and reference to material available via the internet.

16.3.11 Following the gathering of information from available sources, the effects of the Proposed Development have been considered in conjunction with the potential effects from other schemes or activities that are both reasonably foreseeable, in terms of delivery (e.g. the applicable scheme has planning consent or is in the planning process) and geographically located in a position where environmental impacts could act together to create an effect that is more (or less) significant overall than the effect of the individual developments alone (Stage 4).

16.3.12 Operational impacts are generally long-term, and whilst construction impacts are often short-term and temporary, they can potentially be of a large magnitude. Consequently, when cumulative effects that could be associated with construction at one site and operation at another are considered, the difference in duration and reversibility is considered within the assessment.

16.3.13 When assessing cumulative effects, it is appropriate to also acknowledge the relative contributions that different schemes make to a cumulative effect, and carefully consider whether a cumulative effect could occur at all. For example, effects associated with a large scale scheme may be significant, and whilst a smaller scheme may contribute to this effect, the cumulative effect of the schemes together may only be considered as being significant if the overall effect is of greater significance than the effect of either project in isolation. It follows that if the environmental effects associated with the Proposed Development are assessed as being negligible, there is a very low risk that cumulative effects could be generated (given that the Proposed Development impacts would be very low/low, or the receptor sensitivity would be very low/low). Professional judgement is required in order to determine whether cumulatively effects could become significant when added to those of another project.

16.3.14 Where applicable, the assessment considers all other known developments that have the potential to generate cumulative effects with the Proposed Development, thus representing a worst-case assessment.

Study Area

16.3.15 Cumulative effects are generally unlikely to arise unless the other proposed developments are in close proximity to the Site, recognising that distances vary with the nature of the potential effect and the nature of the receptor (e.g. cumulative air quality effects could occur for developments a greater distance apart than, for example, noise effects). Construction projects are required to employ regulatory and managerial controls and good practice to mitigate environmental impacts wherever possible. Nevertheless, consideration has been

given to the presence of common pathways from nearby schemes to a single receptor or feature, and whether there is potential for impacts of a sufficient magnitude that could result in a particular receptor or feature experiencing cumulative effects.

16.3.16 The study area for the consideration of cumulative and combined effects has been developed taking into account the predicted extent of effects associated with the Proposed Development as detailed within **Chapters 6–15** of this ES. The approach to defining the study area for each environmental effect is described in each respective topic specific chapter, and was consulted on at the scoping stage and statutory consultation stage.

16.3.17 The study area for each environmental assessment has been defined in the relevant topic specific chapter of this ES (**Chapters 6–15**) and is outlined in **Table 16-2**. Information on the likely extent of impacts associated with other developments in the area has also been considered (refer to **Section 16.5**).

Table 16-2: ZOI summary table

Environmental Topic	Zone of Influence (ZOI)
Air Quality	**Construction:** 350m for emissions and construction dust. **Operation:** 10km ZOI for all receptors (including ecological). Refer to **Chapter 6**: Air Quality for more information.
Traffic and Transport	**Construction:** The A620 from its junction with the A631 to its junction with Sturton Road, and the C2 Sturton Road and Gainsborough Road to its junction with Station Road. **Operation:** N/A Refer to **Chapter 7**: Traffic and Transport for more information.
Noise and Vibration	**Construction and Operation:** 1km ZOI. Refer to **Chapter 8**: Noise and Vibration for more information.
Ecology and Nature Conservation	**Construction and Operation:** A maximum ZOI of 10km has been applied: • 10km for international statutory designated sites; • 2km ZOI for national and locally designated sites; and • 500m for ponds. Refer to **Chapter 9**: Ecology for more information.

Environmental Topic	Zone of Influence (ZOI)
Landscape and Visual Amenity	**Construction and Operation:** 5km ZOI. Refer to **Chapter 10**: Landscape and Visual Amenity for more information.
Ground Conditions and Hydrogeology	**Construction and Operation:** 2km ZOI. Refer to **Chapter 11**: Ground Conditions and Hydrogeology for more information.
Flood Risk, Hydrology and Water Resources	**Construction and Operation:** 1km ZOI. Refer to **Chapter 12**: Flood Risk, Hydrology and Water Resources for more information.
Socio-Economics	**Construction and Operation:** This has been based on the Worksop and Retford Travel to Work Area (TTWA). Refer to **Chapter 13**: Socio-Economics for more information.
Cultural Heritage	**Construction and Operation:** A maximum ZOI of 3km has been applied: • 3km for designated assets; and • 1km for non-designated assets. Refer to **Chapter 14**: Cultural Heritage for more information.

Consultation

16.3.18 A summary of consultation activities relevant to the cumulative and combined effects assessment is provided in **Table 16-3**.

Table 16-3: Consultation summary

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this Chapter
The Secretary of State	June 2017 (Scoping Opinion)	The following comments were made with regards to cumulative assessment: • The inter-relationship between aspects of the environments likely to be significantly affected is a requirement of the EIA Regulations 2009 (see Schedule 4 Part 1 of the EIA Regulations 2009). These occur where a number of separate impacts, e.g. noise and air quality, affect a single receptor such as fauna. The Secretary of State considers that the inter-relationships between factors must be assessed in order to address the environmental impacts of the proposal as a whole. This will help to ensure that the ES is not a series of separate reports collated into one document, but rather a comprehensive assessment drawing together the environmental impacts of the Proposed Development. This is	Inter-relationships (referred to in this ES as 'combined effects') have been assessed within this chapter. Refer to **Section 16.7**.

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this Chapter
		particularly important when considering impacts in terms of any permutations or parameters to the Proposed Development.	
		The potential cumulative impacts with other major developments will need to be identified, as required by the Directive. The significance of such impacts should be shown to have been assessed against the baseline position (which would include built and operational development). In assessing cumulative impacts, other major development should be identified through consultation with the local planning authorities and other relevant authorities. Applicants should refer to Planning Inspectorate Advice Note 17 Cumulative Effects Assessment for further guidance on the Inspectorate's recommended approach to cumulative effects assessment.	The methodology for producing the list of other developments is outlined in **Section 16.3** of this chapter. The local authorities have been consulted on the list of schemes to be considered in the cumulative assessment via the EIA Scoping Report (**Appendix 1A** – ES Volume II) and PEI Report (Ref 16-6). The cumulative assessment follows the guidance as set out in Advice Note 17 (Ref 16-5).
		Details should be provided in the ES, including the types of development, location and key aspects that may affect the EIA and how	Details on each of the schemes considered and assessed in the cumulative assessment are

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this Chapter
		these have been taken into account as part of the assessment will be crucial in this regard.	provided in **Table 16-24**.
		For the purposes of identifying any cumulative effects with other developments in the area, Applicants should also consult consenting bodies in other EU states to assist in identifying those developments (see commentary on transboundary effects below).	A screening matrix taking into account Planning Inspectorate Guidance on Transboundary Impacts (Ref 16-7) and which details the potential transboundary effects of the Proposed Development is included in **Appendix 2A** (ES Volume II). This is provided as information to confirm that no potentially significant transboundary effects have currently been identified and thus there is no requirement to consult with other EU states.
		The ES should give equal prominence to any development which is related with the Proposed Development to ensure that all the impacts of the proposal are assessed.	The cumulative assessment considers all other current proposals within the West Burton Power Station site currently being pursued by the

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this Chapter
			Applicant. Details on each of the schemes considered and assessed either as part of the current or future baseline or as part of the cumulative assessment are provided in **Table 16-24**.
		The Secretary of State recommends that the Applicant should distinguish between the Proposed Development for which development consent will be sought and any other development. This distinction should be clear in the ES.	This distinction has been made throughout the ES.
		The Secretary of State notes that at present three planned developments have been identified within the vicinity of the proposed development. The Applicant states that other developments having the potential for cumulative effects will be identified through consultation with "*the relevant local planning authorities*". No other methodological information is provided. The Applicant's attention is drawn to the	Local authorities have been consulted on the list of cumulative schemes via the EIA Scoping Report (**Appendix 1A**: ES Volume II) and PEI Report (Ref 16-6), whilst the cumulative assessment follows the methodology as set out in Advice Note 17 (Ref 16-5) as detailed in **Section 16.3**.

