A46 Coventry Junctions (Walsgrave) Scheme number: TR010066

6.1 Environmental Statement

Chapter 15 - Combined and Cumulative Effects

APFP Regulations 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Volume 6

November 2024

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A46 Coventry Junctions (Walsgrave)
Development Consent Order 202[x]

ENVIRONMENTAL STATEMENT
Chapter 15 – Combined and Cumulative Effects

Regulation Number	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010066
Application Document Reference	TR010066/APP/6.1
Author	A46 Coventry Junctions (Walsgrave), Project Team & National Highways

Version	Date	Status of Version
Rev 0	November 2024	Application Issue

Table of contents

15. Combined and cumulative effects

15.1. Introduction

15.1.1. This Chapter presents the information required by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) to be provided in the Environmental Statement (ES) to enable the identification and assessment of likely significant combined and cumulative environmental effects.

15.1.2. Cumulative effects result from multiple actions on receptors over time and are generally additive or interactive (synergistic) in nature. They can also be considered as effects resulting from incremental changes caused by other past, present or reasonably foreseeable actions together with the Scheme.

15.1.3. The assessment draws upon guidance and standards provided in the Design Manual for Roads and Bridges (DMRB) LA 104 Environmental Assessment and Monitoring (2020) (Revision 1) and the Planning Inspectorate's 'Advice Note Seventeen: Cumulative Effects Assessment' (2019). Full details of the assessment methodology followed is set out in ES Chapter 4 (Environment Assessment Methodology) (**TR010066/APP/6.1**).

15.1.4. In line with DMRB LA 104, this combined and cumulative effects assessment (CEA) includes effects from:

- **Combined effects (synergistic)** – the effects from a single scheme that is created as a result of the inter-relationship between the different environmental factors
- **Cumulative effects (additive)** – the effects created by a scheme in combination with the effects of other schemes.

15.1.5. An assessment of combined and cumulative impacts of the Scheme has been undertaken for scoped in environmental disciplines. This was undertaken to determine whether there would be any predicted combined and cumulative effects, and whether additional mitigation measures would be required to reduce any potentially significant cumulative effects.

15.1.6. ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**) contains a detailed description of the Scheme. The drawings referenced in this Chapter can be found in the ES Figures (**TR010066/APP/6.2**), and the technical appendices referred to in this Chapter are presented in the ES Appendices (**TR010066/APP/6.3**). This Chapter text is supported by the following:

- ES Figure 15.1: Cumulative Effects Shortlisted Developments
- ES Appendix 15.1: Cumulative Effects Long and Short List

15.2. Competent expert evidence

15.2.1. This Chapter has been written by has been prepared by Sweco who hold the EIA Quality Mark from the Institute of Environmental Management and Assessment (IEMA), on behalf of the Applicant. The lead author of this cumulative and combined effects assessment is a member of the Chartered Institute of Water and Environmental Management (CIWEM) and an affiliate member of IEMA, with over 20 years of experience undertaking EIAs, including for highway schemes. The various EIA technical leads have also contributed to the assessments presented in this Chapter and their experience is summarised at the start of each of the aspect Chapters (Chapters 5 to 14 of this ES (**TR010066/APP/6.1**)).

15.3. Legislative and policy framework

Legislation

15.3.1. The principal legislative and planning context which has been accounted for in assessment of combined and cumulative environmental effects of the Scheme is set out in Table 15-1 below.

Table 15-1: Legislation summary

Legislation	Summary	How this is addressed in the assessment
European Directive 2011/92/EU	European Directive 2011/92/EU, as amended by European Directive 2014/52/EU, requires EIA to identify, describe and assess significant environmental effects arising from the interaction between the following factors: population and human health; biodiversity; land; soil; water; air and climate; material assets; cultural heritage and the landscape.	The predicted environmental effects for both construction and operational phases of the Scheme are taken into consideration with the inclusion of any proposed mitigation from the Chapters of the ES. A summary of the reported construction effects are described in Table 15-5 and a summary of the reported operation effects are described in Table 15-6 of this Chapter.
The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017	Schedule 4 paragraph 5 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 requires: '*A description of the likely significant effects of the development on the environment resulting from, inter alia: […](e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems*	The predicted environmental effects for both construction and operational phases of the Scheme are taken into consideration with the inclusion of any proposed mitigation from the Chapters of the ES. A summary of the reported construction effects are described in Table 15-5 and a summary of the reported operation effects are described in Table 15-6 of this Chapter.

Legislation	Summary	How this is addressed in the assessment
	relating to areas of particular environmental importance likely to be affected or the use of natural resources' 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.' Furthermore, Regulation 5(2)(e) requires that the EIA must identify, describe and assess in an appropriate manner the direct and indirect significant effects of a development arising from the interaction between the following factors: population and human health; biodiversity; land; soil, water, air and climate; material assets, cultural heritage and the landscape.	

Policy and guidance

National Networks National Policy Statement 2024

15.3.2. The National Networks National Policy Statement (NPS NN) 2024 sets out the policy which the Scheme should comply with. It is also the basis for informing a judgement on the impacts of a Scheme, for example whether the Scheme is consistent with the requirements of the NPS NN. Compliance of the Scheme with the NPS NN is detailed within the NPS NN Accordance Tables (**TR010066/APP/7.2**).

15.3.3. Table 15-2 summarises the policy requirements from the NPS NN relating to the applicant's assessment and mitigation requirements for cumulative effects and how these requirements have been addressed in the assessment.

Table 15-2: NPS NN requirements for assessment of cumulative effects

Paragraph	Applicant's assessment / mitigation requirement	How this is addressed in the assessment
4.12	*'A key part of environmental assessment is the consideration of cumulative effects' which should '…consider the impact of other existing*	The methodology for this cumulative assessment involves the identification of incremental changes likely to be caused by reasonably foreseeable existing and / or

Paragraph	Applicant's assessment / mitigation requirement	How this is addressed in the assessment
	and committed developments within an appropriate geographical area and assess the additional impact of their own development.'	approved developments, hereafter referred to as 'other developments'; considered together with the Scheme, which is detailed in section 15.5 of this Chapter. The cumulative assessment is detailed in sections 15.7 and 15.8 of this Chapter.
4.12	*4.12 goes on to note that while there is no mandated approach, the assessment of combined and cumulative effects must take account of how proposals '…might affect the environment, economy or community as a whole…' through '…the accumulation of, and interrelationship between, effects identified in the environmental assessment…'.*	The predicted environmental effects for both construction and operational phases of the Scheme are taken into consideration with the inclusion of any proposed mitigation from the Chapters of the ES. A summary of the reported construction effects are described in Table 15-5 and a summary of the reported operation effects are described in Table 15-6 of this Chapter.
4.51	*'The Secretary of State should be satisfied that development consent can be granted taking full account of environmental impacts. This will require close cooperation with the Environment Agency and/or the pollution control authority, and other relevant bodies, such as the Marine Management Organisation, the Statutory Nature Conservation Bodies, Drainage Boards, and water and sewerage undertakers, before consenting any potentially polluting developments, to ensure that:* *…The cumulative effects of pollution when the proposed development is added would make that development unacceptable …'*	The consultation undertaken is detailed within section 15.4 of this Chapter and this Chapter reflects the study areas and assessment approach agreed with the consultees.
5.33	*'A Whole Life Carbon Assessment should be conducted according to the guidance, standards and methodologies set out in Transport Analysis Guidance Unit A3. Also refer to the Environmental Assessment at paragraph 4.12 of this NPS document for more information about cumulative assessment'*	A Whole Life Carbon Assessment has been undertaken which reports the total estimated greenhouse gas emissions arising from the Scheme for the construction, operation and overall total for the whole lifecycle. The Whole Life Carbon Assessment has been conducted according to PAS 2080:2023 and DMRB LA 114 as outlined in the methodology and the results of the assessment have been reported in the ES Chapter 14 (Climate) (**TR010066/APP/6.1**).
5.61	*Where a proposed development on land within or outside a Site of Special Scientific Interest is likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments), development consent should not normally be granted. An*	Section 8.11 of ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**) details the assessment of Scheme impacts on ecological features including Sites of Special Scientific Interest (SSSIs). An assessment of potential significant cumulative effects on designated ecological

