
EAST YORKSHIRE SOLAR FARM

**East Yorkshire Solar Farm
EN010143**

Environmental Statement

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13. Transport and Access

13.1 Introduction

- 13.1.1 This chapter of the Environmental Statement (ES) presents the findings of an assessment of the likely significant effects from transport and access as a result of the proposed East Yorkshire Solar Farm (hereafter referred to as the 'Scheme'). For a description of the Scheme, refer to **Chapter 2: The Scheme, ES Volume 1 [EN010143/APP/6.1]**.
- 13.1.2 This chapter identifies and proposes measures to address the potential impacts and likely significant effects of the Scheme on transport and access, during the construction, operation, and decommissioning phases.
- 13.1.3 This chapter is supported by the following appendices in **ES Volume 2 [EN010143/APP/6.2]**:
- a. **Appendix 13-1: Legislation, Policy and Guidance (Transport and Access);**
 - b. **Appendix 13-2: Traffic Flow Diagrams;**
 - c. **Appendix 13-3: Communications with Local Highway Authorities;**
 - d. **Appendix 13-4: Transport Assessment [TA];** and
 - e. **Appendix 13-5: Framework Construction Traffic Management Plan [CTMP].**
- 13.1.4 This chapter is supported by the following figures in **ES Volume 3 [EN010143/APP/6.3]**:
- a. **Figure 13-1: Study Area;**
 - b. **Figure 13-2: Traffic Survey Locations;**
 - c. **Figure 13-3: Indicative HGV [Heavy Goods Vehicles] routing;**
 - d. **Figure 13-4: Roads likely to be used to access the Site;** and
 - e. **Figure 13-5: Study Area for Personal Injury Collision Data.**
- 13.1.5 This chapter should be read in conjunction with **Chapter 2: The Scheme** and **Chapter 12: Socio-economics and Land Use, ES Volume 1 [EN010143/APP/6.1]**.
- 13.1.6 A glossary and list of abbreviations are defined in **Chapter 0: Table of Contents, Glossary and Abbreviations, ES Volume 1 [EN010131/APP/3.1]**.
- 13.1.7 A Non-Technical Summary of the ES is presented in **ES Volume 4 [EN010143/APP/6.4]** and **ES Volume 1 [EN010143/APP/6.1]** comprises this report.

13.2 Legislation, Policy and Guidance

- 13.2.1 Legislation, planning policy, and guidance relating to transport and access and pertinent to the Scheme comprises of the documents listed below. More detailed information can be found in **Appendix 13-1, ES Volume 2 [EN010143/APP/6.2]**.

Legislative Framework

- 13.2.2 There is currently no specific legislation related to transport and access that should be referenced as part of the ES.

National Policy

- 13.2.3 National policy considered comprises:
- a. Overarching National Policy Statement for Energy (NPS EN-1) (Ref. 13-1);
 - b. National Policy Statement for Renewable Energy Infrastructure (EN-3) (Ref. 13-2);
 - c. National Policy Statement for Electricity Networks Infrastructure (EN-5) (Ref. 13-3);
 - d. Draft Overarching National Policy Statement for Energy (EN-1) (Draft NPS EN-1) (Ref. 13-4);
 - e. Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (Draft NPS EN3) (Ref. 13-5);
 - f. Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (Ref. 13-6);
 - g. National Planning Policy Framework (NPPF) (Ref. 13-7);
 - h. Department for Transport's (DfT) guidance on Travel Plans, Transport Assessments and Statements in Decision Taking (Ref. 13-8); and
 - i. DfT Circular 01/2022, Strategic road network and the delivery of sustainable development (Ref. 13-9).

Local Policy

- 13.2.1 Local policy considered comprises:
- a. East Riding of Yorkshire Council's Local Transport Plan (Ref. 13-10);
 - b. East Riding of Yorkshire Local Plan (2016) (Ref. 13-11);
 - c. Emerging East Riding of Yorkshire Local Plan (East Riding Local Plan Update 2020 – 2039: Proposed Submission Strategy Document Update 2022) (Ref. 13-12);
 - d. Selby District Council – Pre-submission Publication Local Plan (2022) (Ref. 13-13); and
 - e. North Yorkshire Local Transport Plan 4 (LTP4, 2016) (Ref. 13-14).

Guidance

- 13.2.1 Guidance considered comprises:
- a. Institute of Environmental Management and Assessment (IEMA) Guidelines – Environmental Assessment of Traffic and Movement (2023)¹ (hereafter referred to as the ‘IEMA Guidelines’) (Ref. 13-15);
 - b. IEMA (formerly Institute of Environmental Assessment [IEA]) Guidelines for the Environmental Assessment of Road Traffic (1993) (Ref. 13-16); and
 - c. Design Manual for Road and Bridges (DMRB) CD 123 Geometric Design of at Grade Priority and Signal-Controlled Junctions (Ref. 13-17).

13.3 Consultation

- 13.3.1 A scoping exercise was undertaken in September 2022 to establish the content of the assessment and the approach and methods to be followed.
- 13.3.2 The **Scoping Report (Appendix 1-1, ES Volume 2 [EN010143/APP/6.2])** was issued on 9 September 2022 and records the findings of the scoping exercise and details the technical guidance, standards, best practice and criteria to be applied in the assessment to identify and evaluate the likely significant effects of the Scheme on transport and access.
- 13.3.3 The **Scoping Opinion** was received on 20 October 2022 (**Appendix 1-2, ES Volume 2 [EN010143/APP/6.2]**). The feedback received from stakeholders at scoping and Applicant responses in relation to Transport and Access are presented in **Appendix 1-3: EIA Scoping Opinion Responses, ES Volume 2 [EN010143/APP/6.2]**. This is also summarised in **Table 13-1**.

Table 13-1. Scoping opinion responses (Transport and Access)

Consultee	Summary of comment	How matter has been addressed	Location of response
Planning Inspectorate (PINS)	Junction capacity assessments to review impact of development traffic	Further assessment has been undertaken within the ES based on ongoing discussion with the local highway authorities and National Highways. No junctions have been deemed necessary for assessment and have therefore been scoped out as there are no expected traffic	N/A

¹ The updated IEMA guidance on Environmental Assessment of Traffic and Movement was released in July 2023 during the preparation of this ES chapter; however, due cognisance has been paid to the new guidelines. Regardless, reference is still made to the now superseded 1993 Guidelines for the Environmental Assessment of Road Traffic.

Consultee	Summary of comment	How matter has been addressed	Location of response
		movements during the network peak hours.	
	Assessment of the impact of hazardous loads during construction on the local road network	This matter has been scoped out of assessment as battery energy storage systems (BESS) is no longer included within the design of the Scheme, and therefore no Battery Safety Fire Management Plan will be produced.	N/A
	Assessment of operational phase transport effects – The Inspectorate agrees that operational transport effects may be scoped out from further assessment.	The TA has assessed the impact of the expected 1-3 staff members on-site during operation.	Detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Assessment of decommissioning phase transport effects	The decommissioning phase will have similar effects to the construction phase; therefore, a separate quantitative assessment has not been carried out as the assessment is deemed representative of both construction and decommissioning scenarios.	Detailed in Section 13.7 of this chapter.
	Approach to assessing the traffic and access impacts	This has been developed further for the ES in this chapter following design changes after statutory consultation which is explained in full in the TA.	Detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .

Consultee	Summary of comment	How matter has been addressed	Location of response
	Study area – The ES should confirm the final study area for the assessment of transport and access and explain how it has been selected.	Figure 13-1: Study Area, ES Volume 3 [EN010143/APP/6.3] outlines the extent of the Study Area that has been considered for the transport and access assessment. The Study Area is discussed in section 13.4 of this Chapter.	As shown in Figure 13-1, ES Volume 3 [EN010143/APP/6.3] . Section 13.4 of this Chapter
	Baseline data – assessment of Personal Injury Accident (PIA) data within the local area	Discussed and elaborated on within this assessment.	As described in the section Road Safety and elaborated on within Section Accidents and Safety of this chapter.
	Baseline data – Census 2011: The Office for National Statistics began to publish new census data in Spring 2022. If travel modal share data is available, this should be used to inform the baseline in the ES.	The gravity model uses 2011 data. The Office for National Statistics has released population data from the 2021 Census; however, due to the impact of COVID-19, it is assumed that 2011 data will depict a more accurate reflection of future travel modes in the area as approximately 30% of respondents stated they worked from home.	Baseline data methodology detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Assessment of future traffic baseline data	Further details of the future baseline are provided within the chapter.	As detailed from Section 13-40 of this chapter.
	Outline the location and requirement for Automated Traffic Count (ATC) Surveys	ATC surveys have been undertaken in key locations within the local area in agreement with the highways authority.	As detailed in Appendix 13-2: Traffic Flow Diagrams, ES Volume 2 [EN010143/APP/6.2] .
	Outline details of the impact	All vehicles have been considered and predicted flow	As detailed in Section 13-45 of this chapter.