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this Chapter
		Inspectorate's Advice Note 17: Cumulative Effects Assessment, which sets out the recommended approach to such assessments.	
Natural England	Formal consultation October 2017	Natural England has no comment to make on this chapter.	No response required.
Sturton-le-Steeple Parish Council	Formal consultation October 2017	The Parish Council notes that West Burton C is intended to provide backup to renewable sources, and welcomes this development. However, the Council also notes that West Burton A is more or less on permanent standby, (i.e. it performs the same function as is intended for West Burton C). West Burton C should de facto obviate the need for West Burton A. This power generator was originally intended to be decommissioned some years ago. Instead it has remained- with a major continuing adverse effect on the local environment. The pressure on the environment of the local area from the plant has been recognized in two judgements by the planning inspectorate against appeals relating to the construction of major windfarms in the locality, on the grounds of	The Proposed Development is not intended to replace the operation of West Burton A (WBA) Power Station and the two power stations are not linked other than by being brought forward by the same entity (the Applicant) within the West Burton Power Station site. Each generating station performs a different role in securing the future supply of electricity to the UK. The future plans for WBA Power Station will be made by the Applicant in due course and at that time the public will be consulted as appropriate.

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this Chapter
		having an unacceptable cumulative effect. This is a rural area, and creeping industrialization should not be allowed to continually degrade the environment.	
Bassetlaw District Council Environment Agency Historic England Lincolnshire County Council Marine Management Organisation Natural England Nottinghamshire County Council West Lindsey District Council	March/April 2019	Provision of copies of final draft chapter and offer of pre-application meeting to each consultee to: • discuss final proposals and assessments; • obtain feedback prior to submission of Application; and • agree an approach to drafting of Statements of Common Ground (SoCG) prior to submission of the Application. Further details on consultation undertaken can be found in the Consultation Report (**Application Document Ref. 7.1**).	

16.4 Cumulative Effects Assessment - Scoping and PEI Report Stage

16.4.1 An initial list of developments of potential relevance to the cumulative impact assessment was presented in the EIA Scoping Report (**Appendix 1A**) (ES Volume II). This list was then revised and updated to include additional developments as part of the PEI Report (Ref 16-6), submitted for formal consultation in September 2017 (Stage 2 of the cumulative effects assessment). Professional judgement was applied in generating the initial list of developments reported at the PEI Report stage, including updating the initial list to reflect the latest information available on other schemes available in the public domain. This list was subsequently reviewed and updated in consultation with the local planning authorities, including taking account of feedback through formal consultation. A revised short list of other schemes considered to be of relevance to the cumulative assessment (as at February 2019) is presented in **Section 16.5** of this chapter.

16.5 Cumulative Effects Assessment – ES Stage

16.5.1 Taking into account feedback provided in **Table 16-3**, the staged methodology advocated in the PINS Advice Note 17 (Ref 16-1) has been revisited and applied in this ES. It was also considered appropriate to revisit the methodology given the changes made to the Proposed Development design after statutory consultation, including removal from the Proposed Development of an outfall to the River Trent.

Stage 1: Establishing the ZOI and Identifying a Long List of 'Other Development'

16.5.2 Taking into account the staged approach of the PINS Advice Note 17 (Ref 16-5), Stage 1 involved re-establishing the Proposed Development's ZOI and identifying a long list of 'other development' and establishing their level of certainty (as discussed in **Section 16.3**), with levels of certainty defined as per **Table 16-1.**

16.5.3 An initial screening exercise (Stage 1) was undertaken to define an initial long list of potential schemes within the vicinity of the Proposed Development requiring consideration within the cumulative assessment. This process identified potential major developments within a 5km radius of the Proposed Development considered to be proportionate and a '*worst-case*' ZOI for the majority of technical disciplines (see **Table 16-2**). Available information on schemes identified was obtained, with details regarding each being provided in **Table 16-4**. The location of the '*other developments*' on the long list are shown in **Figure 16.1** (ES Volume III).

Table 16-4: Identification of 'Other Development' for the CEA (Stage 1 long list)

'Other development' details						Stage 1 (long list)	
ID	**Application Reference**	**Applicant for 'other development' and brief description**	**Approximate Distance from project**	**Status**	**Tier**	**Within ZOI?**	**Progress to Stage 2?**
1	*A quarry access road (16/00354/CDM)*	*Tarmac Trading Ltd* *Application to vary conditions 8 and 11 of planning permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the first 100,000 tonnes of mineral, thereafter the second stage shall provide for the full surfacing of the haul road along its entire length for the removal of the remaining mineral in the permitted reserve. Nottinghamshire County Council.* *Non-material amendment of details under Condition 8 for slight variation to quarry entrance northwards along Gainsborough Road and*	*300m south-east*	*Revised application approved 31/05/2016*	*Tier 1*	*Yes* *The quarry access road and wider mineral extraction site would fall within the ZOI for the majority of ES topics.*	*Yes*

'Other development' details						Stage 1 (long list)	
ID	**Application Reference**	**Applicant for 'other development' and brief description**	**Approximate Distance from project**	**Status**	**Tier**	**Within ZOI?**	**Progress to Stage 2?**
		adjustments to alignment of access road.		*Non-material amendment approved 26 September 2017 authorising haulage road in accordance with 'as built' drawing.*			
2	*Residential development of 61 dwellings (WLDC - 136309)*	*Beth/Robert Barton Iredale (Agent Simon Elliott Associates)* *Outline planning application to erect 61 dwellings - access to be considered and not reserved for subsequent applications.* *West Lindsey District Council*	*2.4km east*	*Application approved 12/12/18.*	*Tier 1*	*Falls within the ZOI for a number of topics scoped into ES.*	*Yes*
3	*Planning application for single cremator and chapel crematorium building with memorial facility, (WLDC - 136962)*	*West Lindsey District Council* *Public consultation on proposed Gainsborough Crematorium proposed between Lea and Knaith – current concept design includes chapel, crematorium, memorial gardens, car park and landscaping.*	*2.4km east*	*Application approved 28/06/18*	*Tier 1*	*Falls within the ZOI for a number of topics scoped into ES.*	*Yes*

'Other development' details						Stage 1 (long list)	
ID	**Application Reference**	**Applicant for 'other development' and brief description**	**Approximate Distance from project**	**Status**	**Tier**	**Within ZOI?**	**Progress to Stage 2?**
4	*N/A*	*Minerals Local Plan Policy M6.8 – Sturton-le-Steeple* *Nottinghamshire County Council*	*300m south-east*	*313ha of land allocated at Sturton-le-Steeple for sand and gravel extraction*	*Tier 3*	*Falls within the ZOI for a number of topics scoped into ES.*	*Yes*
5	*N/A*	*Minerals and Waste Local Plan m1.4 Lea Marsh* *Lincolnshire County Council*	*500m east*	*271ha of land at Lea Marsh Farm allocated for sand and gravel extraction*	*Tier 3*	*Falls within the ZOI for a number of topics scoped into ES.*	*Yes*
6	*Ash processing plant (NCC Application Number: 1/16/01441/CDM)*	*The Applicant* *Use of ash processing plant equipment (up to 175,000 tonnes per annum).* *Nottinghamshire County Council*	*Within the Site*	*Application approved 13/07/2017*	*Formerly Tier 1 (PEI Report stage)*	*Falls within the ZOI for all topics scoped into ES.*	*Yes (Decision at PEI Report stage)*
7	*49MW Battery Storage Facility (16/00954/FUL)*	*The Applicant* *49MW battery storage facility.* *Bassetlaw District Council*	*Within the Site*	*Application approved in September 2016*	*Formerly Tier 1 (Scoping stage)*	*Falls within the ZOI for all topics scoped into ES.*	*Yes (Decision at Scoping stage)*
8	*Sub-50MW Power Plant (West Burton D)*	*The Applicant* *Application for a Sub-50MW power plant* *Bassetlaw District Council*	*Within the Site*	*The Applicant has decided not to proceed with this Application.*	*Formerly Tier 1 (PEI Report stage)*	*Falls within the ZOI for all topics scoped into ES.*	*Yes (Decision at Scoping stage)*