Paragraph	Applicant's assessment / mitigation requirement	How this is addressed in the assessment
	exception should only be made where the benefits of the development proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest.	features (including SSSIs) during construction and operation are summarized in Table 15-5 and Table 15-6 of this Chapter respectively.
5.245	*Short term negative effects in relation to socio-economics where '…if development consent were to be granted to for (sic) a number of projects within a region and these were developed in a similar timeframe…'*	The predicted environmental effects for both construction and operational phases of the Scheme are taken into consideration with the inclusion of any proposed mitigation from the Chapters of the ES (**TR010066/APP/6.1**). A summary of the reported construction effects are described in Table 15-5 and a summary of the reported operation effects are described in Table 15-6 of this Chapter.
5.258	*Any assessment for both the construction and operational phases of the development [on water quality and resources] should describe:…any cumulative effects".*	The predicted environmental effects for both construction and operational phases of the Scheme are taken into consideration with the inclusion of any proposed mitigation from the Chapters of the ES (**TR010066/APP/6.1**). A summary of the reported construction effects are described in Table 15-5 and a summary of the reported operation effects are described in Table 15-6 of this Chapter

Standards and guidance

15.3.4. The following standards and best practice guidelines are considered relevant to the Scheme with regard to combined and cumulative effects:

- Advice Note Seventeen: Cumulative effects assessment (Planning Inspectorate, 2019)
- Design Manual for Roads and Bridges (DMRB) LA 104 – Environmental assessment and monitoring (Highways England, 2020)

15.4. Consultation

15.4.1. An Environmental Scoping Report (**TR010066/APP/6.8**) was submitted to the Planning Inspectorate in June 2023. In response to the Environmental Scoping Report a Scoping Opinion (**TR010066/APP/6.9**) was received from the Planning Inspectorate on behalf of the Secretary of State. The Applicant's responses to the Scoping Opinion are contained in ES Appendix 4.1 (Scoping Opinion Response) (**TR010066/APP/6.3**).

15.4.2. Responses in relation to the statutory consultation undertaken are presented in the Consultation Report (**TR010066/APP/5.1**) and the Consultation Report Annexes (**TR010066/APP/5.2**). Details of how the applicant has undertaken further engagement with statutory consultees is set out in the Consultation Report (**TR010066/APP/5.1**).

15.4.3. The approach to this assessment follows the methodology set out in the Environmental Scoping Report (**TR010066/APP/6.8**) and has been prepared in accordance with the Planning Inspectorate's Scoping Opinion (**TR010066/APP/6.9**).

15.4.1. Engagement with the local planning authorities has been carried out on the long and short lists (described further in the following paragraphs).

15.4.2. Warwickshire County Council, Rugby Borough Council and Coventry County Council were contacted on the 3 April 2024 and sent the cumulative effects assessment matrix from the Planning Inspectorate's Advice Note 17, which details the current long and short list of developments. This email asked for them to respond to confirm they are in agreement with our long list and short list of developments and if they were aware of any additional developments that should be incorporated to the matrix.

15.4.3. Following the responses from Rugby Borough Council on 4 April 2024, Warwickshire County Council on April 17 2024 and Coventry County Council on July 4 2024, an additional project was added to the long list, planning application R23/1027.

15.4.4. Some of the suggestions made included developments that lie outside the Zone of Influence (ZoI) or referred specifically to traffic related impacts which are covered in the Transport Assessment (**TR010066/APP/7.3**) for the Scheme, and therefore were not progressed further in this assessment.

15.4.5. This Chapter reflects the study areas and assessment approach agreed with the consultees.

15.5. Assessment methodology

15.5.1. The methodologies for both the combined and cumulative effects assessments are described in this section.

Combined effects methodology

15.5.2. In line with DMRB LA 104, the assessment methodology for combined effects involves the identification of effect interactions associated with the Scheme upon a receptor or group of receptors, to better understand the overall environmental effect of the Scheme.

15.5.3. The study area for the assessment of combined and cumulative effects, for both construction and operation, has been defined by the study areas identified within the relevant environment aspects of the ES, ranging from 200m (for air quality receptors) to 2km (for biodiversity receptors).

15.5.4. The significance of construction and operational phase environmental effects from the preceding aspect Chapters of the ES are brought forward into matrices, providing an overview of the potential effects on individual receptors. The assessment considers residual effects, after mitigation has been taken into account. An assessment of significance of combined effects upon each environmental receptor or group of receptors is then made based upon DMRB LA 104 and professional judgement.

15.5.5. DMRB LA 104 also states that the cumulative effects should be assessed when the conclusions of all other individual environmental effects of the Scheme have been reached and reported.

Cumulative effects methodology

15.5.6. The assessment of cumulative effects involves the identification of incremental changes likely to be caused by reasonably foreseeable existing and / or approved developments, hereafter referred to as ‘other developments’; considered together with the Scheme.

15.5.7. The assessment of cumulative effects follows Planning Inspectorate Advice Note Seventeen: Cumulative Effects Assessment with the four stages of assessment:

- **Stage 1:** Establish the ZoI and identify a long list of ‘other developments’. This is available in ES Appendix 15.1 (Cumulative Effects Long and Short List) (**TR010066/APP/6.3**)
- **Stage 2:** Identify shortlist of ‘other developments’ for the cumulative effects assessment. This is available in ES Appendix 15.1 (Cumulative Effects Long and Short List) (**TR010066/APP/6.3**)
- **Stage 3:** Information gathering
- **Stage 4:** Assessment

15.5.8. The ZoI is based on the study areas of the environmental topics detailed in the preceding ES Chapters. ES Figure 15.1 (Cumulative Effects Shortlisted Developments) (**TR010066/APP/6.2**) shows the developments from the short list and study area.

Environmental topics

15.5.9. Some environmental topics in the preceding Chapters of this ES, have relied wholly, or in part, on the forecasts derived from the traffic model. As the traffic model includes future other developments, the assessments of the Scheme's

effects within these topics have included cumulative impacts by default and therefore the effects incorporating developments that are included in the traffic model are reported within their ES Chapters. Further information on the approach to traffic modelling can be found in Section 4: Assessment Methodology of the Transport Assessment for the scheme (**TR010066/APP/7.3**).

15.5.10. The topics and the intrinsically cumulative aspect of the operational assessment (as outlined above) are included in the following ES Chapters:

- ES Chapter 5 (Air Quality) (**TR010066/APP/6.1**)
- ES Chapter 11 (Noise and Vibration) (**TR010066/APP/6.1**)
- ES Chapter 14 (Climate) (**TR010066/APP/6.1**)

15.5.11. In line with the DMRB LA 104 good practice principles, these are not included in the scope of operational effects for the CEA to avoid duplication of information and/or assessment of effect.