Consultee	Summary of comment	How matter has been addressed	Location of response
	assessment to be carried out	numbers have been presented and the impact analysed as part of this ES.	
	Outline details of any recommended Highway improvements that would be introduced	Additional mitigation measures are considered within this ES.	As detailed in Section 13-41 of this chapter.
	Outline details of the impact assessment methodology to be followed	Details provided as part of this ES reflect changes to the updated IEMA Guidelines.	As detailed in Section 13-16 of this chapter.
	Outline details of the impact magnitude criteria to be followed	The impact magnitude criteria considers all vehicle types associated with the Scheme.	As detailed in Table 13-24 of this chapter.
National Highways (and Jacobs Systra Joint Venture (JSJV) on behalf of National Highways)	Provide details of the relevant national and local planning policy context.	Relevant policy has been taken into account in and a relevant TA has been produced.	As detailed in Section 13-1 of this chapter, and Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Construction workers – it is stated that the numbers are expected to be a worst case. It is considered that this should be detailed by AECOM within a Construction Traffic Management Plan (CTMP).	This has been taken into account and a CTMP has been produced for the DCO Application.	As detailed in Appendix 13-5: Framework CTMP, ES Volume 2 [EN010143/APP/6.2] .
	Details of construction traffic and site access	This is covered within this ES, and further relevant information has been set out in the TA and Framework CTMP.	As detailed in section 13.6 and included in Appendix 13-4: TA and Appendix 13-5: Framework CTMP, ES Volume 2 [EN010143/APP/6.2] .
	Construction Environmental	A Framework CEMP has been prepared as	Framework CEMP [EN010143/APP/7.7] .

Consultee	Summary of comment	How matter has been addressed	Location of response
	Management – It is stated that a detailed Construction Environmental Management Plan (CEMP) will be produced by the appointed construction contractor. This approach is considered acceptable.	part of the DCO Application, which will be updated by the appointed construction contractor, and agreed to with the relevant local planning authorities, in advance of construction (forming the Detailed CEMP).	
	Decommissioning – given the proposed timescales between the site becoming operational and decommissioning, it is considered that the Decommissioning Environmental Management Plan (DEMP) should be prepared at the time of decommissioning.	A Framework DEMP has been prepared as part of the DCO Application, which will be updated by the appointed decommissioning contractor, and agreed to with the relevant local planning authorities in advance of decommissioning (forming the Detailed DEMP).	Framework DEMP [EN010143/APP/7.9].
	Study area – It is considered that the Strategic Road Network (SRN) should be included within the Study Area – namely M62 Junction 37.	This has been scoped out as it is anticipated that the majority of HGV traffic and all tractor/ trailer traffic will not use this junction.	N/A.
	Baseline information – With regards to the data sources, it is considered that the SRN should be included within the study area.	Consideration of Cumulative Developments is considered in this ES.	As detailed in Section 13-65 of this chapter.
	Baseline information – It is welcomed that the	Noted.	As detailed in Section 13.7 of this chapter.

Consultee	Summary of comment	How matter has been addressed	Location of response
	scenarios will be built on a 'first principles' approach to trip generation. This is considered to be the most accurate methodology.		
	Baseline information – It is considered that using the local Middle Layer Super Output Area (MSOA) will only account for trips ends that occur in the MSOA.	Alternative methodology has been explored as part of the ES and is further explained in the TA.	As detailed in Section 13.7.2 of this chapter and Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Planned Surveys – It is considered that the SRN should be included within the Study Area.	Information on the volume of traffic potentially using the SRN has been included.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Construction – It is noted that it is not just HGV movements in the network peaks which need to be assessed. Workers should also be assessed.	The impact of construction worker, HGV, and tractor-trailer movements have all been assessed as part of the TA.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Operation – It is considered that the operational phase of the development proposals is likely to have less impact at the SRN than the construction phase. However, this will need to be demonstrated in the TA by AECOM, using a 'first principles' approach to trip	Noted. This has been considered in the TA.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .

Consultee	Summary of comment	How matter has been addressed	Location of response
	generation for this phase.		
	Decommissioning - given the proposed timescales, it is considered that the DEMP should be prepared at the time of decommissioning.	Noted. This has been considered as part of the Framework DEMP submitted with the DCO Application. As noted previously, the Framework DEMP will be updated by the appointed decommissioning contractor, and agreed to with the relevant local planning authorities in advance of decommissioning (forming the Detailed DEMP).	Framework DEMP [EN010143/APP/7.9].
	Mitigation – considered acceptable, although it is considered that a further measure could be a restriction on start and end times to construction shifts could be used to minimise impact in network peak hours.	Further details are provided in this ES.	As detailed in Section 13.4.7 of this chapter.
	Assumptions, limitations and uncertainties – It is considered that by way of this TM, that the SRN should be included in the study area.	The SRN has been included within the Study Area.	As detailed in Section 13.4.15 of this chapter.
	Summary of elements scoped in and scoped out – We agree with the elements that have been scoped in, however, evidence	A TA is provided including suitable evidence on which elements have been scoped in or out.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2].

Consultee	Summary of comment	How matter has been addressed	Location of response
	will have to be provided within the TA.		
	Traffic Assessment – With regards the TA, a number of parameters need to be given due cognisance within the assessment.	This has been taken into account within the TA.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	CTMP – It is considered that a number of parameters relating to the routing and expected vehicle numbers should be taken into account in the CTMP.	This has been taken into account within the Framework CTMP provided with the ES.	As detailed in Appendix 13-5: Framework CTMP, ES Volume 2 [EN010143/APP/6.2] .
North Yorkshire County Council and Selby District Council	Temporary access, storage and working areas should be taken into account as part of the assessment.	A Framework CTMP and TA have been prepared. These consider temporary access, storage and working areas.	As detailed in Appendix 13-4: TA and Appendix 13-5: Framework CTMP, ES Volume 2 [EN010143/APP/6.2] .
Foggathorpe Parish Council	Concerns for how any delays and blockages from large vehicles getting stuck on verges or along smaller lanes may be addressed, as to mitigate impacts, with note to emergency services. The Parish Council also ask that all footpaths that will no longer be usable following construction, are set out in a separate appendix.	Embedded mitigation measures set out how matters of concern raised by the Parish Council along the road network have been considered. A high-level review of large vehicle routing has also been undertaken. Additionally, as described in ES Chapters 2: The Scheme and 15: Socio-economics and Land Use and the Framework Public Rights of Way [PRoW] Management Plan, all existing PRoW will be maintained (and if	As detailed in Chapter 2: The Scheme and Chapter 15: Socio-economics and Land Use, ES Volume 1 [EN010143/APP/6.1] and the Framework PRoW Management Plan [EN010143/APP/7.13] . Embedded mitigation also detailed within this chapter.

Consultee	Summary of comment	How matter has been addressed	Location of response
		necessary, temporarily diverted) and new Permissive Paths will be created.	
Network Rail	A transport assessment must identify haulage routes for HGVs and traffic, and must be considered with particular note to utilised railway assets such as bridges and level crossings during construction and operation.	This has been taken into account within the TA, and the HGV routing is set out in Figure 13-3.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] , and Figure 13-3: Indicative HGV Routing, ES Volume 3 [EN010143/APP/6.3] .

13.3.4 Ongoing consultation has been undertaken with key stakeholders, including PINS, East Riding of Yorkshire Council and North Yorkshire Council. Further details are provided below.

13.3.5 PINS commented as follows:

- a. The **Scoping Report** (provided in **Appendix 1-1, ES Volume 2 [EN010143/APP/6.2]**) states that *“There are no nearby road features which suggest that the transfer of materials poses a risk beyond that which would be expected on the general highway network.”* Limited explanation is provided to support this conclusion. PINS has considered the characteristics of the Scheme and considers that this matter may be scoped out from further assessment, however the ES should explain the measures employed to ensure safe vehicular transport of components such as panels and batteries to and from the site.

13.3.6 As noted in **Table 13-1**, it is considered that the transportation of hazardous loads can be scoped out of the assessment as the BESS is no longer part of the Scheme and, therefore, hazardous loads are not planned.