'Other development' details						Stage 1 (long list)	
ID	**Application Reference**	**Applicant for 'other development' and brief description**	**Approximate Distance from project**	**Status**	**Tier**	**Within ZOI?**	**Progress to Stage 2?**
9	*West Burton Power Station and Bole Ings Ash Disposal Site - NCC Application Ref: v/3807*	*The Applicant* *Application to vary conditions 11,13,16,37 and 54 of planning permission 1/14/00038/CDM for maximum ash recovery revised method statement; Deposition of PFA to cease no later than 31 December 2025; Landscape and aftercare scheme*	*100m east of proposed construction laydown area*	*Application approved 05/06/18*	*Tier 1*	*Yes for majority of topics*	*Yes*
10	*Mixed-use development including 220 dwellings (WLDC – 137763)*	*Leonard Wright Investments Developments Ltd* *Planning application to erect 220no. dwellings to include commercial uses A1 and A3.* *West Lindsey District Council*	*1.8km north-west*	*Application approved 28/09/18*	*Tier 1*	*Falls within the ZOI for a number of topics scoped into ES.*	*Yes*
11	*Residential development of 16 dwellings* *(WLDC – 138308)*	*Mr T Suben* *Planning application for residential development of 16no. dwellings*	*2.2km north-west*	*Application submitted 05/09/18*	*Tier 1*	*Falls within the ZOI for a number of topics scoped into ES.*	*Yes*

Stage 2: Identify Short List of 'Other Development' for the CEA

16.5.4 Following Stage 1, PINS Advice Note 17 (Ref 16-5) requires the Applicant to identify a short list of other developments for assessment. The Stage 1 long list **Table 16-4** was subsequently re-screened based on the ZOI for each of the technical disciplines considered within this ES (as detailed in **Table 16-2**). In addition to the ZOI threshold criteria, the geographical and temporal scope of the 'other development' was considered in relation to the geographical and temporal scope of the Proposed Development, and professional judgement was applied to identify the short list of development to be considered further within Stage 3. Information on the '*other developments*' within the short list is detailed in **Table 16-5**.

16.5.5 **Table 16-5** indicates that the following developments were short-listed for consideration within the CEA (refer to **Figure 16.2** (ES Volume III)):

- ID1 - quarry access road and wider mineral extraction site (16/00354/CDM);
- ID2 - residential development of 61 dwellings (West Lindsey District Council (WLDC) - 136309) (transport, air quality, and ecology (effects on Lea Marsh Site of Special Scientific Interest (SSSI)) only);
- ID10 - residential development of 16 dwellings (WLDC – 138308); and
- ID11 - mixed use development including 220 dwellings (WLDC – 137763).

16.5.6 It is noted that four developments by the Applicant (ID6; ID7; ID8; ID9) including three that had previously been considered for inclusion in the CEA at the PEI Report stage (Ref 16-6)) have now been scoped out of the CEA on the basis that they have:

- recently become operational and are included in the reported baseline for relevant technical **Chapters 6-15**; or
- are no longer being progressed.

16.5.7 Where other developments have not been short-listed, this has been on the basis of professional judgement by relevant discipline leads, using available information, in order to determine whether cumulatively, effects of the Proposed Development could become significant when added to those of the particular scheme.

Table 16-5: Identification of 'Other Development' for the CEA (Stage 2 short list)

ID	ID	Screening for detailed CEA			
		Overlap in temporal scope?	**Scale and nature of development likely to have a significant effect?**	**Other factors**	**Progress to Stage 3/4?**
1	*A quarry access road (16/00354/CDM)*	*Refer to paragraph 16.5.11 for current status of proposal.* *Construction of quarry access road completed in 2017 and therefore development authorized by this consent has now commenced (quarry access road) but the wider quarrying operation has not yet commenced.* *Permission states that all mineral operations to cease by 31.12.35 with restoration completed by 31.9.36, or within one year after the cessation of the mineral extraction, whichever is sooner.*	*Yes* *The environmental assessments accompanying the quarry access road and wider mineral extraction site applications note the potential for significant environmental effects that merit consideration within the CEA.*	*n/a*	***Yes***
2	*Residential development of 61 dwellings (WLDC - 136309)*	*Potential overlap with construction phase as reserved matters applications required within 3 years (12/12/21).*	*Not anticipated, based upon details submitted. Potential for cumulative effects on traffic and transport and ecology (Lea Marsh SSSI) noted as requiring further investigation.*	*n/a*	***Yes** (Transport and Air Quality/Ecology for effects on Lea Marsh SSSI only)*
3	*Planning application for*	*Potential overlap with*	*Unlikely based upon review of the*	*n/a*	*No*

ID	ID	Screening for detailed CEA			
		Overlap in temporal scope?	Scale and nature of development likely to have a significant effect?	Other factors	Progress to Stage 3/4?
	single cremator and chapel crematorium building with memorial facility, (WLDC - 136962)	*construction and/or operational phase as reserved matters applications required within 3 years. The applicant states that the new facility is anticipated to open January 2020.*	*submitted planning application. Cumulative noise and vibration effects are unlikely due to the distance from the Proposed Development. With regards to air quality, the Emissions Assessment submitted with the application concludes that air quality impacts as a result of the crematorium operations were considered to be not significant (In accordance with Institute of Air Quality Management (IAQM) guidelines.*		
4	*N/A*	*No*	*Unlikely as no applications currently proposed within area except 16/00354/CDM (quarry access road)) – ID 1 above.*	*n/a*	*No*
5	*N/A*	*No*	*Unlikely as no applications currently proposed within area.*	*n/a*	*No*
6	*Ash processing plant (NCC Application Number: 1/16/01441/CDM)*	*No - operation commenced 2017*	*As the development has now commenced, it is considered part of the current baseline and not taken further for CEA.*	*n/a*	*No – considered as part of current baseline in all relevant technical chapters.*
7	*49MW Battery Storage Facility (16/00954/FUL)*	*No - operation commenced 2018*	*As the development became operational in 2018, it is considered part of the current baseline and not*	*n/a*	*No – considered as part of current baseline in all relevant technical*

ID	ID	Screening for detailed CEA			
		Overlap in temporal scope?	Scale and nature of development likely to have a significant effect?	Other factors	Progress to Stage 3/4?
			taken further for CEA.		*chapters.*
8	*Sub-50MW Power Plant (West Burton D)*	*No – project terminated*	*As the application for this development was discontinued prior to submission of an application, it has been excluded from the updated CEA.*	*n/a*	*No – not considered further due to the project not currently being progressed.*
9	*West Burton Power Station and Bole Ings Ash Disposal Site - NCC Application Ref: v/3807*	*This application represents a variation of conditions of the extant planning permission 1/14/00038/CDM (issued 1 August 2014).*	*No – the application relates to variation of conditions to extend the duration for disposal from 2020 - 2025; increase the maximum recovery allowed and enable ash processing to take place on site. NCC EIA Screening Opinion confirmed significant effects on the environment are not likely and EIA not required.*	*n/a*	*No – the continued operation of Bole Ings Ash Disposal site has been considered as part of future baseline in all relevant technical chapters.*
10	*Mixed-use development including 220 dwellings (WLDC – 137763)*	*Potential overlap with construction phase development to commence within 3 years (28/09/21).*	*Not anticipated, based upon details submitted. Potential for cumulative effects on traffic and transport and air quality.*	*n/a*	***Yes***
11	*Residential development of 16 dwellings (WLDC – 138308)*	*Potential overlap – timescale for development unknown and could overlap*	*Not anticipated, based upon details submitted. Potential for cumulative effects on traffic and transport and air quality*	*n/a*	***Yes***

Stage 3: Information Gathering

16.5.8 Following an initial information search on the short-listed developments at Stage 2, more detailed information was obtained for those short-listed developments as detailed in **Table 16-5**. In line with PINS Advice Note 17 (Ref 16-5), this included searching for and noting the following information, where available:

- development design and location information;
- construction, operation and decommissioning information; and
- any accompanying environmental assessment information detailing baseline data and effects arising from other development.