Stage 1 – Establish the Zone of Influence and identify a long list of 'other developments'

15.5.12. To identify relevant 'other developments' to be included in the long list for assessment of potential cumulative effects, a ZoI has been established which applies to each environmental aspect. A ZoI of 1km from the Scheme extents will be applied, which is considered to cover the proposed developments likely to contribute to cumulative effects, whilst being proportionate to the scope and scale of the Scheme.

15.5.13. To establish the long list of 'other developments', the following sources were reviewed within the 1km ZoI:

- the Uncertainty Log produced for the Transport Assessment (**TR010066/APP/7.3**) at the option selection stage and the current design stage
- a search of the National Infrastructure Planning Projects site https://infrastructure.planninginspectorate.gov.uk/projects/ (at the time of writing, no other Nationally Significant Infrastructure Projects have been identified within 1km of the Scheme)
- Coventry City Council, Warwickshire County Council and Rugby Borough Council planning portals, identifying developments within the ZoI that have either been consented within the last five years, or currently have an EIA screening letter, scoping report or Environmental Statement on the planning portal that are pending determination
- Coventry City Council and Rugby Borough Council Local Plans, identifying any committed developments and land allocations within the ZoI

15.5.14. In line with the Planning Inspectorate's advice note seventeen, 'other developments' will be grouped into tiers, reflecting the likely degree of certainty attached to each development, as shown in Table 15-3. Tier 1 developments are the most certain, whilst developments falling into Tier 3 are least certain and most likely to have limited publicly available information to inform assessments. The relevant tier for each development will be informed by the Uncertainty Log and publicly available information.

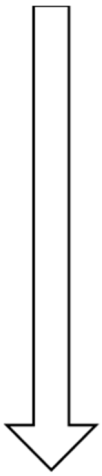
15.5.15. As such, the methodology for the assessment of cumulative effects focuses on where the potential for significant effects is most likely, informed by the degree of certainty and information available, rather than report on every interaction identified.

Stage 2 – Establish a shortlist of 'other developments'

15.5.16. To generate a shortlist of 'other developments', the indicative threshold criteria in Schedule 1 and Schedule 2 of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 will be applied to the long list.

15.5.17. Other developments that have characteristics likely to give rise to significant cumulative effects, or which could give rise to a cumulative effect by virtue of its proximity to the Scheme, will also be considered on an individual aspect by aspect basis, using professional judgement.

Table 15-3: Likely degree of certainty assigned to each tier

Tier	Likely degree of certainty	Decreasing level of detail likely to be available
Tier 1	Under construction* Permitted application(s), whether under the Planning Act 2008 or other regimes, but not yet implemented Submitted application(s) whether under the Planning Act 2008 or other regimes but not yet determined	
Tier 2	Projects on the Planning Inspectorate's Programme of Projects and on Coventry City Council, Warwickshire County Council and Rugby Borough Council Planning Portals where a Scoping Report has been submitted	
Tier 3	Projects on the Planning Inspectorate's Programme of Projects and on Coventry City Council, Warwickshire County Council and Rugby Borough Council Planning Portals where a Scoping Report has not been submitted Identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as the 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 developments are expected to be completed before the construction of the Scheme and the effects of those other developments have been fully determined, those effects have been considered as part*

of the baseline and may be considered as part of the construction and operational assessment for individual disciplines.

Stage 3: Information gathering

15.5.18. In line with the Planning Inspectorate's advice note seventeen, the following information on the 'other developments' shortlisted will be compiled from publicly available information, including:

- proposed design and location information
- proposed programme of construction, operation and decommissioning
- environmental assessments that set out baseline data and predicted effects arising from these other developments

Stage 4: Assessment

15.5.19. As outlined in the 'combined effects methodology' section above, DMRB LA 104 notes that cumulative effects are best assessed when the conclusions of individual environmental factor assessments have been reported. The assessment of significance of the cumulative effects is therefore presented as such in the ES.

15.5.20. As highlighted in the stages above, the assessment will focus on 'other development' with the greatest degree of certainty and information available to ensure a robust but proportionate approach.

15.5.21. The ES will report the results of the assessment with particular consideration given to any significant cumulative effects that are identified, and the need for mitigation to be developed for the Scheme. In instances where any significant cumulative effects beyond those identified as residual effects from the Scheme in isolation have been identified, additional mitigation measures will be considered. Additional mitigation measures will be appropriately secured within the Development Consent Order (DCO) (for example through an Environmental Management Plan (EMP) and / or other DCO requirements or articles where appropriate).

Temporal scope

15.5.22. Temporal scope refers to the timescale in which the CEA extends. For the purposes of this assessment, the temporal scope (for all Stages 1-4 set out above) is defined as both the construction and operation phases identified in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**), for both the combined and cumulative assessments. The construction and operation programme is outlined in ES Chapter 2 (The Scheme) (**TR010066/APP/6.1**).

Significance criteria

15.5.23. The assessment of significance of the combined and cumulative effects has been determined in accordance with the significance criteria contained in DMRB LA 104. Typically, the greater the environmental sensitivity or value of the receptor or resource, and the greater the magnitude of impact, the greater the effect. Consequently, a highly valued resource suffering a major detrimental impact would result in a very large adverse effect. The approach follows that set out in Section 4.7 of ES Chapter 4 (Environment Assessment Methodology) (**TR010066/APP/6.1**).

15.5.24. For the purpose of the combined and cumulative effects assessment, the value of a resource and magnitude of impact is determined according to the criteria set within the preceding Chapters 5-14 of the ES (**TR010066/APP/6.1**).

15.5.25. The significance of effect is then carried forward from preceding environmental Chapters to enable an assessment of single project significance, as well as to identify the significance of different project effects with other developments.

15.5.26. Consideration is given to the following:

- The duration of effect, for example, will it be temporary or permanent
- The extent of effect, for example, the geographical area of an effect
- The type of effect, for example, whether additive or synergistic
- The frequency of the effect
- The value and resilience of the receptor affected
- The likely success of mitigation

15.6. Assessment assumptions and limitations

15.6.1. A series of overarching assumptions to the EIA are presented in Section 4.6 of ES Chapter 4: Assessment methodology. Furthermore, individual environmental aspects (Chapters 5-14 of this ES (**TR010066/APP/6.1**)) each present specific assumptions and limitations that are relevant to their individual assessments. These assumptions and limitations are all considered to be relevant in the assessment of combined and cumulative effects.

15.6.2. Specific limitations and uncertainty in relation to the combined and cumulative effects assessment lie in the diminishing certainty of future developments and for the developments where only limited information is publicly available. This also extends to the availability, quality and currency of the information presented on the National Infrastructure Planning Projects portal, and the Coventry City Council, Warwickshire County Council and Rugby Borough Council online planning portals. This limitation has been addressed as far as possible through professional judgement and adopting a worst-case approach i.e. when the

construction start and finish dates are not available for the other developments, it has been assumed that either part or all of the construction phase will fall within the same period as the Scheme construction activities, reflecting a worst case scenario approach.

15.6.3. For developments which are absent from the local planning authority and the Planning Inspectorate portals (i.e. Tier 3 defined in Planning Inspectorate Advice Note Seventeen), it is assumed that there is not enough information available at this stage to assess these development(s), therefore they are discounted from proceeding to the short list of developments for assessment. ES Appendix 15.1 (Cumulative Effects Long and Short List) (**TR010066/APP/6.3**) details the long and short list, where Housing allocation H2 (including emergency route) in the Coventry City Council local plan has not been carried through to the long list for this reason (i.e. there is no environmental information to undertake a cumulative assessment and the timescale for this development are unknown and could be brought forward at any time). An application for housing allocation H2 would need to include a cumulative assessment which would need to consider the Scheme if appropriate.