13.3.7 The Highways departments at East Riding of Yorkshire Council and North Yorkshire County Council (now called North Yorkshire Council following reorganisation into a new single unitary council for North Yorkshire in April 2023) were contacted by email on 13 February 2023 and asked to provide comment/agreement of the proposed methodology for the assessment of transport and access impacts, as set out within Chapter 13 (Transport and Access) of the **Scoping Report (Appendix 1-1, ES Volume 2 [EN010143/APP/6.2])**. This included the 19 ATC locations described in Figure 13-1 of the Scoping Report. The Scoping Report was provided with the email.

- 13.3.8 North Yorkshire County Council Highways department responded on 16 February 2023 and commented that they have reviewed the Transport and Access section of the **Scoping Report (Appendix 1-1, ES Volume 2 [EN010143/APP/6.2])** and consider that it is a comprehensive piece of work, and no queries were made. They also noted that North Yorkshire County Council will be consulted along with the other consultees further as the Scheme progresses.
- 13.3.9 East Riding of Yorkshire Council Highways department responded on 21 March 2023 and commented that overall, the **Scoping Report (Appendix 1-1, ES Volume 2 [EN010143/APP/6.2])** was considered acceptable and robust by East Riding of Yorkshire Council. Their supplementary comments are summarised below:
- a. *“There will be a very busy construction phase with a very limited number of movements for the operational phase. Therefore, a Transport Assessment will be required to take all the local highways into account which are outlined in the study area in the Scoping Report, including road safety records;*
 - b. *Assessment should take place on any other parts of the highway network that construction vehicles are likely to use between the Trunk Roads and the site accesses;*
 - c. *Junction studies maybe required for junctions which maybe at or near capacity as well as any that would have a significant amount of additional traffic throughput;*
 - d. *Any access points should have the requisite visibility in accordance with Manual for Streets (<30mph) and DMRB (>40mph) especially on the classified public highways. Any access point should be constructed to an acceptable standard by the East Riding of Yorkshire Council highway maintenance team. The proposed accesses should be kept to a minimum and should be from higher-classified highway where possible; and*
 - e. *A CTMP would be required”.*
- 13.3.10 The majority of the above comments made by East Riding of Yorkshire Council have been considered as part of this chapter; however, elements such as junction studies and visibility assessments have been considered within the **TA (Appendix 13-4, ES Volume 2 [EN010143/APP/6.2])** and the **Framework CTMP (Appendix 13-5, ES Volume 2 [EN010143/APP/6.2])**, which are appended to this chapter.
- 13.3.11 Copies of the email consultation with East Riding of Yorkshire Council and North Yorkshire County Council are included in **Appendix 13-3: Communications with Local Planning Authorities, ES Volume 2 [EN010143/APP/6.2]**.
- 13.3.12 Further consultation in response to formal pre-application engagement was undertaken through the Preliminary Environmental Information Report (PEI Report), issued in May 2023. Responses to this statutory consultation are presented in the **Consultation Report [EN010143/APP/5.1]. Table 13-2** outlines the statutory consultation responses relating to transport and access and how these have been addressed through the ES.

13.3.13 Further detail on consultation can also be found in **ES Chapter 4: Consultation, ES Volume 1 [EN010143/APP/6.1]**.

Table 13-2. Statutory consultation responses (Transport and Access)

Consultee	Summary of comment	How matter has been addressed	Location of response
National Highways	Engage with DfT Circular 01/2022 scoping document regarding the SRN.	The assessment has been developed with due cognisance to the guidance.	As detailed in Section 13.2.2.
	Baseline traffic and construction traffic should be considered at any SRN junctions, in terms of increase in two-way traffic, and junction modelling scenarios if required.	This has been scoped out as it is anticipated that the majority of HGV traffic and all tractor-trailer traffic will not use any SRN junction.	As detailed in Table 13-3 .
	Any Abnormal Indivisible Load (AIL) movements should be discussed and agreed with National Highways in advance.	Details of AIL movements have been provided.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Further detail should be provided in relation to the specific first principles data underpinning the proposed development trip generation before first principles trip generation can be accepted by National Highways.	Further details of the approach are provided in the TA.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Further detail needed to justify the proposed figure of 50% of staff travelling to site via minibus.	Further details of the approach are provided in the TA.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Further details needed to justify a	Further details of the approach are provided in the TA.	As detailed in Appendix 13-4: TA,

Consultee	Summary of comment	How matter has been addressed	Location of response
	car share ratio of 1.5 workers per car.		ES Volume 2 [EN010143/APP/6.2].
	Need confirmation of the peak arrival/departure profile during construction instead of average movements.	Further details of the approach are provided in the TA.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2].
	Appropriate Personal Injury Collision (PIC) analysis may be needed if there is impact at a SRN junction.	Appropriate information provided in the TA.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2].
	If there is an impact at a SRN junction, an appropriate consideration of operation impacts and mitigation will be required and need to be agreed with National Highways.	Noted.	Not required
	A gravity model is accepted but the methodology should be displayed in data before being accepted fully. Further consideration given to whether construction staff are local or staying in hotels.	Further details of the approach are provided in the TA.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2].
	Trip assignment must suitably consider the M62 Junction 37 within the overall impact study area and provide evidence as to the two-way trip impact at the peak of construction. Over 30 two-way trips must be considered further.	This has been scoped out as it is anticipated that the majority of HGV tractor/ trailer traffic will not use this junction.	As detailed in Table 13-3.

Consultee	Summary of comment	How matter has been addressed	Location of response
	List of measures set out that should be included in the CTMP.	Noted.	As detailed in Appendix 13-5: Framework CTMP, ES Volume 2 [EN010143/APP/6.2] .
North Yorkshire Council	List of measures set out that should be included in the CTMP.	Noted.	As detailed in Appendix 13-5: Framework CTMP, ES Volume 2 [EN010143/APP/6.2] .
	Consideration of the Highway Impact on the A63 and on Main Street in Hemingbrough, as well as the Transpennine Trail along the River Ouse.	The A63 is considered within the assessment, however Main Street is no longer relevant following an update to the roads used in construction.	Considered in Section 13.7 and in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Inclusion of a list of Cumulative Developments set out nearby to Drax to be considered within assessment.	Considered in the cumulative developments section of this report and detailed within the TA.	Considered in Section 13.10 and in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
East Riding of Yorkshire Council	Passing places to be considered along roads with medium sensitivity or higher.	Where impact on the road links is considered to be significant adverse, additional mitigation has been set out.	Considered in Section 13.8.
	HGV movements should be restricted between the hours of 16:00-18:00.	These restricted times have been applied for the construction phase.	Working hours set out in paragraphs 13.4.7–13.4.11. It is anticipated that HGV movements would be reduced during certain times of the day (e.g., between 06:00 and 09:00, as well as 16:00 and 20:00), to avoid increasing traffic levels on the surrounding highway

Consultee	Summary of comment	How matter has been addressed	Location of response
			network during the weekday peak hours.
	Transport Assessment to be included as part of the DCO application.	A TA is provided as part of this DCO Application.	As detailed in Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2] .
	Construction Traffic Management Plan to be included as part of the DCO application.	A CTMP is provided as part of this DCO Application.	As detailed in Appendix 13-5: Framework CTMP, ES Volume 2 [EN010143/APP/6.2] .
	Abnormal Loads movements, must submit a construction traffic management plan for approval to the local council.	Detailed as part of this ES Chapter.	As detailed in Section 13.6.
	Make early contact with National Highways due to use of SRN.	Detailed within this table.	See Table 13-1 .
	Use of Traffic Regulation Orders or lining/signing works must be arranged via the council.	Noted.	As detailed in Appendix 13-5: Framework CTMP, ES Volume 2 [EN010143/APP/6.2] .

13.4 Assessment Methodology

Assumptions, Limitations and Uncertainties

- 13.4.1 The information presented in this ES chapter is accurate at the time of reporting and is based on the maximum extent of land required for its construction, operation (including maintenance and repairs) and decommissioning.
- 13.4.2 The Site is located within a rural area where access is likely to be constrained in terms of highway design and access to public transport. It is assumed that the road network and local services will remain as it is currently (i.e., the future baseline will broadly align with the present-day baseline).
- 13.4.3 Baseline traffic surveys are representative of average weekday traffic conditions and construction traffic flows have been based upon a best estimate of likely construction requirements.
- 13.4.4 The approach used within this chapter considers a worst-case assessment, based on the construction period's highest number of hourly two-way road trips (for vehicles) and the construction period's highest daily two-way

movements for HGVs. The assessment considers that construction will be occurring across multiple compounds simultaneously, which provides a robust worst-case scenario.