16.5.9 As discussed in **Section 16.4**, the information gathered at this stage was primarily from the public domain (including BDC, WLDC and Nottinghamshire County Council (NCC) planning portals and in some cases direct liaison with relevant applicants and statutory bodies).

16.5.10 Information available for each of the schemes carried forward for CEA is described below:

- ID1 - Quarry access road (16/00354/CDM):
  - decision notice;
  - delegated report;
  - plans and drawings;
  - hydrological and hydrogeological assessment;
  - surface water drainage and monitoring report;
  - water vole survey report; and
  - information provided on Sturton Ward website (Ref 16-8) relating to the quarry proposals.
- ID2 - Residential development of 61 dwellings (WLDC - 136309):
  - planning statement;
  - plans and drawings;
  - ecology report and bat survey report; and
  - transport assessment.
- ID10 - Mixed-use development including 220 dwellings (WLDC – 137763):
  - decision notice;
  - viability assessment
  - plans and drawings;
  - transport assessment scoping report; and
  - ecology report.

- ID11 - Residential development of 16 dwellings (WLDC – 138308):
  - design and access statement; and
  - plans and drawings.

16.5.11 In relation to ID1 - the quarry access road (16/00354/CDM), Tarmac Trading Ltd has commenced development of the access road including gaining approval from NCC for a non-material amendment to detail of the access road, but at the time of writing, no further details are available in relation to commencement of mineral extraction at the site. The most recent project update on Sturton-le-Steeple Parish Council website (Ref 16-8) (dated 31 October 2017) states:

"Tarmac cannot say when work will commence, and, therefore, when extraction will begin. Strategic issues related to the future demand for sand and gravel will influence the decision. The existing Finningley Quarry is nearing the end of its productive life and alternative sources will be required. However, the Sturton Quarry is only one of the potential sources. At present Tarmac has not decided whether or not Sturton Quarry will be fully or partly developed, and in which time scale."

Stage 4: Assessment

16.5.12 **Section 16.6** presents the results from the detailed CEA conducted for the four developments scoped into the CEA (all Tier 1 developments). **Section 16.6** considers in turn each '*scoped in*' environmental discipline and assesses whether effects associated with each short-listed development would be able to interact with the effects associated with the Proposed Development in a manner that has the ability to generate potentially significant cumulative effects.

16.6 Cumulative Effects Assessment (Stage 4)

Air Quality

16.6.1 An assessment of potential cumulative air quality effects due to the Proposed Development, ID1 - the quarry access road and three residential developments (ID2; ID10 and ID11) is presented in **Table 16-6**.

Table 16-6: Assessment of potential cumulative effects – Air Quality

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Air Quality						
1	Tier 1	A quarry access road (16/00354/CDM)	Tarmac Trading Ltd Application to vary conditions 8 and 11 of planning permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the	The volume of HGVs associated with construction of the Proposed Development on the network would be at its maximum of 112 two-way daily vehicle movements (56 in and 56 out) at the peak of construction. This could potentially coincide with traffic flows associated with the quarry (192 HGVs per average day) on Gainsborough Road/Sturton Road during the construction phase of the Proposed Development. A screening assessment has been undertaken to quantify the cumulative contribution of these flows to annual mean concentrations of nitrogen dioxide and particulate matter (PM_{10} and $PM_{2.5}$) at sensitive locations adjacent to Gainsborough Road/Sturton Road (R5 and R11). The screening assessment identified that the cumulative contribution of the emissions would increase annual mean concentrations of NO_2, PM_{10} and $PM_{2.5}$ by 1.3 µg/m^3, 0.1 µg/m^3 and <0.1 µg/m^3 respectively at both receptors considered.	Other than the mitigation measures already proposed (refer to **Chapter 6:** Air Quality), no further mitigation measures to reduce potential cumulative air quality effects are required.	No significant residual effects are anticipated, as reported in **Chapter 6:** Air Quality, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			first 100,000 tonnes of mineral, thereafter the second stage shall provide for the full surfacing of the haul road along its entire length for the removal of the remaining mineral in the permitted reserve. Nottinghamshire County Council	Such a cumulative impact at locations where total pollutant concentrations are well below the National Air Quality Objective Values (background concentrations of 11µg/m^3 for NO_2, 15µg/m^3 for PM_{10} and 10 for $PM_{2.5}$ µg/m^3) would not constitute an effect that is considered significant (following current Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) guidance). It follows that potential cumulative effects during the Proposed Development operational phase would also not be significant.		
2	Tier 1	Residential development of 61 dwellings (WLDC - 136309)	Beth/Robert Barton Iredale (Agent Simon Elliott Associates) Outline planning application to erect 61	The assessment has considered the potential for cumulative construction dust and operational NO_2 impacts (traffic exhaust emissions from the residential development and process emissions from the Proposed Development) on Lea Marsh SSSI. The effects of construction dust on the SSSI from the proposed residential development are scoped	Other than the mitigation measures already proposed (as reported in **Chapter 6:** Air Quality), no further mitigation measures to	No significant residual effects are anticipated, as reported in **Chapter 6:** Air Quality,