15.6.4. The Planning Inspectorate advice also acknowledges the need for a "cut-off" date, beyond which new other existing and, or approved development coming forward may not be considered as part of the ES (**TR010066/APP/6.1**). This is necessary in order to properly complete an assessment of combined and cumulative effects and finalise the ES as part of the application for development consent. For the purposes of this assessment, that cut-off point is deemed to be April 2024.

15.7. Assessment of single project effects

15.7.1. The predicted residual environmental effects for both construction and operational phases of the Scheme are taken into consideration with the inclusion of any proposed mitigation from the preceding Chapters of the ES (**TR010066/APP/6.1**).

15.7.2. A summary of the reported residual construction effects are described in Table 15-4 and a summary of the reported residual operation effects are described in Table 15-5.

Table 15-4: Potential single project residual effects between topics on receptors during construction of the Scheme

Receptor	Air quality	Biodiversity	Cultural heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment (RDWE)	Significance of cumulative effects
Human receptors residents, including community and private assets, sensitive receptors and vulnerable groups	None	None	None	Change to views at viewpoint 1 during construction, affecting residents on Farber Road, Barrow Close, Dorchester Way and Hungerley Hall Farm, users of Public Rights of Way in close proximity to the Scheme in particular users of the Public Right of Way (PRoW) no. R75X at Walsgrave Hill – **Large adverse** Change to views at viewpoint 13 during construction, affecting residents on Farber Road, Barrow Close, Dorchester Way and Hungerley Hall Farm – **Large adverse** Change to views at viewpoint 2 during construction – **Moderate adverse** Change to views at viewpoint 6 during construction, affecting residents on Farber Road, Barrow Close, Dorchester Way and Hungerley Hall Farm, and Local footpaths associated with Sowe Valley and Dorchester Way – **Moderate adverse** Change to views at viewpoint 7 during construction, Local footpaths associated with Sowe Valley and Dorchester Way	Effects on users/ occupiers of the A46 – **Neutral** Effects on users/ occupiers of adjacent land areas, agricultural fields paths – **Slight adverse** Off-site residential receptors – **Slight adverse** Construction workers – **Slight adverse**	Temporary disruption to access – private property and housing, community land and assets and businesses – **Slight adverse** Impact on future jobs from development land (H2:3) – **Neutral** Effects on Hungerley Hall Farm: Temporary land take – **Moderate adverse** Access and infrastructure – **Large adverse** Farming activities – **Large adverse** Effects on Walsgrave Hill Farm Partnership: Temporary land take – **Slight adverse** Access and infrastructure – **Moderate adverse** Farming activities – **Slight adverse**	Construction noise- **temporary moderate / major adverse** Construction vibration – **minor adverse** Construction traffic- **minor adverse** Change in road traffic noise during temporary traffic diversions – **temporary major adverse**	None	It is anticipated that there would be multiple effects on residential properties such as Hungerley Hall Farm surrounding the A46 and on users of the A46 due to traffic disruption, changes to views and noise. Measures would be in place to manage impacts from traffic and in the Traffic Management Plan (TMP) to ensure access to local properties and facilities is maintained at all times. However, whilst mitigation will be in place, it is anticipated that there would be a **significant cumulative effect** on this receptor.

Receptor	Air quality	Biodiversity	Cultural heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment (RDWE)	Significance of cumulative effects
				(and viewpoint 4) – M**oderate adverse**					
Human- all travellers (vehicle, walkers, cyclists and horse riders)	None	None	None	None		Temporary closure of the existing uncontrolled pedestrian crossing facility on the B4082 eastern arm of the Clifford Bridge Road roundabout – **Moderate adverse** Temporary closure of one of the informal footpaths which provide a connection to an existing uncontrolled crossing facility – **Minor adverse** Remaining walking, cycling and horse-riding facilities (Table 11.5 of ES Chapter 12) - **Neutral**	None	None	No significant cumulative effects are anticipated.
Ecological receptors (designated sites, protected species and existing habitats)	None	Effects on Coombe Pool SSSI – **Large adverse** Effects on Coombe Abbey LWS - **Neutral** Effects on Hungerley Hall Farm Ecosite – **Slight beneficial** Effects on Coombe Abbey Pool Ecosite - **Neutral** Effects on Priority habitats: hedgerows – **Slight beneficial** Effects on ponds – **Slight beneficial** Effect on veteran trees – **Neutral**	None	None	None	None	None	None	No significant cumulative effects are anticipated.

Receptor	Air quality	Biodiversity	Cultural heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment (RDWE)	Significance of cumulative effects
		Effect on GCN – **Slight adverse** Effect on breeding and wintering birds (including skylark, linnet, yellowhammer and song thrush) – **Slight adverse** Effect on barn owl – **Slight adverse** Effect on wintering birds – **Slight adverse** Effect on bats – **Slight adverse** Effect on badger – **Slight adverse** Effect on common reptiles – **Slight beneficial** Effect on otter – **Slight adverse** Effect on other notable species including hedgehog, brown hare and polecat – **Slight adverse**							
The water environment	None	The following are repeated from 'Ecological receptors' to ensure linkages between relevant environmental disciplines are captured: Effects on Coombe Pool SSSI - **Large adverse** Effects on Herald Way Marsh SSSI, Local Nature Reserve (LNR) and Local Widlife Site	None	None	Surface water – Smite Brook, Coombe Pool and associated surface water features: Migration of contaminants in the saturated zone towards surface water. Surface run-off towards surface waters, including via local drainage systems – **Slight adverse** Groundwater: Secondary A, B and undifferentiated	None	None	Surface water-accidental leakage or spillage on Coombe Pool, River Sowe Smite Brook, Withy Brook and their tributaries– **Neutral or slight adverse** Works within, adjacent, over or close to water bodies, watercourses, ponds or the fluvial floodplain, on Coombe Pool, River Sowe, Smite Brook	It is anticipated that there would be multiple effects on receptors Smite Brook and Coombe Pool. The effects would be temporary and mitigation measures will be in place to reduce accidental spillage, leakage and contamination. it is not anticipated that these would result in a significant cumulative effect.

Receptor	Air quality	Biodiversity	Cultural heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment (RDWE)	Significance of cumulative effects
		(LWS) – **n/a no pathway** Effects on Stoke Floods LNR – **Neutral** Effect on Gainford Rise LWS – **Neutral** Coombe Abbey LWS – **Slight adverse** Stoke Floods LWS – **Neutral** Sowe Valley Dorchester Way LWS – **Neutral** Effects on Priority habitats: hedgerows – **Slight beneficial** Effects on Coastal and floodplain grazing marsh, deciduous woodland – **Neutral** Effects on Lowland fens – **Neutral** Effects on ponds – **Slight beneficial** Effects on barn owl – **Slight adverse** Effects on otter – **Slight adverse** Effects on Fish, including brown trout, bullhead and European Eel – **Neutral**			Aquifers – **Slight adverse**			and their tributaries- **Slight adverse** Alteration of ground elevations and overland flow pathways and construction of above ground structures acting as a barrier to flow, on Coombe Pool, River Sow, Smite Brook and their tributaries, River Sowe, Smite Brook and Withy Brook floodplains – **Neutral or Slight adverse** Drainage from the satellite site compound and construction areas, accidental leaks and spillages – Superficial deposits, Mercia Mudstone, River Sowe, Smite Brook, Herald Way march Ground Water Dependant Terrestrial Ecosystem (GWDTE) – **Neutral or Slight adverse** Excavation and construction of temporary and permanent below ground structures and piles below the water table. Construction of embankments, River Sowe, Smite Brook, Herald Way GWDTE – **Slight adverse** Demolition of existing structures - River Sowe, Smite Brook, Herald Way GWDTE- **Slight**	Hydrological effects on ecological receptors are assessed in ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**) . Effects are not considered to be significant except for those on Coombe Pool SSSI, in which it is expected that there would be a **significant cumulative effect** due to impacts relating to hydrology, air quality, noise, habitat loss and impacts related to the spread of Invasive Non-Native Species (INNS).