- 13.4.5 The impact of traffic during the construction and decommissioning phases are anticipated to be the most significant stage of the Scheme, with the operational phase anticipated to create less traffic. Decommissioning is anticipated to take place approximately 40 years after the start of operation and it is expected to result in less traffic than the construction phase (and over a shorter period); therefore, decommissioning is expected to lead to effects that are no worse than during the construction phase. The decommissioning phase has therefore not been specifically modelled and the effects and mitigation for construction are considered applicable for decommissioning.

Construction Programme and Working Hours

- 13.4.6 The earliest construction would start on the Scheme would be in 2025, with an estimated programme of 24 months, meaning the Scheme could be operational by 2027. Should the construction period be extended, then the impact on peak hour and daily flows would then be reduced across the construction period. The approach assessed in this chapter is therefore considered to be worst-case.
- 13.4.7 Core construction working hours are set out in **Chapter 2: The Scheme, ES Volume 1 [EN010143/APP/6.1]** and are expected to be within a 12-hour period during the summer months, with staff working a maximum of 12-hour shifts (Monday to Friday 07:00 to 19:00). This means peak construction traffic movements of staff will likely fall between 06:00 to 07:00 and 19:00 to 20:00 during a working weekday. These hours represent the Scheme peaks and not the road network peaks, which will see no generated traffic (e.g., within 08:00-09:00 and 17:00-18:00). Hence, the road network peak hours have not been evaluated at this stage which is elaborated on within the TA.
- 13.4.8 During the winter months, it is possible that workers could be expected, possibly arriving at the Site later and departing the Site earlier and working shorter hours. These traffic movements could potentially occur closer to the road network peak hours; however, the percentage increase in traffic would likely be lower in this situation due to higher traffic baseline in the road network peak hours. In terms of the assessment of significance of effects for this ES, assessment of worker traffic during the summer months therefore represents a robust worst-case scenario.
- 13.4.9 Core working hours for Saturdays will be 07:00 to 13:00, with no work planned for Sundays or Bank Holidays unless crucial to construction, such as Horizontal Directional Drilling (HDD) which will accommodate the Grid Connection Corridor, and is necessary to be a continuous activity, or in an emergency. Extended working hours will be notified to the relevant local planning authority(s).
- 13.4.10 It is anticipated that HGV movements would be reduced during certain times of the day (e.g., between 06:00 and 09:00, as well as 16:00 and 20:00), to avoid increasing traffic levels on the surrounding highway network during the weekday peak hours. This would be monitored through the use of a Delivery Management System.

- 13.4.11 There will be no HGV arrivals or departures on Saturdays before 08:00 or after 13:00.
- 13.4.12 The full construction programme for the 24-month period is set out in Table 18 of **Appendix 13-4: TA, ES Volume 2 [EN010143/APP/6.2]**.

Matters Scoped in/Scoped out

- 13.4.13 A summary of the potential impacts scoped in and out of the assessment of transport and access for the construction, operation and maintenance and decommissioning phases are presented in **Table 13-3**. This selection is the same as that presented within the PEI Report at statutory consultation stage.

Table 13-3. Potential impacts scoped in and out of the EIA

Potential impacts	Scoped In / Out
Severance – The temporary increase in traffic could generate potentially significant impacts on severance.	In
Driver delay– The temporary increase in traffic could have potentially significant impacts on driver delay.	In
Pedestrian delay – Significant effects related to pedestrian delays are not expected due to the low numbers of pedestrians potentially affected by the Scheme.	Out
Non-motorised user (NMU) amenity – The temporary increase in traffic could have potentially significant impacts on pedestrian, equestrian and cyclist amenities.	In
Fear and intimidation – The temporary increase in traffic could have potentially significant impacts on fear and intimidation.	In
Road safety and accidents – The temporary increase in traffic could have potentially significant impacts on road safety.	In
Total traffic increase – The temporary increase in traffic could have potentially significant impacts.	In
HGV increase – The temporary increase in traffic could have potentially significant impacts in relation to HGVs.	In
Hazardous loads – There are no nearby road features which suggest that the transfer of materials poses a risk beyond that which would be expected on the general highway network (as agreed with PINS).	Out

- 13.4.14 A quantitative assessment has been conducted for the construction phase impacts, whilst a qualitative assessment has been conducted for the operational and decommissioning phases. This is due to low vehicle numbers associated with operation and maintenance activities (as agreed with PINS) and the decommissioning of the Scheme expected to result in less traffic than the construction phase; therefore, decommissioning is expected to lead to effects that are no worse than during the construction phase (as agreed with PINS).

Study Area

- 13.4.15 The Site lies within the administrative areas of East Riding of Yorkshire Council and North Yorkshire Council. The Solar PV Site and the Interconnecting Cable Corridor lie wholly within the East Riding of Yorkshire, whilst the Grid Connection Corridor which links the Solar PV Site to National Grid Drax Substation, and the Site Accesses lie within the East Riding of Yorkshire and North Yorkshire. This assessment has considered activities within the Solar PV Site, Ecology Mitigation Area, Interconnecting Cable Corridor, Grid Connection Corridor, and Site Accesses, although not all areas need to be explicitly mentioned in the assessment. For example, the Ecology Mitigation Area is not specifically referred to, but any traffic needed to deliver and maintain this area that will use the public highway has been included in the overall trip numbers that are assessed..
- 13.4.16 The landscape features immediately within the Study Area around the Site comprise a number of villages, including Foggathorpe, Spaldington, and Brind. To the north-east of the Site is Holme-On-Spalding-Moor, Bubwith to the north-west of the Site, and Howden to the south of the Solar PV Site. Drax village is to the south of Drax Power Station; the latter is where the National Grid's Drax Substation is located, which the Grid Connection Cable route connects to.
- 13.4.17 To the north of the Site runs the A163, the A614 runs to the east and, the M62 runs to the south of the Site. The B1228 is the connecting north to south transport route that cuts through the Solar PV Site. The railway line also cuts through the Solar PV Site between Solar PV Areas 3b and 3c travelling west to east.
- 13.4.18 There is an extensive network of roads within the Order limits, comprising:
- a. A63 (Barnhill Lane, Hull Road);
 - b. A614 (Thorpe Road);
 - c. A163 (Main Street, Selby Road);
 - d. A645;
 - e. M62;
 - f. B1228 (Street Lane, Wood Lane);
 - g. Wood Lane;
 - h. Tottering Lane;
 - i. Ings Lane;
 - j. Willitof Road;
 - k. Spaldington Lane;
 - l. Brind Lane;
 - m. Rowlandhall Lane;
 - n. Bell Lane;
 - o. New Road;
 - p. Carr Lane;
 - q. Pear Tree Avenue;

- r. Newsholme Road;
 - s. School Road;
 - t. Chapel Balk Road; and
 - u. Barmby Ferry Road.
- 13.4.19 The extent of the Study Area for assessment in terms of highway impact has been agreed in consultation with National Highways as the highway authority for the SRN and with East Riding of Yorkshire Council and North Yorkshire Council (formerly North Yorkshire County Council) as highway authorities for the Local Road Network (LRN).
- 13.4.20 Currently, no upcoming road network improvements are planned by the two councils within the Study Area apart from discussion for network improvements at Goole, and at the M62 junction 36. This area lies outside of the Site to the south of the Solar PV Area.
- 13.4.21 The roads within the Study Area are indicated in **Figure 13-1, ES Volume 3 [EN010143/APP/6.3]**; however, as displayed in **Figure 13-4, ES Volume 3 [EN010143/APP/6.3]**, not all these roads are planned to be utilised for HGV and staff vehicle movements.

Methodology

- 13.4.22 This section presents the methodology used to assess the likely transport and access effects, including the criteria for determining the sensitivity of receptors and the magnitude of change from the baseline condition for construction phase traffic.
- 13.4.23 As stated previously, the impact of additional development-generated traffic on the surrounding road network during the construction and decommissioning phases are anticipated to be the most significant stage of the Scheme, with the operational phase anticipated to create much less traffic. Decommissioning is anticipated to take place approximately 40 years after the start of operation and it is expected to result in less traffic than the construction phase. Therefore, decommissioning is expected to lead to effects that are no worse than during the construction phase. The decommissioning phase has therefore not been specifically modelled and the effects and mitigation for construction are considered applicable for the decommissioning phase too.
- 13.4.24 The methodology for assessing the impact of development-generated traffic is based on that outlined in the IEMA Guidelines (Ref. 13-15).
- 13.4.25 The IEMA Guidelines state that a link on the highway network should be included within the study if one of the following criteria is met:
- a. **Rule 1** – Include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%); or
 - b. **Rule 2** – Include highway links of high sensitivity where traffic flows have increased by 10% or more.