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			dwellings - access to be considered and not reserved for subsequent applications. West Lindsey District Council	out as the SSSI lies more than 350m from the residential development (therefore outside the ZOI). In addition, the SSSI is too distant from the Proposed Development to be susceptible to construction disturbance impacts (refer to **Chapter 6:** Air Quality). Thus air quality cumulative effects on the SSSI would be avoided. The effects from traffic associated with the residential development operation are screened out, as the SSSI lies more than 200m from the roadside that would service the development (A156). The air quality assessment of impacts at the Proposed Development opening year has assumed that Emission Limit Values (ELVs) would be met for the operational plant as required under the Industrial Emissions Directive (IED) and in accordance with the use of Best Available Techniques (BAT) under the Environmental Permitting regime. The assessment indicates that the SSSI is too distant from the Proposed Development to be susceptible to operational disturbance impacts (refer to **Chapter 6:** Air Quality). Thus air quality cumulative effects on the SSSI would be avoided.	reduce potential cumulative air quality effects are required.	therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
10	Tier 1	Mixed-use development including 220 dwellings (WLDC – 137763)	Wright Investments Developments Ltd Planning application to erect 220no. dwellings to include commercial uses A1 and A3. West Lindsey District Council	The assessment has considered the potential for cumulative construction dust and operational NO_2 impacts (traffic exhaust emissions from the residential development and process emissions from the Proposed Development) on Lea Marsh SSSI. The effects of construction dust on the SSSI from the proposed residential development are scoped out as the SSSI lies more than 350m from the residential development (therefore outside the ZOI). In addition, the SSSI is too distant from the Proposed Development to be susceptible to construction disturbance impacts (refer to **Chapter 6:** Air Quality). Thus air quality cumulative effects on the SSSI would be avoided. The effects from traffic associated with the residential development operation are screened out, as the SSSI lies more than 200m from the roadside that would service the development (A156). The air quality assessment of impacts at the Proposed Development opening year has assumed that Emission Limit Values (ELVs) would be met for the operational plant as required under the Industrial Emissions Directive	Other than the mitigation measures already proposed (as reported in **Chapter 6:** Air Quality), no further mitigation measures to reduce potential cumulative air quality effects are required.	No significant residual effects are anticipated, as reported in **Chapter 6:** Air Quality, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
				(IED) and in accordance with the use of BAT under the Environmental Permitting regime. The assessment indicates that the SSSI is too distant from the Proposed Development to be susceptible to operational disturbance impacts (refer to **Chapter 6:** Air Quality). Thus air quality cumulative effects on the SSSI would be avoided.		
11	Tier 1	Residential development of 16 dwellings (WLDC – 138308)	Mr T Suben Planning application for residential development of 16no. dwellings	The assessment has considered the potential for cumulative construction dust and operational NO_2 impacts (traffic exhaust emissions from the residential development and process emissions from the Proposed Development) on Lea Marsh Site of SSSI. The effects of construction dust on the SSSI from the proposed residential development are scoped out as the SSSI lies more than 350m from the residential development (therefore outside the ZOI). In addition, the SSSI is too distant from the Proposed Development to be susceptible to construction disturbance impacts (refer to **Chapter 6:** Air Quality). Thus air quality cumulative effects on the SSSI would be avoided.	Other than the mitigation measures already proposed (as reported in **Chapter 6:** Air Quality), no further mitigation measures to reduce potential cumulative air quality effects are required.	No significant residual effects are anticipated, as reported in **Chapter 6:** Air Quality, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
				The effects from traffic associated with the residential development operation are screened out, as the SSSI lies more than 200m from the roadside that would service the development (A156). The air quality assessment of impacts at the Proposed Development opening year has assumed that Emission Limit Values (ELVs) would be met for the operational plant as required under the Industrial Emissions Directive (IED) and in accordance with the use of BAT under the environmental permitting regime. The assessment indicates that the SSSI is too distant from the Proposed Development to be susceptible to operational disturbance impacts (refer to **Chapter 6:** Air Quality). Thus air quality cumulative effects on the SSSI would be avoided.		

Traffic and Transport

16.6.2 An assessment of potential cumulative traffic and transport effects due to the Proposed Development, ID1 - the quarry access road and three residential developments (ID2; ID10 and ID11) is presented **Table 16-7**.

Table 16-7: Assessment of potential cumulative effects – Traffic and Transport

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Traffic and Transport						
1	Tier 1	A quarry access road (16/00354/CDM)	Tarmac Trading Ltd Application to vary conditions 8 and 11 of planning permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the first 100,000 tonnes of mineral, thereafter the second stage shall provide for the full surfacing of the haul road along its entire length for the removal	The volume of HGVs associated with construction of the Proposed Development on the network would be at its maximum of 112 two-way daily vehicle movements (56 in and 56 out) at the peak of construction. This could potentially coincide with traffic flows associated with the quarry (192 HGVs per average day) on Gainsborough Road/Sturton Road during the construction phase of the Proposed Development. Traffic from this committed development has been incorporated into the future year analysis of traffic and transport effects. Therefore, the cumulative traffic and transportation effects would be as reported for the Proposed Development, as reported in **Chapter 7**: Traffic and Transport (negligible and therefore	Other than the mitigation measures already proposed (as reported in **Chapter 7**: Traffic and Transport), no further mitigation measures to reduce potential cumulative traffic and transport effects are required.	No significant residual effects are anticipated, as reported in **Chapter 7**: Traffic and Transport, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			of the remaining mineral in the permitted reserve. Nottinghamshire County Council	not significant).		
2	Tier 1	Residential development of 61 dwellings (WLDC - 136309)	Beth/Robert Barton Iredale (Agent Simon Elliott Associates) Outline planning application to erect 61 dwellings - access to be considered and not reserved for subsequent applications. West Lindsey District Council	During construction, the residential development would result in 34 and 33 two-way vehicle trips during the AM and PM peak hours. Traffic flows from this committed development have been incorporated into the future year analysis of traffic and transport effects. Therefore, the cumulative traffic and transportation effects would be as reported for the Proposed Development, as reported in **Chapter 7**: Traffic and Transport (negligible and therefore not significant).	Other than the mitigation measures already proposed (as reported in **Chapter 7**: Traffic and Transport), no further mitigation measures to reduce potential cumulative traffic and transport effects are required.	No significant residual effects are anticipated, as reported in **Chapter 7**: Traffic and Transport, therefore no cumulative effects are anticipated.
10	Tier 1	Mixed-use development including 220	Wright Investments Developments Ltd Planning application to erect 220no. dwellings	No Transport Assessment has been submitted as part of the consented application and instead forms part of a planning condition.	Other than the mitigation measures already proposed (as reported in	No significant residual effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
		dwellings (WLDC – 137763)	to include commercial uses A1 and A3.	Condition 7 of the Decision Notice states that '*no development shall take place until a Transport Assessment has been submitted to and approved in writing by the Local Planning Authority*'.	**Chapter 7:** Traffic and Transport), no further mitigation measures to reduce potential cumulative traffic and transport effects are required.	
11	Tier 1	Residential development of 16 dwellings (WLDC – 138308)	Mr T Suben Planning application for residential development of 16no. dwellings.	Vehicle movements associated with the development are not predicted to generate any significant levels of traffic. Therefore, the cumulative traffic and transportation effects would be as reported for the Proposed Development, as reported in **Chapter 7**: Traffic and Transport (negligible and therefore not significant).	Other than the mitigation measures already proposed (as reported in **Chapter 7:** Traffic and Transport), no further mitigation measures to reduce potential cumulative traffic and transport effects are required.	No significant residual effects are anticipated, as reported in **Chapter 7:** Traffic and Transport, therefore no cumulative effects are anticipated.

Noise and Vibration

16.6.3 An assessment of potential cumulative noise and vibration effects due to the Proposed Development and the ID1 - quarry access road is presented in **Table 16-8**.

Table 16-8: Assessment of potential cumulative effects – Noise and Vibration

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Noise and Vibration						
1	Tier 1	A quarry access road (16/00354/CDM)	Tarmac Trading Ltd Application to vary conditions 8 and 11 of planning permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the first 100,000 tonnes of mineral, thereafter the second stage shall provide for the full surfacing of the	As indicated in **Chapter 8:** Noise and Vibration, noise associated with construction activities and construction traffic due to the Proposed Development would have a negligible effect on noise sensitive receptors. Similarly, operational traffic effects would also generate negligible noise effects. It follows that there is no potential for cumulative noise effects as related to these noise sources due to the quarry access road development. With regard to the cumulative operational noise effects of the two schemes, the Proposed Development would be designed to meet environmental noise limits based upon standards and guidance including BS 4142:2017 (Ref 16-9) as set out in **Chapter 8**: Noise and Vibration. Assuming that noise limits are applied, this would result in negligible noise and	Other than the mitigation measures already proposed (as reported in **Chapter 8**: Noise and Vibration), no further mitigation measures to reduce potential cumulative noise and vibration effects are required.	No significant residual effects are anticipated, as reported in **Chapter 8**: Noise and Vibration, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			haul road along its entire length for the removal of the remaining mineral in the permitted reserve. Nottinghamshire County Council	vibration impacts compared with the pre-existing baseline. Therefore, there would be no potential for operational cumulative effects with any noise or vibration associated with the quarry access road.		

Ecology

16.6.4 An assessment of potential cumulative ecology effects due to the Proposed Development, ID1 - the quarry access road and three residential developments (ID2; ID10 and ID11) is presented in **Table 16-9**.