Receptor	Air quality	Biodiversity	Cultural heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment (RDWE)	Significance of cumulative effects
								adverse and Neutral Alteration of ground profiles, for example embankments, and creation of additional hardstanding areas, for example for access roads and satellite construction compound- River Sowe, Smite Brook, Herald Way GWDTE- **Slight adverse and Neutral**	
Landscape and visual	None	None	None	Effects on landscape character on PLCA 1 – **Large adverse** Effects on landscape character on PLCA 2 – **Slight adverse** Effects on landscape character on PLCA 3 – **Slight adverse** Effects on landscape character on PLCA 4 – **Slight adverse** Effect on Green Belt due to landscape character change and change in openness – **Slight adverse**	None	None	None	None	No significant effects are anticipated.
Geology and soils	None	None	None	None	Agricultural soils – **Large adverse** Grade 3a soil – **Moderate adverse** Grade 3b soil (permanent land take) – **Moderate adverse** Grade 3b soil (temporary land take) – **Slight adverse**	None	None	None	No significant effects are anticipated.

Receptor	Air quality	Biodiversity	Cultural heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment (RDWE)	Significance of cumulative effects
Heritage assets	None	None	Loss of curtilage at Hungerley Hall Farm due to loss of listed yard wall associated with the grade II Listed Buildings of Hungerley Hall Farmhouse (NHLE1265694) – **Slight adverse** Setting of the grade II listed Hungerley Hall Farmhouse and associated listed assets (NHLE1226789; NHLE1265638; NHLE1265694) – **Slight adverse**	None	None	None	None	None	No significant effects are anticipated.

Table 15-5: Potential single project residual effects between topics on receptors during operation of the Scheme

Receptor	Air quality	Biodiversity	Cultural Heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment	Significance of combined effects
Human receptors (residents, including community and private assets, sensitive receptors and vulnerable groups	None	None	None	Effects on representative viewpoints: Viewpoint 13: Hungerley Hall Farm – **Year 1 Large adverse Year 15 Moderate adverse** Effects on visual receptors: Residential – **Year 1 Large adverse Year 15 Slight beneficial all receptors except Hungerley Hall Farm Moderate adverse**	Users of the Scheme – **Neutral** Off site receptors – **Neutral**	Journey length increase for residents to the north and south of the B4082 travelling north on the A46 – **Neutral** Journey length increase for residents to the north and south of the B4082 travelling south on the A46 – **Slight adverse** Alternative access providing journey length decrease to access the A46 northbound from Hungerley Hall Farm – **Minor beneficial** Journey length increase when	Receptors off Valencia Road – **minor adverse** Hungerley Hall Farm – **negligible**	None	There are anticipated to be moderate adverse effects during operation on Hungerley Hall Farm in relation to Year 15 visual effects (large adverse during year 1), farming due to permanent land take, access and infrastructure disruption and farming activities, and noise. It is therefore anticipated that Hungerley Hall Farm would experience **significant adverse cumulative effects** during operation. Effects during operation on other mutual receptors

Receptor	Air quality	Biodiversity	Cultural Heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment	Significance of combined effects
						accessing community land and assets to the north and south of the B4082 travelling north on the A46 - **Neutral** Journey length increase when accessing community land and assets to the north and south of the B4082 travelling south on the A46 - **Slight adverse** Journey length increase when accessing businesses to the north and south of the B4082 travelling north on the A46 – **Neutral** Journey length increase when accessing businesses to the north and south of the B4082 travelling north on the A46 – **Slight adverse** Effects on Hungerley Hall Farm: Permanent land take – **Moderate adverse** Farming activities – **Moderate adverse** Access and infrastructure – **Moderate adverse** Effects on Walsgrave Hill Farm Partnership – Permanent land take – **Slight adverse**			identified are mostly anticipated to be neutral or slight adverse. Due to the scale and nature of the effects it is not anticipated that there would be any additional significant cumulative effects.

Receptor	Air quality	Biodiversity	Cultural Heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment	Significance of combined effects
						Farming activities – **Slight adverse** Access and infrastructure – **Slight adverse**			
Human- all travellers (vehicle, walkers, cyclists and horse riders)	None	None	None	Effects on viewpoints: Viewpoint 1: Recreational users of public path to Coombe Abbey Park/ PRoW R75x and residential receptors at Farber Road/ Barrow Close, Walsgrave – **Year 1 Large adverse Year 15 Slight beneficial** Viewpoint 2: Recreational receptors along the PRoW R75x at Walsgrave Hill – **Year 1 Slight adverse Year 15 Slight beneficial** Viewpoint 3: Recreational receptors along the section of Centenary Way close to Coombe Abbey Park – **Year 1 Neutral Year 15 Neutral** Viewpoint 4: Recreational users of Sowe Valley and Dorchester Way Open Space – **Year 1 Slight adverse Year 15 Neutral** Viewpoint 5: Recreational users of Sowe Valley and residential receptors off northern end of Dorchester Way,	None	Improved amenity and potential road safety benefits of new signalised pedestrian crossing on the eastern arm of the Clifford Bridge roundabout – **Slight beneficial**	None	None	No significant effects are anticipated.

Receptor	Air quality	Biodiversity	Cultural Heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment	Significance of combined effects
				Walsgrave - Abbotsbury Close/ Bridport Close – **Year 1 Neutral Year 15 Neutral** Viewpoint 6: Recreational users of Sowe Valley and residential receptors off southern end of Dorchester Way, Walsgrave - Sturminster Close and Fontmell Close – **Year 1 Slight adverse Year 15 Slight beneficial** Viewpoint 7: Recreational users of Sowe Valley Path – Y**ear 1 Slight adverse Year 15 Neutral** Viewpoint 8: Recreational users of Gainford Rise Open Space by Smite Brook and residential receptors off northern end of Royston Close, Faygate Close and Gainford Rise - **Year 1 Slight adverse Year 15 Slight beneficial** Viewpoint 9: Recreational users of Gainford Rise Open Space and residential receptors off Valencia Road, Binley - **Year 1 Neutral Year 15 Neutral** Viewpoint 10: Recreational receptors at					

Receptor	Air quality	Biodiversity	Cultural Heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment	Significance of combined effects
				Coombe Abbey Park – **Year 1 Neutral Year 15 Neutral** Viewpoint 11: Principally motorist receptors at roundabout junction between Clifford Bridge Road and B4082 – **Year 1 Neutral Year 15 Neutral** Viewpoint 12: 12 O'clock Ride part of Centenary Way near Coombe Abbey Park – **Year 1 Slight adverse Year 15 Neutral** Effects on visual receptors: Recreational – PRoW no R75X at Walsgrave Hill **Year 1 Large adverse, Year 15 Slight beneficial** Local footpaths associated with Sowe Valley and Dorchester Way Year 1 and Year 15 **Minor adverse to Neutral** No significant effects Year 1 or Year 15					
Ecological receptors (designated sites, protected species and existing habitats)	None	Effects on Coombe Pool SSSI – **Slight adverse** Effects on Herald Way Marsh SSSI and LNR – **Slight adverse**	None	None	None	None	None	None	No significant effects are anticipated.