13.4.26 The IEMA Guidelines recommend that several environmental effects may be considered important when considering traffic from an individual development. This chapter assesses the following effects:

- a. Total traffic increase;
- b. HGV increase;
- c. Severance;
- d. NMU amenity;
- e. Driver delay;
- f. Fear and intimidation; and
- g. Accidents and safety.

13.4.27 The significance of effect is determined through consideration of two elements: the magnitude of the impact and the sensitivity of the receptor. The following sections outline the approach that has been used to determine to what extent an effect is environmentally significant.

13.4.28 The overall effect will be determined by measuring the magnitude of the impact following the introduction of embedded mitigation measures (where applicable) against criteria including: the predicted increase in traffic; the type and sensitivity of the receptor; and the type of impact.

Receptor Sensitivity

13.4.29 As stated above the methodology for assessing the impact of the Scheme’s generated traffic will be based on that outlined in the IEMA Guidelines. The general criteria for defining the importance or sensitivity of receptors are set out in **Table 13-4**.

Table 13-4. Receptor Sensitivity Criteria (Transport and Access)

Receptors	Built Environment Indicator on Highway Link	Highway Link Sensitivity to Changes in Traffic Flow
Residents	Residential properties	High: Where there is a high concentration of properties with direct frontage to the highway link being used as a construction route.
		Medium: Where there are several properties with direct frontage to the highway link being used as a construction route.
		Low: Where there are few properties with direct frontage to the highway link being used as a construction traffic route.
		Very Low: Where there are no properties with direct frontage to the highway link being used as a construction traffic route.
Workers	Offices, industrial units,	High: Where there is a high concentration of offices/ other workplaces with direct frontage to the highway link being used as a construction route.

Receptors	Built Environment Indicator on Highway Link	Highway Link Sensitivity to Changes in Traffic Flow
	employment uses	<p>Medium: Where there are several offices/ other workplaces with direct frontage to the highway link being used as a construction route.</p> <p>Low: Where there are few offices/ other workplaces with direct frontage to the highway link being used as a construction traffic route.</p> <p>Very Low: Where there are no offices/ other workplaces with direct frontage to the highway link being used as a construction traffic route.</p>
Sensitive groups (children, elderly and disabled)	Schools, play areas, care/retirement homes, disabled parking bays	<p>High: Where there are multiple indicators of sensitive groups with direct frontage onto the highway link being used as a construction traffic route.</p> <p>Medium: Where one indicator of sensitive groups is present with direct frontage onto the highway link being used as a construction traffic route.</p> <p>Very Low: Where no indicator of sensitive groups is present.</p>
Sensitive locations (hospitals, places of worship, schools historic buildings)	Hospitals, places of worship, schools, historic buildings	<p>High: Where there are multiple indicators of sensitive locations with direct frontage onto the highway link being used as a construction traffic route.</p> <p>Medium: Where one indicator of sensitive locations is present with direct frontage onto the highway link being used as a construction traffic route.</p> <p>Very Low: Where no indicator of sensitive locations is present.</p>
People walking	Footways, PRow, crossings	<p>High: Where there are multiple indicators of sensitive locations with direct frontage onto the highway link being used as a construction traffic route.</p> <p>Medium: Where one indicator of sensitive locations is present with direct frontage onto the highway link being used as a construction traffic route.</p> <p>Very Low: Where no indicator of sensitive locations is present.</p>
People cycling	On/off-road designated cycle routes	<p>High: On-road designated cycle routes present along highway link plus other significant cycle infrastructure present.</p>

Receptors	Built Environment Indicator on Highway Link	Highway Link Sensitivity to Changes in Traffic Flow
		Medium: On-road designated cycle routes present along highway link.
		Very Low: Off-road designated cycle routes present along highway link.
Open spaces, recreational sites, shopping areas	Parks, play areas, shops, community centres	High: Where there are multiple indicators of sensitive groups with direct frontage onto the highway link being used as a construction traffic route. Medium: Where one indicator of sensitive groups is present with direct frontage onto the highway link being used as a construction traffic route. Low/Very Low: Where no indicator of sensitive groups is present.
Road users	Roads, junctions, road classification, baseline traffic volumes, signage	Sensitivity determined by other receptors, together with professional judgement to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents, e.g., junction conflicts.

13.4.30 The road link sensitivity has been based upon the worst-case sensitivity of the whole link considering the criteria outlined in **Table 13-5**. The links are represented by the ATC locations.

Table 13-5. Link Sensitivity

ATC Ref.	Link Description	Sensitivity
1	New Road – north of A645 roundabout	Very Low
2	Green Lane – north of A63 junction	Low
3	Wood Lane – between Brind Lane and B1228	Very Low
4	Wood Lane – between B1228 and Willitoft Road	Very Low
5	Street Lane – between Wood Lane and Willitoft Lane	Very Low
6	Willitoft Road – east of B1228 junction	Very Low
7	A163 – between North Duffield and Bubwith	Medium
8	Bell Lane – south of Foggathorpe	Very Low
9	A163 – east of Foggathorpe	Medium
10	A614 – south of Bursea Lane Ends	Low
11	Ings Lane – east of Spaldington	Medium
12	Willitoft Road – north of Ings Lane junction	Medium

ATC Ref.	Link Description	Sensitivity
13	Unnamed Road – Spaldington Golf Range	Low
14	A614 – north of B1230 roundabout	Low
15	B1228 – between B1230 and Brind Lane junctions	Low
16	A63 – between A614 and B1228 junctions	Low
17	A645 – east of New Road roundabout	Very Low
18	A645 – between New Road and A1041 roundabouts	Low
19	A63 – between School Road and Woodhall Lane	Low

Magnitude

13.4.31 General criteria for defining the magnitude of an impact are set out in **Table 13-6**. Key factors influencing this include:

- a. The physical or geographical scale of the impact²;
- b. The duration of the impact – will it be short-term (lasting for a few days or weeks), medium-term (lasting months) or long-term (lasting for several years);
- c. The frequency of the impact – will it occur hourly, daily, monthly or will it be permanent lasting for the duration of the Scheme; and
- d. The reversibility of the effect – can it be reversed following completion of construction of the Scheme.

13.4.32 The IEMA Guidelines set out several criteria by which the magnitude of impact can be measured, outlined below. Many of the criteria do not provide specific thresholds by which such impacts can be measured, and as a result will be measured qualitatively where appropriate and professional judgement will be used when necessary. These are described below and summarised in **Table 13-6**.

13.4.33 ‘Severance’ is defined in the IEMA Guidelines as the “...*perceived division that can occur with a community when it becomes separated by major traffic infrastructure*”. The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by infrastructure. IEMA Guidelines suggest that a change in traffic flow of 30%, 60% and 90% are regarded as producing ‘slight’, ‘moderate’ and ‘substantial’ changes in severance respectively. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.

13.4.34 ‘NMU Amenity’ is defined within the IEMA Guidelines as “...*the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic*”. The guidance suggests that a tentative threshold for judging the significance of

² Note that this will be relative to the scale of the receptor or resource affected.

changes in pedestrian and cycle amenity would be where the traffic flow (or HGV component) is halved or doubled.

- 13.4.35 The ‘Driver Delay’ assessment approach set out in the IEMA Guidelines states that delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system. The capacity of a road or a particular junction can be determined by establishing the ratio of flow to capacity (RFC). For this assessment, criteria from the IEMA Guidelines will be used to assess the effects on traffic levels and driver delay, which states the need for assessment where changes in traffic flows exceed 30%.
- 13.4.36 ‘Fear and Intimidation’ is defined within the IEMA Guidelines as *“...dependent on the total volume of traffic, HGV composition, the speed vehicles are passing, the proximity of traffic to people and/or the feeling of the inherent lack of protection created by factors such as a narrow pavement median, a narrow path or a constraint (such as a wall or fence) preventing people stepping further away from moving vehicles”*.
- 13.4.37 A detailed assessment of ‘Accidents and Safety’ will be carried out by examination of road traffic accident data for the most recent five-year period available. This analysis is included in the **TA (Appendix 13-4, ES Volume 2 [EN010143/APP/6.2])** and undertaken to highlight if there are any existing safety issues on the local road network which may be exacerbated by the Scheme. The outcome of the assessment is presented in this chapter.
- 13.4.38 Information provided in **Table 13-6** shows further details of the individual aspects of the assessment and the thresholds to be applied for each, considering the increase in traffic.