Table 16-9: Assessment of potential cumulative effects – Ecology

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Ecology						
1	Tier 1	A quarry access road (16/00354/CDM)	Tarmac Trading Ltd Application to vary conditions 8 and 11 of planning	Ecological features within the ZOI of the Proposed Development that could potentially be affected by the quarry development are limited to	Other than the mitigation measures already proposed (as reported in **Chapter 9:**	No significant residual effects are anticipated, as reported in

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the first 100,000 tonnes of mineral, thereafter the second stage shall provide for the full surfacing of the haul road along its entire length for the removal of the remaining mineral in the permitted reserve. Nottinghamshire	the Local Wildlife Sites (LWS) to the south of the West Burton Power Station site, including West Burton Meadow LWS, Burton Round Ditch LWS and Mother Drain Upper Ings LWS. The ecological impact assessment for the original quarry application (and updates to support subsequent variations to the permission) concluded that there would be no significant adverse effects on these sites with the implementation of measures to mitigate potential impacts from dust, noise and hydrological changes. These mitigation measures were secured through a series of planning conditions and a Section 106 agreement. Potential effects on these LWSs as a result of the Proposed Development were scoped out of the assessment based on distance and the presence of buffers (see **Chapter 9:** Ecology).	Ecology), no further mitigation measures to reduce potential cumulative ecology effects are required.	**Chapter 9:** Ecology, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			County Council.	Given the above, there is no potential for cumulative effects on these designated sites.		
2	Tier 1	Residential development of 61 dwellings (WLDC - 136309)	Beth/Robert Barton Iredale (Agent Simon Elliott Associates) Outline planning application to erect 61 dwellings - access to be considered and not reserved for subsequent applications. West Lindsey District Council	The only potential ecological effects that could arise from this residential development would be potential air quality effects on the Lea Marsh SSSI and Lea Meadow LWS. The residential development is within the Impact Risk Zone for Lea Marsh SSSI, but the small size of the development falls below the threshold for which consideration of impacts on the SSSI is necessary (100 units or more). An air quality impact assessment was not required to support the planning application. **Chapter 9:** Ecology indicates that the Proposed Development would have a neutral effect upon the Lea Marsh SSSI and the Lea Meadow LWS. Given the above, there is no potential for cumulative effects on these designated sites.	Other than the mitigation measures already proposed (as reported in **Chapter 9:** Ecology), no further mitigation measures to reduce potential cumulative ecology effects are required.	No significant residual effects are anticipated, as reported in **Chapter 9:** Ecology, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
10	Tier 1	Mixed-use development including 220 dwellings (WLDC – 137763)	Wright Investments Developments Ltd Planning application to erect 220no. dwellings to include commercial uses A1 and A3.	Ecological features within the ZOI of the Proposed Development that could potentially be affected by the residential development are the Lea Marsh SSSI and five LWS (Bole Ings Flood Pasture, Saundby Ponds, Bole Ings Drain, Bole Ings and Lea Meadow). The only potential ecological effects that could arise from this residential development would be potential air quality effects on the Lea Marsh SSSI and the five LWS. The residential development is within the Impact Risk Zone for Lea Marsh SSSI and is above the threshold for which consideration of impacts on the SSSI is necessary (100 units or more); however, the ecology report for the application concludes that due to the distance from the development area the SSSI is not expected to be impacted by works. In addition, an air quality impact assessment was not required to support the planning application. **Chapter 9:** Ecology indicates that	Other than the mitigation measures already proposed (as reported in **Chapter 9:** Ecology), no further mitigation measures to reduce potential cumulative ecology effects are required.	No significant residual effects are anticipated, as reported in **Chapter 9:** Ecology, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
				the Proposed Development would have a neutral effect upon the Lea Marsh SSSI and the five LWS. Given the above, there is no potential for cumulative effects on these designated sites.		
11	Tier 1	Residential development of 16 dwellings (WLDC – 138308)	Mr T Suben Planning application for residential development of 16no. dwellings.	Ecological features within the ZOI of the Proposed Development that could potentially be affected by the residential development are the Lea Marsh SSSI and three LWS (Bole Ings Flood Pasture, Saundby Ponds and Bole Ings Drain). The only potential ecological effects that could arise from this residential development would be potential air quality effects on the SSSI and the three LWS. The residential development is within the Impact Risk Zone for Lea Marsh SSSI, but the small size of the development falls below the threshold for which consideration of impacts on the SSSI is necessary (100 units or more). An air quality impact assessment was not required to	Other than the mitigation measures already proposed (as reported in **Chapter 9:** Ecology), no further mitigation measures to reduce potential cumulative ecology effects are required.	No significant residual effects are anticipated, as reported in **Chapter 9:** Ecology, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
				support the planning application. **Chapter 9**: Ecology indicates that the Proposed Development would have a neutral effect upon the Lea Marsh SSSI and the Lea Meadow LWS. Given the above, there is no potential for cumulative effects on these designated sites.		

Landscape and Visual Amenity

16.6.5 An assessment of potential cumulative landscape and visual effects due to the Proposed Development and ID1 - the quarry access road and three residential developments (ID2; ID10 and ID11) is presented detailed in **Table 16-10**.

Table 16-10: Assessment of potential cumulative effects – Landscape and Visual Amenity

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Landscape and Visual Assessment						
1	Tier 1	A quarry access road (16/00354/C	Tarmac Trading Ltd Application to vary conditions 8 and 11	Cumulative effects on landscape and visual amenity have been assessed	Other than the mitigation measures already proposed (as reported in **Chapter 10:**	No significant residual

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
		DM)	of planning permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the first 100,000 tonnes of mineral, thereafter the second stage shall provide for the full surfacing of the haul road along its entire length for the removal of the remaining mineral in the permitted reserve. Nottinghamshire	during construction of the quarry access and construction of the Proposed Development. This provides a worst-case scenario for the assessment of potential cumulative effects. Assessment at operation assumes that both developments are fully operational. It is assessed that overall, anticipated cumulative landscape and visual effects are likely to remain the same as those reported for the Proposed Development in isolation. This is because a scheme of mitigation has been agreed by NCC for the quarry, including the access road (Ref 16-10) to reduce the significance on visual amenity at viewpoints on the surrounding network of footpaths. On this basis, NCC has concluded that the development would not have	Landscape and Visual Amenity), no further mitigation measures to reduce potential cumulative effects of the Proposed Development are considered possible or necessary. Mitigation measures being proposed by the quarry access road developer set out in a Landscape Planting Specification and Management Plan (Ref 16-10), including bunding, planting of hedgerows and/or trees would mitigate visual effect resulting from construction and operation of the quarry access road in isolation. This mitigation has not been taken into account in the assessment of effects presented within **Chapter 10**: Landscape and Visual Amenity, but may provide further screening of views of the Proposed Development from Viewpoint 9 (junction of PRoW at Footpath Sturton-le-Steeple FP17, Restricted Byway Sturton-le-	cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			County Council	a significantly detrimental landscape or visual impact.	Steeple RB32, Common Lane) and VP10 (junction of Bridleway Sturton-le-Steeple BW13, footpath Sturton-le-Steeple FP40 and Sturton-le-Steeple FP39). It is considered that additional mitigation beyond that proposed by the Applicant and the quarry developer for their respective schemes is not required to address potential cumulative effects.	
2	Tier 1	Residential development of 61 dwellings (WLDC - 136309)	Beth/Robert Barton Iredale (Agent Simon Elliott Associates) Outline planning application to erect 61 dwellings - access to be considered and not reserved for subsequent applications. West Lindsey District Council	It is assessed that overall, anticipated cumulative landscape and visual effects are likely to remain the same as those reported for the Proposed Development in isolation. This is because of the lack of inter-visibility of both the Proposed Development and the residential site due to its location adjoining residential development and screening by built form and vegetation	Other than the mitigation measures already proposed (as reported in **Chapter 10:** Landscape and Visual Amenity), no further mitigation measures to reduce potential cumulative effects of the Proposed Development are considered possible or necessary.	No significant residual cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
				and that the residential development forms a minor extension to the existing residential area.		
10	Tier 1	Mixed-use development including 220 dwellings (WLDC – 137763)	Wright Investments Developments Ltd Planning application to erect 220no. dwellings to include commercial uses A1 and A3.	It is assessed that overall, anticipated cumulative landscape and visual effects are likely to remain the same as those reported for the Proposed Development in isolation. This is because of the lack of inter-visibility of both the Proposed Development and the residential site due to screening by built form and vegetation and that the residential development forms a minor extension to the existing residential area.	Other than the mitigation measures already proposed (as reported in **Chapter 10:** Landscape and Visual Amenity), no further mitigation measures to reduce potential cumulative effects of the Proposed Development are considered possible or necessary.	No significant residual cumulative effects are anticipated.
11	Tier 1	Residential development of 16 dwellings	Mr T Suben Planning application for residential development of 16no. dwellings	It is assessed that overall, anticipated cumulative landscape and visual effects are likely to remain the same as those reported for the Proposed Development in isolation. This is because of	Other than the mitigation measures already proposed (as reported in **Chapter 10:** Landscape and Visual Amenity), no further mitigation measures to reduce potential cumulative effects of the Proposed	No significant residual cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
				the lack of inter-visibility of both the Proposed Development and the residential site due to screening by built form and vegetation and that the residential development forms a minor extension to the existing residential area.	Development are considered possible or necessary.	