Receptor	Air quality	Biodiversity	Cultural Heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment	Significance of combined effects
		Effects on Willenhall Wood LNR, LWS and Ancient Woodland – **Slight adverse** Effects on Gainford Rise LWS – **Slight adverse** Effects on Stretton Court LWS –**Slight adverse** Effects on Coombe Abbey LWS – **Slight adverse** Effect on Piles Coppice LWS and ancient woodland- **Slight adverse** Effect on Lower Sowe Meadows LWS and veteran tree in Piles Coppice – **Slight adverse** Effect on Baginton Fields LWS – **Neutral** Effect on Sowe Valley Dorchester Way LWS and Sowe Valley Wyken Croft to Antsy Road LWS– **Neutral** Effect on Priority habitats – hedgerows – **Neutral** Effect on Priority habitats: coastal and floodplain grazing marsh, deciduous woodland – **Neutral** Effect on Priority habitats: lowland fens – **Neutral** Effect on ponds – **Neutral** Effect on ancient woodland and							

Receptor	Air quality	Biodiversity	Cultural Heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment	Significance of combined effects
		veteran trees – **Slight adverse** Effect on GCN – **Slight adverse** Effect on breeding birds – **Slight adverse** Effect on barn owl – **Slight adverse** Effect on wintering birds – **Slight adverse** Effect on bats – **Slight adverse** Effect on badger – **Slight adverse** Effect on otter – **Slight adverse** Effect on Fish including brown trout, bullhead and European eel – **Neutral** Effect on other notable species including hedgehog, brown hare and polecat – **Slight adverse**							
The water environment	None	The following are repeated from 'Ecological receptors' to ensure linkages between relevant environmental disciplines are captured: Effects on Coombe Pool SSSI – **Slight adverse** Effects on Gainford Rise LWS – **Slight adverse**	None	None	Surface water – Smite Brook, Coombe Pool and associated surface water features: Migration of contaminants in the saturated zone towards surface water. Surface run-off towards surface waters, including via local drainage systems – **Neutral** Groundwater – Secondary A, B and undifferentiated Aquifers -**Neutral**	None	None	Accidental leakages or spillages, River Sowe, Smite Brooke and their tributaries – **Neutral** Increase in pollutants from routine road runoff, River Sowe, Smite Brook and their tributaries – **Neutral and Slight adverse** Drainage of additional areas of hardstanding and alteration of ground elevations due to re-profiling – River	ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**) assesses potential hydrological impacts on ecological receptors during operation. Impacts are identified as changes to water quality (including pollution), and/ or quantity from runoff, due to proximity of the receptor to the Scheme and / or hydrological connection. ES Chapter 13 (Road

Receptor	Air quality	Biodiversity	Cultural Heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment	Significance of combined effects
		Effects on Coombe Abbey LWS – **Slight adverse** Effects on Stoke Floods LWS/ LNR - **Neutral** Effects on Sowe Valley Dorchester Way LWS - **Neutral** Effect on Priority habitats – hedgerows – **Neutral** Effect on Priority habitats: coastal and floodplain grazing marsh, deciduous woodland – **Neutral** Effect on Fish including brown trout, bullhead and European eel – **Neutral**						Sowe, Smite Brook and their tributaries, River Sowe and Smite Brook floodplain – **Neutral and Slight adverse** Alteration of ground elevations and overland flow pathways and construction of above ground structures acting as a barrier to flow or reducing floodplain storage, Coombe Pool, River Sowe and its tributaries **Negligible** Discharge from proposed outfalls- **Neutral or Slight adverse** Routine road drainage and accidental spillages, superficial deposits, River Sowe and Smite Brook – **Neutral or Slight adverse** Permanent cuttings that extend below the water table, superficial deposits, River Sowe, Smite Brook and Herald Way March GWDTE- **Neutral or Slight adverse** Permanent placement of below-ground structures, including drainage basin and ponds, and piles that extend below the water table, River Sowe, Smite Brook and Herald Way March GWDTE- **Neutral or Slight adverse**	Drainage and the Water Environment) (**TR010066/APP/6.1**) details the drainage strategy proposed for the Scheme to attenuate new drainage systems to the greenfield runoff rate and existing modified drainage systems would see no increase in the existing runoff rate. Therefore, there would be no change in the level of impact of the Scheme on ecological features from hydrological changes. A significant cumulative effect is not anticipated (identified as **neutral**) in ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**). Effects during operation on mutual receptors are anticipated to be neutral or slight adverse, and due to the nature and scale of the effects it is not anticipated that there would be significant cumulative effects.

Receptor	Air quality	Biodiversity	Cultural Heritage	Landscape and visual effects	Geology and soils	Population and human health	Noise and vibration	Road Drainage and the Water Environment	Significance of combined effects
								Increased area of hardstanding, River Sowe, Smite Brook and Herald Way March GWDTE- **Neutral or Slight adverse**	
Landscape and visual	None	None	None	Landscape Character: PLCA 1- Walsgrave Hill and Valley including Hungerley Hall Farm – **Year 1 Moderate adverse, Year 15 Neutral** PLCA 2 – Coombe Abbey Park and Old Lodge Farm– **Year 1 Slight adverse, Year 15 Slight beneficial** PLCA 3 – Gainford Rise Open Space (Smite Brook) and Binley– **Year 1 Slight adverse, Year 15 Neutral** PLCA 4 – Sowe Valley/ Dorchester Way– **Year 1 Slight adverse, Year 15 Neutral** Effects on green belt (openness): **Year 1 – Minor adverse** **Year 15 – Slight adverse**	None	None	None	None	No significant effects are anticipated.
Geology and soils	None	None	None	None	Agricultural soils- **Neutral**	None	None	None	No significant effects are anticipated
Heritage assets	None	None	None	None	None	None	None	None	No significant effects are anticipated

Summary of single project effects

Construction

15.7.3. During construction, there are multiple effects on some human receptors at Hungerley Hall Farm due to land take, access, and construction noise. Whilst there will be mitigation measures in place identified within the ES Chapters (**TR010066/APP/6.1**), it is anticipated that these effects would result in a **significant cumulative effect** on Hungerley Hall Farm.

15.7.4. There are multiple effects noted on Coombe Pool SSSI, relating to hydrology, air quality, noise, habitat loss and impacts related to the spread of INNS. These effects are assessed in ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**), and mitigation measures (both embedded and essential) identified which are summarised in section 8.10 of that Chapter. The residual effects are anticipated to be 'large adverse' and therefore represent a **significant cumulative effect**.

15.7.5. There are multiple effects identified on Smite Brook, Coombe Pool and Withy Brook in relation to geology and soils, and road Drainage and the Water Environment. These are identified as neutral and slight adverse. Mitigation measures are identified in ES Chapter 9 (Geology and Soils) (**TR010066/APP/6.1**) and ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**) to appropriately manage contamination and accidental leakage or spillages. Therefore, it is not anticipated that these would result in a significant cumulative effect on these receptors.