Table 13-6. Impact Magnitude Criteria (Transport and Access)

Magnitude	Description	Illustrative Criteria
High ³	Construction traffic	High number of construction vehicles using roads over a protracted period: <ul style="list-style-type: none"> • More than a 40% increase for more than 6 months.
	NMU amenity	Increase in total traffic flows of 100% or above.
	Severance	Increase in total traffic flows or HGV flows of 90% and above.
	Driver delay	Change in total traffic or HGV flows over 90%.
	Accidents and safety	All links estimated to experience increases in total traffic flows above 30% or increases in HGV flows above 10% are analysed further on a case-by-case basis.

³ Professional judgement will be applied where baseline traffic flows are low and a traffic percentage change criterion is not appropriate. Therefore, where a high magnitude of impacts is apparent based on low baseline traffic flows, the overall magnitude will be reduced to medium.

Magnitude	Description	Illustrative Criteria
	Fear and intimidation	Increase in total traffic flows or HGV flows of 90% and above.
Medium	Construction traffic	Moderate number of construction vehicles using roads over a protracted time: <ul style="list-style-type: none"> • 16-39% increase for more than 6 months; or • More than 40% increase for 3-6 months.
	NMU amenity	Increase in total traffic flows of 70-99%.
	Severance	Increase in total traffic flows of 60-89% (or increase in HGV flows of 40-89%).
	Driver delay	Change in total traffic or HGV flows of 60-89%.
	Accidents and safety	All links estimated to experience increases in total traffic flows above 30% or increases in HGV flows above 10% are analysed further on a case-by-case basis.
	Fear and intimidation	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%).
Low	Construction traffic	Small number of construction vehicles using roads over a short period of time: <ul style="list-style-type: none"> • 6-15% increase for more than 6 months; or • 16-39% for 3-6 months; or • More than 40% increase for less than 3 months.
	NMU amenity	Increase in total traffic flows of 50-69%.
	Severance	Increase in total traffic flows of 30-59% (or increase in HGV flows of 20-39%).
	Driver delay	Change in total traffic or HGV flows of 30-59%.
	Accidents and safety	All links estimated to experience increases in total traffic flows above 30% or increases in HGV flows above 10% are analysed further on a case-by-case basis.
	Fear and intimidation	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 10% - 39%).
Very Low	Construction traffic	Occasional construction vehicles using roads over a short period of time: <ul style="list-style-type: none"> • Less than 5% Increase for more than 6 months; or • Between 6-30% increase for 3 - 6 months; or • Between 31-40% for less than 3 months.
	NMU amenity	Increase in total traffic flows of 49% or under.
	Severance	Increase in total traffic flows of 29% or under (or increase in HGV flows under 10%).

Magnitude	Description	Illustrative Criteria
	Driver delay	Change in total traffic or HGV flows of 29% or under.
	Accidents and safety	Increase in total traffic flows of 30% or under (or increase in HGV flows under 10%).
	Fear and intimidation	Increase in total traffic flows or HGV flows of 29% or under (or increase in HGV flows under 10%).

13.4.39 As noted in the table, professional judgement will be applied where baseline traffic flows are low, and a percentage change criterion is not appropriate. In such instances it is possible for a high percentage change to be associated with a low number of trips that can be easily accommodated within the road network, where the magnitude should not be considered 'High'.

Significance

13.4.40 The general approach adopted for evaluating the significance of effects considering the sensitivity of the receptor and the magnitude of impact is outlined in **Table 13-7**. Effects are defined as beneficial or adverse.

Table 13-7. Significance of Effects Matrix (Transport and Access)

Receptor Sensitivity	Magnitude			
	High	Medium	Low	Very Low
High	Major (S)	Major (S)	Moderate (S)	Minor (NS)
Medium	Major (S)	Moderate (S)	Minor (NS)	Negligible (NS)
Low	Moderate (S)	Minor (NS)	Negligible (NS)	Negligible (NS)
Very Low	Minor (NS)	Negligible (NS)	Negligible (NS)	Negligible (NS)

S = Significant; NS = Not Significant

13.4.41 Effects predicted to be 'major' or 'moderate' are considered 'significant' whilst effects predicted to be 'minor' or 'negligible' are considered 'not significant'.

13.5 Baseline Conditions

13.5.1 This section describes the baseline environmental Study Area with specific reference to the highway network, walking, cycling, equestrian and public transport facilities via the strategic and local highway network. The Scheme will be located approximately 1.1 kilometres (km) north of the market town of Howden, approximately 5.0km west of the village Holme-on-Spalding-Moor, and approximately 13km east of the town of Selby. Further details of the Site and its surroundings are provided in **Chapter 2: The Scheme, ES Volume 1 [EN010143/APP/6.1]**.

Data Sources

- 13.5.2 In preparation of this chapter, the following sources of published information have been used to establish the baseline conditions:
- a. Personal Injury Collision (PIC) data;
 - b. ATCs have been undertaken at several locations in the vicinity of the Scheme to determine the baseline traffic conditions on the surrounding highway network. The resulting traffic flow diagrams are presented in **Appendix 13-2 (ES Volume 2 [EN010143/APP/6.2])**, and the traffic data is summarised in **Table 13-13** and **Table 13-14**;
 - c. Local travel information has been gathered from various sources including local bus and rail operators;
 - d. Ordnance Survey (OS)/Architectural Base Mapping has been used to ascertain an accurate geographical representation of the areas in the vicinity of the Scheme; and
 - e. Population data from the 2011 Census (Ref. 13-18). The information below is also complemented by observations carried out during a site visit on Thursday 3 November 2022.

Existing Baseline

Strategic Highway Network

- 13.5.3 The M62 forms part of the SRN and is a 172 km motorway that connects Liverpool to Hull via Bradford, Leeds and Wakefield. The road has three lanes heading in each direction with hard shoulder separation. The road is managed by National Highways and provides a link for onward strategic journeys in directions east, south and west. The junction on the M62 closest to the Scheme is junction 37, which could potentially be used by vehicles to access the Scheme. The Study Area is shown in **Figure 13-1, ES Volume 3 [EN010143/APP/6.3]**.

Local Highway Network

- 13.5.4 The A63 travels between Hull in the east to Leeds in the west via Selby, although the route becomes the M62 for approximately 15km between Junctions 38 and 37. From Junction 37 to the A19 the A63 is a single carriageway, with speed limits indicated at 30mph through villages such as Asselby, 40mph through Barmby-on-the-Marsh and Hemingbrough, with the National Speed Limit in place elsewhere indicating 60mph.
- 13.5.5 The A614 is a single carriageway road running to the east of the Site. The road can be accessed from the west via the A163 in Holme-on-Spalding-Moor, Spaldington Lane, the A63, and the M62 at Junction 37.
- 13.5.6 The A163 is a single carriageway road running east to west from the north of Barlby to Selby bypass for an extent of approximately 19km. To the north of the Scheme, the road intersects with B1228 to the east and the A614 to the east. This section of road is National Speed Limit (60 mph) in places, but drops to 40 or 30mph through villages such as Holme-on-Spalding-Moor, Foggathorpe, Highfield and Bubwith. The road is generally 6 metres (m) wide.

- 13.5.7 The A645 runs from Crofton in the east to Airmyn Grange where it intersects with the A614, after passing Drax Power Station.
- 13.5.8 The B1228 runs from the north near York southwards to Howden, and can be accessed via the A163, Willitoft Road, Wood Lane, Brind Lane and the A63 to the south. The road is a single carriageway and is predominantly National Speed Limit (60 mph), with the exception of sections north of Howden station and approaching Highfield which are signed as 40 mph. The road offers no pedestrian facilities. The road is included within the Site.
- 13.5.9 Wood Lane runs within the Scheme boundary connecting Station Road in the west to Tottering Lane in the east for a length of 5.6km. The road is a singular lane (around 3 m wide) with verges either side. The road connects to Willitoft Road, the B1228 and Brind Lane along the road at various junctions.
- 13.5.10 Tottering Lane provides access to the Site heading east from the junction with Willitoft Road and Wood Lane to the north with Bell Lane, travelling for 3km. The road is a single lane (around 4m wide) with grass verges on both sides. It is noted that the roadside verges of Tottering Lane are a Local Wildlife Site (LWS).
- 13.5.11 Ings Lane is a no through road that travels through the village of Spaldington. Through the settlement the road is a single carriageway approximately 6m wide, where there were parked cars observed. There are footways present alongside the residential properties. Following the last residential house to the east of the settlement, the road becomes single carriageway (3m wide) with grass verges on either side.
- 13.5.12 Willitoft Road forms a junction with the B1228 in the north traveling south-east to the Tottering Lane/Wood Lane junction for 2.8km. The road is a single lane (3.5m wide) with some grass verges either side. The road passes some farm buildings and has several 90-degree bends.
- 13.5.13 Spaldington Lane runs through the Scheme boundary, travelling from the B1228 in the west to the A614 in the east for a distance of approximately 4km. The road is a single carriageway without road markings, that provides access to an unmarked road heading north to Ings Lane, Wood Lane and Willitoft Lane.
- 13.5.14 Brind Lane travels for 3km from Wood Lane to the B1228 (also named Wood Lane) in the west, providing access to the Site. The road is the width of a single lane (3m wide) with verges on either side.
- 13.5.15 Rowlandhall Lane runs north to south from Wood Lane in the north for a distance of approximately 2km to Newsholme Road in the south. The road runs within the Site. The road is the width of a single lane (around 3m wide) with grass verges either side.
- 13.5.16 Bell Lane is accessed from a junction off the A163 heading south to become Tottering Lane, continuing on for approximately 700m. The road runs through a small residential area (Foggathorpe) where there are footways present on a two-way road (around 6m wide). Outside of the residential area the road becomes a single lane road (around 4.5m wide) with grass verges on either side.
- 13.5.17 New Road provides access to National Grid Drax Substation from the A645 to the south. The road is a single carriageway route approximately 6.7m

wide with some footways present close to the National Grid Drax Substation.