Ground Conditions and Hydrogeology

16.6.6 An assessment of potential cumulative ground conditions and hydrogeological effects due to the Proposed Development and ID1 - the quarry access road is presented in **Table 16-11**.

Table 16-11: Assessment of potential cumulative effects – Ground Conditions and Hydrogeology

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Ground Conditions and Hydrogeology						
1	Tier 1	A quarry access road (16/00354/CDM)	Tarmac Trading Ltd Application to vary conditions 8 and 11 of	Quarry operation will involve dewatering. A hydrogeological impact assessment was completed and submitted in	Other than the mitigation measures already proposed (as reported in **Chapter**	No significant residual effects are anticipated, as reported in

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			planning permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the first 100,000 tonnes of mineral, thereafter the second stage shall provide for the full surfacing of the haul road along its entire length for the removal of the remaining mineral in the permitted reserve. Nottinghamshire County Council	support of the ES for the quarry. The groundwater flow beneath the quarry area was assessed as being towards the northeast and the River Trent. Based on the results of preliminary modelling in **Chapter 11:** Ground Conditions and Hydrogeology, the zone of dewatering influence is expected to extend approximately 85m from the active workings, and as such would not impact groundwater levels beneath the Proposed Development, thus avoiding the potential for cumulative effects.	**11:** Ground Conditions, Hydrology and Hydrogeology), no further mitigation measures to reduce potential cumulative ground conditions and hydrogeological effects are required.	**Chapter 11:** Ground Conditions and Hydrogeology, therefore no cumulative effects are anticipated.

16.6.7 An assessment of potential cumulative flood risk, hydrological and water resource effects due to the Proposed Development and ID1 - the quarry access road is presented in **Table 16-12**.

Table 16-12: Assessment of potential cumulative effects – Flood Risk, Hydrology and Water Resources

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Flood Risk, Hydrology and Water Resources						
1	Tier 1	A quarry access road (16/00354/CDM)	Tarmac Trading Ltd Application to vary conditions 8 and 11 of planning permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the first 100,000 tonnes of mineral, thereafter the second stage	The ES for the quarry access road and associated development confirms that a sustainable site drainage and containment system will be installed at the start of construction to avoid impacts on water quality, and suitable methods are also proposed for the operation of the development to treat waste water on-site and discharge surface water runoff the River Trent/Mother Drain/New Ings Drain to avoid impacts on water resource receptors. With these measures and the measures proposed to	Other than the mitigation measures already proposed (as reported in **Chapter 12:** Flood Risk, Hydrology and Water Resources), no further mitigation measures to reduce potential cumulative water effects are required.	No significant residual effects are anticipated, as reported in **Chapter 12:** Flood Risk, Hydrology and Water Resources, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			shall provide for the full surfacing of the haul road along its entire length for the removal of the remaining mineral in the permitted reserve. Nottinghamshire County Council	mitigation potential flood risk, hydrological and water resource effects due to the Proposed Development (refer to **Chapter 12:** Flood Risk, Hydrology and Water Resources), cumulative effects would be avoided.		

Socio-economics

16.6.8 An assessment of potential cumulative socio-economic effects due to the Proposed Development and ID1 - the quarry access road is presented in **Table 16-13**.

Table 16-13: Assessment of potential cumulative effects – Socio-economic Assessment

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Socio-economic Assessment						
1	Tier 1	A quarry access road	Tarmac Trading Ltd Application to vary	The magnitude of the potential socio-economic impact due to the	No mitigation measures are	No significant residual effects

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
		(16/00354/CDM)	conditions 8 and 11 of planning permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the first 100,000 tonnes of mineral, thereafter the second stage shall provide for the full surfacing of the haul road along its entire length for the removal of the remaining mineral in the permitted	quarry access road development is considered to be very low, with construction employment generated representing a small fraction of the local construction labour pool. Like the Proposed Development, the quarry access road is anticipated to result in a negligible beneficial short-term employment effect on the local economy. Cumulatively, the effect is expected to remain the same as for the Proposed Development in isolation (negligible beneficial) and therefore not significant. The nature of the quarry project suggests no operational employment would be generated, and thus potential cumulative socio-economic effects would not be apparent.	proposed.	are anticipated, as reported in **Chapter 13:** Socio-economics, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			reserve. Nottinghamshire County Council			

Cultural Heritage

16.6.9 An assessment of potential cumulative cultural heritage effects due to the Proposed Development and the quarry access road is presented in **Table 16-14**.

Table 16-14: Assessment of potential cumulative effects – Cultural Heritage

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Cultural Heritage						
1	Tier 1	A quarry access road (16/00354/CDM)	Tarmac Trading Ltd Application to vary conditions 8 and 11 of planning permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates	The proposed quarry access road and the Proposed Development would not collectively impact upon the same cultural heritage assets. As such, cumulative effects upon archaeology or built heritage would be avoided.	Other than the mitigation measures already proposed (as reported in **Chapter 14:** Cultural Heritage), no further mitigation measures to reduce potential cumulative cultural heritage	No significant residual effects are anticipated, as reported in **Chapter 14:** Cultural Heritage, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the first 100,000 tonnes of mineral, thereafter the second stage shall provide for the full surfacing of the haul road along its entire length for the removal of the remaining mineral in the permitted reserve. Nottinghamshire County Council		effects are required.	

Sustainability, Waste and Climate Change

16.6.10 An assessment of potential cumulative sustainability, waste and climate change effects due to the Proposed Development and the quarry access road is presented in **Table 16-15**.

Table 16-15: Assessment of potential cumulative effects – Sustainability, Waste and Climate Change

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Sustainability, Waste and Climate Change						
1	Tier 1	A quarry access road (16/00354/CDM)	Tarmac Trading Ltd Application to vary conditions 8 and 11 of planning permission 1/46/11/00002/R to enable the quarry access road to be constructed in two stages. The initial stage incorporates the construction of a 500m section of bound surface adjacent to Gainsborough Road which shall be used for the removal of the first 100,000 tonnes of mineral, thereafter the second stage shall provide for the full surfacing of the haul road along its entire	Development of the quarry access road would result in a minor increase in total greenhouse gas (GHG) emissions in-combination with the Proposed Development. It is anticipated that GHG emissions from the construction and operation of the access road would be similar to those associated with the Proposed Development. The Proposed Development design is based on BAT which aims to minimise impacts on air quality, GHG emissions, energy and water use. The overall GHG effect of both projects is likely to be same as that for the Proposed Development in isolation, as reported in **Chapter 15:** Sustainability, Waste and Climate Change. The effects associated with waste have been assessed during construction and operation of the quarry access road and during construction and operation of the Proposed Development. It is anticipated that low levels of waste would be produced during construction and	Other than the mitigation measures already proposed (as reported in **Chapter 15:** Sustainability, Waste and Climate Change), no further mitigation measures to reduce potential cumulative sustainability and climate change effects are required.	No significant residual effects are anticipated, as reported in **Chapter 15:** Sustainability, Waste and Climate Change, therefore no cumulative effects are anticipated.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
			length for the removal of the remaining mineral in the permitted reserve. Nottinghamshire County Council	operation of the access road, and that these volumes would not be significantly greater than those associated with the Proposed Development. Overall, it is anticipated the cumulative waste effects would be similar to those reported for the Proposed Development in isolation, as reported in **Chapter 15:** Sustainability, Waste and Climate Change.		