Operation

15.7.6. During operation, there are multiple effects identified on Hungerley Hall Farm. Year 1 and 15 visual effects at Hungerley Hall Farm are anticipated to be significant (large adverse during year 1 and moderate adverse during year 15). Farming effects are anticipated to be moderate adverse in relation to permanent land take, access and infrastructure disruption and farming activities, and noise. Therefore, it is anticipated that Hungerley Hall Farm would experience a significant cumulative effect. Mitigation planting to screen visual impacts has been included in ES Chapter 7 (Landscape and Visual Effects) (**TR010066/APP/6.1**), and any issues relating to a claim or compensation matters would be negotiated in accordance with statutory compensation provisions, as outlined in ES Chapter 12 (Population and Human Health) (**TR010066/APP/6.1**).

15.7.7. There are multiple effects identified on Smite Brook, Coombe Pool and Withy Brook. These are identified as neutral. Therefore, it is not anticipated that these would result in a significant cumulative effect on these receptors.

15.8. Assessment of cumulative effects

15.8.1. Only those developments that have been included in the short list in ES Appendix 15.1 (Cumulative Effects Long and Short List) (**TR010066/APP/6.3**) have been brought through to the assessment of different project effects.

15.8.2. The assessment of different project effects for each discipline is presented in Table 15-6 for construction and Table 15-7 for operation.

Table 15-6: Potential significant cumulative residual effects during construction of the Scheme and shortlisted developments in ES Appendix 15.1 (Cumulative Effects Long and Short List) (**TR010066/APP/6.3**)

Discipline	Cumulative development (Planning reference)	Are significant cumulative effects likely?	Reason
Biodiversity	R23/1027	No significant cumulative effects likely.	Following a review of the Environmental Statement for the Frasers Campus development no significant cumulative effects upon ecological features have been identified. The level of impact (including permanence, extent, magnitude, frequency and timing) of the impacts of the development on ecological features has been considered in conjunction with impacts and effects of the Scheme identified within ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**), and also in relation to the study areas and ZoI of identified ecological features for the Scheme. Whilst some of the identified effects of the Frasers Campus development are also identified for the Scheme, the cumulative level of impact does not constitute a significant effect in accordance with DMRB LA 108: Biodiversity.
	R19/1540	No significant cumulative effects likely.	Following a review of the ES for the Prospero Ansty – Employment Area development no significant cumulative effects upon ecological features have been identified. The level of impact (including permanence, extent, magnitude, frequency and timing) of the impacts of the development on ecological features has been considered in conjunction with impacts and effects of the Scheme identified within ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**), and also in relation to the study areas and ZoI of identified ecological features for the Scheme. Whilst some of the identified effects of the Prospero Ansty – Employment Area development are also identified for the Scheme, the cumulative level of impact does not constitute a significant effect in

Discipline	Cumulative development (Planning reference)	Are significant cumulative effects likely?	Reason
			accordance with DMRB LA 108: Biodiversity.
Landscape and visual	R23/1027	No significant cumulative effects likely.	There would not likely be significant construction stage cumulative effects on landscape character or visual amentiy. The tempoprary nature of the construction phases of the respective developments further limits the potential for significant combined effects. Due to the distance from the Scheme and the position of the site to the north of the M6 there is very limited potential for cumulative effects on visual receptors. Despite being located within the same landscape character area as the Scheme, Dunsmore Parklands (Warwickshire County Council), construction stage cumulative effects are unlikely due to separation by distance, topography and landcover.
	R19/1540	No significant cumulative effects likely.	There would not likely be significant construction stage cumulative effects on landscape character or visual amentiy. The tempoprary nature of the construction phases of the respective developments further limits the potential for signiifcant combined effects. Due to the distance from the Scheme and the position of the site adjacent existing industrial land uses there is very limited potential for cumulative effects on visual receptors. Construction stage cumulative effects on landscape are unlikely due to separation by distance, topography and landcover.
Geology and Soils	R23/1027	No significant cumulative effects likely.	Due to the distance from the Scheme there are no mutual receptors identified for geology and soils and therefore no significant cumulative effects are anticipated.
	R19/1540	No significant cumulative effects likely.	Due to the distance from the Scheme there are no mutual receptors identified for geology and soils and therefore no significant cumulative effects are anticipated.
Population and Human Health	R23/1027	No significant cumulative effects likely.	Due to the distance from the Scheme there are no mutual receptors identified for population and human health and therefore no significant cumulative effects are anticipated.
	R19/1540	No significant cumulative effects likely.	Due to the distance from the Scheme and that most aspects of population and human health are not scoped into the ES, there are no mutual receptors identified for population and human health and therefore no significant cumulative effects are anticipated.

Discipline	Cumulative development (Planning reference)	Are significant cumulative effects likely?	Reason
Cultural Heritage	R23/1027	No significant cumulative effects likely.	Due to the distance from the Scheme there are no mutual receptors identified for cultural heritage and therefore no significant cumulative effects are anticipated.
	R19/1540	No significant cumulative effects likely.	There are no significant cumulative effects anticipated upon cultural heritage. A slight significance is identified within R19/1540 for Coombe Abbey Park. The effect derives from the application making changes to the setting of the northern part of Coombe Abbey Park, which does not interact with the Scheme.
Road Drainage and the Water Environment	R23/1027	No significant cumulative effects likely.	There are no significant cumulative effects anticipipated upon surface water and groundwater features, during construction. The magnitude of the impacts of the development upon surface water and groundwater features has been considered in conjunction with impacts and effects of the Scheme identified within ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**). The location of the proposed development is upstream and outside the 1km study area of the Scheme. The proposed development is located in an area where low permeability strata is present, with limited hydraulic connection to aquifer units (groundwater receptors) within the Scheme. In additon to this, the development is located in an area of largely low probability of flooding. Due to the distance and the limited flood risk / flow pathway between the development and the Scheme, there would be no adverse impact to either scheme following appropriate mitigation applied during construction. The temporary nature of the construction phases of the respective developments further limits the potential for significant combined effects. Therefore, impacts upon the water environment in relation to this Scheme will be negligible.
	R19/1540	No significant cumulative effects likely.	There are no significant cumulative effects anticipated upon surface water and groundwater features, during construction. The magnitude of the impacts of the development upon surface water and groundwater features has been considered in

Discipline	Cumulative development (Planning reference)	Are significant cumulative effects likely?	Reason
			conjunction with impacts and effects of the Scheme identified within ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**). The location of the proposed development is upstream, approximately 750m from the Scheme. Although the proposed development is located within the 1km study area, low permeability strata is present below ground, with limited hydraulic connection to aquifer units (groundwater receptors) within the Scheme. The proposed development is located in an area of largely low probability of flooding. Due to the distance and the limited flood risk / flow pathway between the development and the Scheme, there would be no adverse impact to either scheme following appropriate mitigation applied during construction. The temporary nature of the construction phases of the respective developments further limits the potential for significant combined effects. Therefore, impacts upon the water environment in relation to this Scheme will be negligible.