- 13.5.18 Pear Tree Avenue runs north-east of National Grid Drax Substation, connecting in the west to New Road and continuing east to an unmarked road for approximately 750m. The road is approximately 3m wide with grass verges either side.
- 13.5.19 Carr Lane is accessed from a junction eastbound from New Road travelling east for 800m before becoming Redhouse Lane. The road is a single carriageway, approximately 5m wide with grass verges on either side.
- 13.5.20 Newsholme Road will provide potential access to the Site from the south via the A63. The road is residential and is approximately 5.0m wide, with on street parking observed.
- 13.5.21 School Road runs from Garthends Lane in the west travelling east to the A63 for approximately 650m in the village of Hemingbrough. The single carriageway is approximately 5.5m in width and has pedestrian walkways on both sides of the road.
- 13.5.22 Chapel Balk Road is accessed via School Road and is a farm road that travels south along an unofficial lane for 470m before a junction with Grange Road. At this junction the road continues further south for a further 230m until meeting Barmby Ferry Road as an unofficial track. The road is a single lane and is approximately 3.3m wide.
- 13.5.23 Barmby Ferry Road runs south-east from Hemingbrough village towards the River Ouse for a distance of 1.4km. The road is an unofficial track road cutting through fields, and is a single lane with a width of approximately 3m.

Walking and Cycling

- 13.5.24 The Site generally falls within a rural setting with local country lanes making up the predominant road type. As a result, there are limited footways and other pedestrian/cycle facilities in the area apart from in towns and villages such as Howden, Foggathorpe, Hemingbrough, Spaldington, Holme-on-Spalding-Moor and Drax, where there are footways present to facilitate pedestrian movements.
- 13.5.25 Based on the rural nature of the area, there are a significant number of PRowS in the area crossing fields and running alongside roads and rivers. A number of these PRowS interact with the Site, as shown in the **Framework PRow Management Plan [EN10143/APP/7.13]**.
- 13.5.26 National Cycle Route (NCR) 65 passes through Howden to the south of the Solar PV Site and cuts through the Grid Connection Corridor. The route continues west towards Selby, and heading east following the River Ouse towards Barmby on the Marsh, Brough and Hull beyond.
- 13.5.27 Though unlikely, due to the quiet nature of the local roads in the Study Area, it is possible that roads could be used by workers wishing to cycle to and from the Site.

Public Transport Facilities – Bus

- 13.5.28 The closest bus stops to the Site are located along the A163, A63 and in the village of Hemingbrough. The bus stop locations, services and the distances to the closest element of the Scheme are shown in Table 13-8.

Table 13-8. Local Bus Stops and Services

Bus Stop	Location	Bus Services	Distance from Site
A163 Foggathorpe Main Road heading east and west	At A163/Bell Lane junction (Foggathorpe)	1, 18, 358	2.5km
Highfield Corner House heading west	At A163/B1228 junction (east of Highfield)	1, 18, 358	Beside Order Limits
St. Mary's Church heading north	Along Main Street in Hemingbrough	1, 3, 4a	2km
Brackenholme Cottages heading east and west	2.2km west from Newsholme Road along A63	3	3km
Howden War Memorial	On B1228 Bridgergate in Howden	55, 358	2.8km

13.5.29 **Table 13-9** sets out the routes and frequency of these services.

Table 13-9. Local Bus Routes and Frequencies

Bus Service	Route	Weekday Frequency	Provider
1	Holme on Spalding Moor to Selby	Two Services per day at 10:00 and 13:00	Thornes Independent Ltd.
3	Thorne to Selby	One Service per day at 17:00	Arriva Yorkshire
4a	4a Hemingbrough to Selby	One AM Service and one PM Service at 07:00 and 17:00 respectively	Thornes Independent Ltd.
18	Home on Spalding Moor to York	Every two to three hours	East Yorkshire Buses
55	Goole to Hull Interchange	Every two to three hours	East Yorkshire Buses
358	Holme on Spalding Moor to Goole	One Service each way on Tuesdays at 09:00 and 14:00 respectively	Goole Go Far

13.5.30 Due to a general lack of services and poor frequency, the Site is not considered to be accessible by bus. In addition, workers are expected to be travelling to the Scheme before 07:00 and leaving after 19:00 during the working week, when there are very few services.

Public Transport Facilities – Rail

- 13.5.31 The nearest railway station to the Scheme is Howden Station, which is accessed from the B1228. At the closest point to the Site, the station is located approximately 2.2km south of the entrance to Compound B, and 5.4km to the east of the entrance to Compound D.
- 13.5.32 The Grid Connection Corridor is approximately 2.3 km from Howden Station at the closest distance; however, Wressle Station also lies 500m to the north, providing infrequent services to Bridlington and York via Hull.
- 13.5.33 Howden Station provides journeys to onward destinations such as York, London Kings Cross, Bridlington, Hull and Selby as well as other stops. The routes and frequency of services are set out in **Table 13-10**.

Table 13-10. Howden Train Station Services

Train Route	Frequency	Service Provider
York to Bridlington via Hull	Every Hour	Northern Rail
Bridlington to York via Hull	Every Hour	Northern Rail
London Kings Cross to Hull via Selby	Every 2 Hours	Hull Trains
Hull to London Kings Cross via Selby	Every 2 Hours	Hull Trains

- 13.5.34 Although the station is close to Solar PV Areas in the south of the Solar PV Site, usage would be fairly limited due to a lack of footways and other pedestrian facilities. Therefore, it has been assumed for assessment purposes that all staff working on-site in the Solar PV Areas, will predominantly travel by private vehicles (sole occupancy or car sharing) or minibus.

Road Safety

- 13.5.35 PIC data on the surrounding network has been obtained from the 'Crashmap' website (Ref. 13-19) for the most recent five full-year period where COVID-19 restrictions were less restrictive or have not been in place (2016-2019 and 2021 inclusive).
- 13.5.36 The 2022 official data has not yet been made available by the DfT, and therefore has not been included in this study.
- 13.5.37 The accident Study Area includes key routes that are anticipated to be used by HGV and construction worker traffic travelling to the Site. The area is shown in **Figure 13-5 (ES Volume 3 [EN010143/APP/6.3])**.
- 13.5.38 Contributing factors, such as speeding, driver use of mobile phone, road conditions (due to weather), and driver fatigue or intoxication, have not been considered within the **TA (Appendix 13-4, ES Volume 2 [EN010143/APP/6.2])**.
- 13.5.39 A total of 137 collisions occurred over the five-year period within the PIC Study Area, categorised as slight (at least one person has been slightly injured), severe (at least one person has been seriously injured) or fatal (at least one person has been killed) accidents.

13.5.40 Table 13-11 provides a summary of accidents by the severity and year, and shows that the greatest number of accidents within the PIC Study Area occurred in 2018 with a total of 33 collisions recorded. Seven of the accidents were recorded as fatal collisions.

Table 13-11. Summary of PIC (2021, 2019-2016)

Year	Slight	Severe	Fatal	Total
2021	15	8	1	24
2019	17	2	2	21
2018	24	8	1	33
2017	21	4	2	27
2016	26	5	1	32
Total	103	27	7	137

13.5.41 The data has been split to show accidents on road links, as shown in **Table 13-12** and accidents that occurred at or near to junctions (**Table 13-13**). The highest number of collisions (37), including the highest number of fatal accidents (4), were recorded on the A614 between Holme-on-Spalding-Moor and Howden.