16.7 Combined Effects Assessment

16.7.1 Combined effects are those that may arise when several different impacts resulting from the Proposed Development have the potential to affect a single receptor. **Table 16-16** identifies where in the ES combined effects have been considered with regard to the Proposed Development, and considers other potential combined effects that are not discussed elsewhere.

Table 16-16: Potential for significant combined effects

Chapter	Combined Effects Considered in Technical Chapter	Other Combined Effects to be considered
Chapter 6: Air Quality	This chapter considers air quality effects of stack emissions and road traffic emissions. However, the receptors of these two sources of air quality effects are in different locations, whilst the main road traffic emissions would occur during the construction stage and emissions from the stacks being during operation. As a result, there is no potential for significant combined air quality effects on single receptors. No significant adverse air quality effects are predicted. The chapter also considers air quality effects on designated and non-designated nature conservation sites due to stack emissions - no significant effects are anticipated. Designated nature conservation sites lie several kilometres from the Site and there is no potential for air quality effects associated with construction and operation of the Proposed Development to combine with other potential effects (e.g. traffic, noise etc.). The potential for such combined effects are considered within **Chapter 9:** Ecology. **Chapter 9:** Ecology also considers the potential for combined effects upon Local Wildlife Sites located in the vicinity of the Site.	There is potential for dust effects during the construction phase to combine with noise and visual effects at some individual receptors located within 350m of the Site – this includes Public Right of Way (PRoW) West Burton FP4 (transient receptor) located adjacent to the Site. Transient receptors using the footpath are not identified as being sensitive for the air quality assessment, nor have they been selected as representative for viewpoints. Assuming a worst-case that users of this footpath could experience a significant adverse visual effect during the construction phase, given that footpath users are not considered to be sensitive to air quality (or noise), combined effects are not anticipated. This would also be the case during Proposed Development operation. Therefore, receptors located beyond 350m from the Site are similarly not anticipated to experience potentially

Chapter	Combined Effects Considered in Technical Chapter	Other Combined Effects to be considered
		significant combined effects.
Chapter 7: Traffic and Transport	This chapter considers a range of different traffic-related effects on roadside receptors, including severance, pedestrian amenity, fear and intimidation, highway safety and driver delay. No significant combined effects were predicted.	There is potential for receptors located close to the road network to experience combined effects from traffic (severance, pedestrian amenity, highway safety etc.), noise, vibration and air emissions during construction of the Proposed Development. However, the traffic, air quality and noise assessments do not identify any significant effects on sensitive receptors located close to the road network. Therefore, combined effects are not anticipated to be significant. There is potential for users of PRoW West Burton FP4 (located adjacent to the Site boundary), and users of roads (required for construction access to the Proposed Development) to experience construction-related dust, noise and visual effects. However, as detailed in the row above, significant combined effects are not anticipated. Operational phase combined effects are similarly not anticipated given that operational activities would not result in significant impacts upon the road network.

Chapter	Combined Effects Considered in Technical Chapter	Other Combined Effects to be considered
Chapter 8: Noise and Vibration	No combined effects identified.	See above regarding combined noise, dust and visual effects during construction and operation.
Chapter 9: Ecology	This chapter considers the combined effects of noise, air quality, disturbance, water contamination and ground contamination on ecological receptors in the vicinity of the Site. No significant combined effects on ecological receptors have been identified.	No other combined effects on ecological receptors have been identified.
Chapter 10: Landscape and Visual Amenity	No combined effects identified.	See above regarding combined visual, dust and noise effects during construction, including potential combined effects on PRoW users.
Chapter 11: Ground Conditions and Hydrogeology	No combined effects identified.	No combined effects identified.
Chapter 12: Flood Risk, Hydrology and Water Resources	No combined effects identified.	No combined effects identified.
Chapter 13: Socio-economics	This chapter considers the potential for construction of the Proposed Development to generate short-term disruption to the amenity of receptors in close proximity to the Site. Impacts on amenity include disruption to landscape and visual amenity, temporary noise effects, disruption through increased traffic movements and construction dust. The chapter indicates that with the implementation of appropriate mitigation and avoidance measures,	No combined effects identified.

Chapter	Combined Effects Considered in Technical Chapter	Other Combined Effects to be considered
	no significant residual (combined) effects from construction noise, traffic and dusts are predicted to occur, although significant adverse visual effects on Bole FP3B/FP4 during construction would remain. The chapter also considers amenity impacts during operation, but indicates that with the avoidance measures and stated mitigation in place, no significant residual (combined) effects on air quality or noise are predicted to occur, although significant adverse visual effects on Bole FP3B/FP4 would remain.	
Chapter 14: Cultural Heritage	This chapter considers both physical and visual setting impacts on cultural heritage assets. No significant combined effects are predicted.	No combined effects identified.
Chapter 15: Sustainability, Waste and Climate Change	This chapter considers the combined effects of the Proposed Development on land use, water quality, flood risk, waste, transport, ecology and employment in order to evaluate the overall sustainability of the Proposed Development. No significant effects are identified.	No combined effects identified.

16.8 Limitations and Difficulties

16.8.1 Any limitations that were encountered during the technical assessments are detailed within **Chapters 6-15**.

16.8.2 The cumulative assessment is based on currently available information on other potential or committed developments in the vicinity of the Site.

16.9 Summary of Likely Significant Residual Effects

16.9.1 This chapter has considered the potential for cumulative and combined effects associated with the Proposed Development. The assessment indicates that other developments in the vicinity of the Proposed Development are of a scale and nature such that potentially significant cumulative effects would be avoided.

16.9.2 With regard to combined effects, given the impact avoidance and mitigation measures proposed, potentially significant combined effects are not anticipated.

16.10 References

Ref 16-1 HM Government (2009) *Infrastructure Planning (Environmental Impact Assessment) Regulations 2009*.

Ref 16-2 European Union (2011) *European Directive* 2011/92/EU.

Ref 16-3 Bassetlaw District Council (2011) *BDC Core Strategy and Development Policies.*

Ref 16-4 Bassetlaw District Council (2019) *Draft Bassetlaw Local Plan.*

Ref 16-5 Planning Inspectorate (2015) *Advice Note 17 Cumulative Effects Assessment Relevant to Nationally Significant Infrastructure Projects*.

Ref 16-6 AECOM (2017) *West Burton C Preliminary Environmental Information Report*, September 2017.

Ref 16-7 Planning Inspectorate (2018) *Advice Note 12: Regulation 24 of the EIA Regulations: Transboundary Impacts*. Version 5, published March 2018.

Ref. 16-8 Sturton-le-Steeple Parish Council (2019) *Council website [online accessed 23.2.19].* http://www.sturtonward.org.uk/

Ref 16-9 British Standards Institute (2014) *BS 4142 – Methods for rating and assessing industrial and commercial sound.*

Ref 16-10 Nottinghamshire County Council (2019) Planning Applications. *[online accessed 1.3.19].* https://www.nottinghamshire.gov.uk/planning-and-environment/planning-applications/commenting-on-planning-applications.