Table 15-7: Potential significant cumulative residual effects during operation of the Scheme and shortlisted developments in ES Appendix 15.1 (Cumulative Effects Long and Short List) (**TR010066/APP/6.3**)

Discipline	Cumulative development	Are significant cumulative effects likely?	Reason
Biodiversity	R23/1027	No significant cumulative effects likely.	Following a review of the ES for the Frasers Campus development no significant cumulative effects upon ecological features have been identified. The level of impact (including permanence, extent, magnitude, frequency and timing) of the impacts of the development on ecological features has been considered in conjunction with impacts and effects of the Scheme identified within ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**), and also in relation to the study areas and ZoI of identified ecological features for the Scheme. Whilst some of the identified effects of the Frasers Campus development are also identified for the Scheme, the cumulative level of impact does not constitute a significant effect in accordance with DMRB LA 108: Biodiversity.
	R19/1540	No significant cumulative effects likely.	Following a review of the ES for the Prospero Ansty – Employment Area development no significant cumulative effects upon ecological features have been identified. The level of impact (including permanence, extent, magnitude, frequency and timing) of the impacts of the development on ecological features has been considered in conjunction with impacts and effects of the Scheme identified within ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**), and also in relation to the study areas and ZoI of identified ecological features for the Scheme. Whilst some of the identified effects of the Prospero Ansty – Employment Area development are also identified for the Scheme, the cumulative level of impact does not constitute a significant effect in accordance with DMRB LA 108: Biodiversity.
Landscape and visual	R23/1027	No significant cumulative effects likely.	There would not likely be operational stage cumulative effects on landscape character or visual amentiy. Due to position north of the M6, distance from the Scheme, intervening topography, built form and vegeation, there would not likely be cumulative effects on visual receptors. Despite being located within the same landscape character type, as the Scheme, Dunsmore Parklands (Warwickshire County

Discipline	Cumulative development	Are significant cumulative effects likely?	Reason
			Council), no operational stage cumulative effects.
	R19/1540	No significant cumulative effects likely.	There would not likely be operational stage cumulative effects on landscape character and visual amenity. Due to adjacency to existing industry, distance from the Scheme, intervening topography, built form and vegetation, there would not likely be cumulative effects on visual receptors. Despite being located within the same landscape character area operational stage cumulative effects would be unlikely due to separation by distance and landcover.
Geology and Soils	R23/1027	No significant cumulative effects likely.	Due to the distance from the Scheme there are no mutual receptors identified for geology and soils and therefore no significant cumulative effects are anticipated.
	R19/1540	No significant cumulative effects likely.	Due to the distance from the Scheme there are no mutual receptors identified for geology and soils and therefore no significant cumulative effects are anticipated.
Population and Human Health	R23/1027	No significant cumulative effects likely.	Due to the distance from the Scheme there are no mutual receptors identified for population and human health and therefore no significant cumulative effects are anticipated.
	R19/1540	No significant cumulative effects likely.	Due to the distance from the Scheme and that most aspects of population and human health are not scoped into the ES, there are no mutual receptors identified for population and human health and therefore no significant cumulative effects are anticipated.
Cultural Heritage	R23/1027	No significant cumulative effects likely.	Due to the distance from the Scheme there are no mutual receptors identified for cultural heritage and therefore no significant cumulative effects are anticipated.
	R19/1540	No significant cumulative effects likely.	There are no significant cumulative effects anticipated upon cultural heritage. A slight significance is identified within R19/1540 for Coombe Abbey Park. The effect derives from the application making changes to the setting of the northern part of Coombe Abbey Park, which does not interact with the Scheme.
Road Drainage and the	R23/1027	No significant cumulative effects likely.	There area no significant cumulative effects anticipated upon surface water and groundwater features during opeartion. The magnitude of the impacts of the development upon surface water and groundwater

Discipline	Cumulative development	Are significant cumulative effects likely?	Reason
Water Environment			features has been considered in conjunction with impacts and effects of the Scheme identified within ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**). The location of the proposed development is upstream, outside the 1km study area of the Scheme. Furthermore, the proposed development is located in an area where low permeability strata is present, with limited hydraulic connection to aquifer units (groundwater receptors) within the Scheme. The proposed development is located in an area of largely low probability of flooding. Due to the distance and the limited flood risk / flow pathway between the development and the Scheme, there would be no adverse impacts. In additon to this, an appropriate and effective drainage strategy should attenuate any increase in runoff rates and volumes. Therefore, impacts upon the water environment in relation to this Scheme will be negligible.
	R19/1540	No significant cumulative effects likely.	There are no significant cumulative effects anticipated upon surface water and groundwater features during operation. The magnitude of the impacts of the development upon surface water and groundwater features has been considered in conjunction with impacts and effects of the Scheme identified within ES Chapter 13 (Road Drainage and the Water Environment) (**TR010066/APP/6.1**). The location of the proposed development is upstream, approximately 750m from the Scheme. Although the proposed development is located within the 1km study area, low permeability strata is present below ground, with limited hydraulic connection to aquifer units (groundwater receptors) within the Scheme. The proposed development is located in an area of largely low probability of flooding. Due to the distance and the limited flood risk / flow pathway between the development and the Scheme, there would be no adverse impacts. In additon to this an appropriate and effective drainage strategy should attenuate any increase in runoff rates and volumes. Therefore, impacts upon the water environment in relation to this Scheme will be negligible.

15.9. Conclusions

15.9.1. In summary, as a result of the residual effects of the Scheme as a single project, it is anticipated that there may be two significant cumulative effects during construction, in relation to Hungerley Hall Farm and Coombe Pool SSSI. Combined effects on Coombe Pool SSSI are also discussed in ES Chapter 8 (Biodiversity) (**TR010066/APP/6.1**).

15.9.2. During operation, as a single project is anticipated that there may be significant cumulative effects on Hungerley Hall Farm, due to visual effects in Year 1 and 15 of operation and impacts on farming, in relation to permanent land take, access and infrastructure disruption and farming activities.

15.9.3. Two developments met the criteria for inclusion in the short list of developments in ES Appendix 15.1 (Cumulative Effects Long and Short List) (**TR010066/APP/6.3**). It is not anticipated that the Scheme would result in any significant cumulative effects with these schemes. Whilst there are mutual receptors identified for Landscape and Visual and Biodiversity, it is not anticipated that these would give rise to a significant cumulative effect.

Acronyms

Acronym or initialism	Term
CEA	Cumulative Effects Assessment
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ES	Environmental Statement
GCN	Great-crested newt
GWDTE	Ground Water Dependant Terrestrial Ecosystem
IEMA	the Institute of Environmental Management and Assessment
INNS	Invasive Non-Native Species
LNR	Local Nature Reserve
LWS	Local Wildlife Site
NHLE	National Heritage List for England
NPS NN	National Networks National Policy Statement
PLCA	Project Landscape Character Area
SSSI	Site of Special Scientific Interest
ZoI	Zone of Influence

References

Coventry City Council. (2017). Coventry City Council Local Plan 2011-2031. [online] Available at: https://www.coventry.gov.uk/planning-policy/coventry-local-plan-2011-2031. Accessed April 2024

Department for Transport (2024) National Policy Statement for National Networks. Available online at: https://www.gov.uk/government/publications/national-networks-national-policy-statement

Environmental Impact Assessment (EIA) Directive (2014) Directive 2011/92/EU codified directives 85/337/EEC, 97/11/EC, 2003/35/EC and 2009/31/EC. Directive 2011/92/EU was amended by directive 2014/52/EU. Available online at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011L0092

Highways England (2020) Design Manual for Roads and Bridges DMRB LA 104 - Environmental assessment and monitoring (Revision 1). Available online at: https://www.standardsforhighways.co.uk/search/0f6e0b6a-d08e-4673-8691-cab564d4a60a

Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Available online at: https://www.legislation.gov.uk/uksi/2017/572/contents/made

Rugby Borough Council (2019). Rugby Borough Council Local Plan 2011- 2031. [online] Available at: https://www.rugby.gov.uk/w/local-plan-2011-2031 . Accessed April 2024.

The Planning Inspectorate (2019) Advice Note Seventeen: Cumulative effects assessment