Table 13-12. Summary of PIC Data by Road

Road Name	Slight	Severe	Fatal	Total
A63	19	5	1	25
A614	26	7	4	37
A163	15	3	0	18
A645	10	1	0	11
B1228	13	2	0	15
Wood Lane	0	0	0	0
Tottering Lane	0	0	0	0
Ings Lane	0	0	0	0
Willitof Road	0	0	0	0
Spaldington Lane	0	1	0	1
Brind Lane	0	0	0	0
Rowlandhall Lane	0	0	0	0
Bell Lane	1	0	0	1
Newsholme Road	0	0	0	0
New Road	0	0	0	0
Carr Lane	0	0	0	0
Pear Tree Avenue	0	0	0	0

Road Name	Slight	Severe	Fatal	Total
School Road	0	0	0	0
Chapel Balk Road	0	0	0	0
Barmby Ferry Road	0	0	0	0
Total	84	19	5	108

13.5.42 As described previously, **Table 13-13** shows the accidents that occurred at or close to junctions.

Table 13-13. Summary of PIC Data by Junction

Junction Name	Slight	Severe	Fatal	Total
M62, J37	11	5	2	18
B1228/ A163 Junction	1	1	0	2
Bell Lane/ A163 Junction	1	1	0	2
A63/ A614 Junction	4	0	0	4
A63/ B1228 Junction	2	1	0	3
Total	19	8	2	29

13.5.43 Based on the information available the PIC data provided did not show incidents occurring frequently at any particular location.

13.5.44 It is noted that there were four fatal accidents on the A614 between Holme-on-Spalding-Moor and Howden during the five-year period. However, the accidents were not at a single location and accident sites were separated by some distance. The causation of these fatal accidents is elaborated on further in Section 4-4 of the **TA (Appendix 13-4, ES Volume 2 [EN010143/APP/6.2])**.

13.5.45 Where the access points of the four Compounds within the Site are located, accident data has been further evaluated within section 4-4 of the **TA (Appendix 13-4, ES Volume 2 [EN010143/APP/6.2])**.

13.5.46 The following road links have been considered further in terms of accidents and safety, with respect to the additional traffic movements which are forecast to be generated by the Scheme, to determine whether any mitigation may be required to resolve any road safety concern:

- a. Link 2: Green Lane – north of A63 junction;
- b. Link 3: Wood Lane – between Brind Lane and B1228;
- c. Link 5: Street Lane – between Wood Lane and Willitof Lane;
- d. Link 6: Willitof Road – east of B1228 junction;
- e. Link 13: Unnamed Road – Spaldington Golf Range; and
- f. Link 15: B1228 – between B1230 and Brind Lane junctions.

13.5.47 Along each link the following accidents have been recorded between 2016-2019 and 2021 (most recent five-year period excluding 2020 due to COVID-19 restrictions):

- a. Link 2: no incidents recorded within the specified 5-year period;
- b. Link 3: no incidents recorded within the specified 5-year period;
- c. Link 5: four slight incidents recorded within the specified 5-year period;
- d. Link 6: no incidents recorded within the specified 5-year period;
- e. Link 13: one severe incident recorded within the specified 5-year period; and
- f. Link 15: six slight incidents and one severe incident recorded within the specified 5-year period.

13.5.48 The severe incident along Link 13 occurred on the 30 April 2016, approximately 120m east of the B1228 junction along the unmarked road. The accident involved the driver of a motorcycle driving offside, injuring themselves only and involving no other vehicles. The conditions were dry without high winds during the day, on the road that has a 60mph speed limit.

13.5.49 At the B1228/A163 Junction, the following incidents have occurred:

- a. A severe incident occurred on the 14 May 2021, where two cars were impacted at the uncontrolled junction approaching from the B1228. One driver drove to the offside of the road, and a secondary car with two riders then impacted the front of their car. The conditions were dry without high winds during the day and the approach has a 60mph speed limit.
- b. A slight incident occurred on the 28 October 2018 where two cars were impacted at the uncontrolled junction approaching from the A163. One driver was impacted at the front, and a secondary driver was impacted on the near side with this driver being injured by the incident. The conditions were wet (damp) without high winds during the night, and the approach has a 60mph speed limit.
- c. A slight incident occurred on the 21 February 2018 where a light goods vehicle rear ended a car as both vehicles turned left from the B1228 south onto the A163, resulting in the car driver being injured in the incident. The conditions were wet (damp) without high winds during the day and the approach has a 30mph speed limit.

13.5.50 Along the B1228 between the A163 and the B1230 (where Links 5 and 15 are located), the incidents recorded are listed below in north to south order of where the incidents occurred:

- a. A slight incident occurred on the 5 November 2018 approximately 120m south of the Willitof Road junction, where a single car was involved. The conditions were dry, without high winds during the night (no streetlighting present), and the road has a 60mph speed limit.
- b. A slight incident occurred on the 25 August 2018 approximately 2km south of the Willitof Road junction, where two cars were impacted along the road, with one vehicle hitting the nearside of the vehicle on

- the kerb on the carriageway, and the second vehicle impacting on the offside, leading to injuries to both drivers. The conditions were dry without high winds during the day and the road has a 60mph speed limit.
- c. A slight incident occurred on the 21 August 2016 approximately 600m north of the Wood Lane crossroads, at a bend in the road, where one motorcycle impacted the front of another vehicle, leading to injuries for the driver and passenger of the vehicle. The conditions were dry without high winds during the day and the road has a 60mph speed limit.
 - d. A slight incident occurred on the 24 May 2019 approximately 600m north of the Wood Lane crossroads, at a bend in the road, where two cars impacted hitting the front of each vehicle, leading to injuries for both drivers of the cars. The conditions were dry without high winds during the day and the road has a 60mph speed limit.
 - e. A serious incident occurred on the 1 November 2018, approximately 600m north of the unmarked Spaldington Lane, where a car and an HGV impacted on the nearside of both vehicles, leading to the injury of the car driver. The conditions of the road were wet with no high winds during the day and the road has a 60mph speed limit.
 - f. A serious incident occurred on the 26 May 2016, approximately 300m north of the unmarked Spaldington Lane, where a car and a LGV impacted at the front of both vehicles, leading to injury of the car driver. The conditions of the road were wet (damp) without winds during the day, and the road has a 60mph speed limit.
 - g. A slight incident occurred on the 1 February 2018 at the point of the junction with the unmarked Spaldington Lane, where two cars impacted, as one driver turned left onto the B1228 and was impacted from behind by the second vehicle leading to the injury of one driver. The conditions of the road were wet (damp) without winds during the day, and both roads has 60mph speed limit.
 - h. A serious incident occurred on the 30 April 2019, approximately 700m south of the point of junction with the unmarked Spaldington Lane, where three cars impacted resulting in two cars impacting at the front of the cars, resulting in impact with a tree and resulting injury for driver, and with the third driver not impacting. The conditions of the road were wet (damp) with foggy conditions, during the day and the road has a 60mph speed limit.
 - i. A slight incident occurred on the 5 December 2019, adjacent to Howden Station, where two HGVs impacted along the road, with one vehicle impacting on the near side, and the second vehicle impacting at the front, leading to injury of one driver. The conditions of the road were wet (damp) without high winds, at night with a speed limit of 40mph.
 - j. A slight incident occurred on the 10 June 2017 adjacent to Howden rail station, where a car rear ended a second car leading to injury of the driver and passenger of the car in front. The conditions of the road were dry without high winds during the day and the road has a 40mph speed limit.

- k. A slight incident occurred on the 10 November 2016, adjacent to Howden rail station, where a car intersected with the near side of a parked car, leading to injury of the driver of the moving car. The conditions of the road were dry without high winds during the night (no street lighting) and the road has a 40mph speed limit.
 - l. A slight incident occurred on the 29 July 2016, approximately 250m north of the Langhorn Drive junction, where a car turned the lefthand bend, hitting the kerb and entered a ditch on the side of the road, injuring the driver. The conditions of the road were raining without high winds during the day, and the road has a 40mph speed limit.
 - m. A slight incident occurred on the 4 November 2016 approximately 30m south of the Langhorn Drive junction, where a car impacted on the near side whilst proceeding along the carriageway, leading to injury of the driver. The conditions of the road were wet (damp) without winds during the day, and the speed limit of the road was 30mph.
 - n. A slight incident occurred on the 27 December 2019, at the junction with Shelford Avenue, where a LGV was turning right and was impacted on the offside of the vehicle as a car hit the vehicle, impacting at the front of the vehicle, injuring the driver and passenger in the car. The conditions of the road were wet (damp) without winds at night (no street lighting) and the speed limit of the road was 60mph.
- 13.5.51 There were 14 incidents recorded along the B1228 over the 5-year period. There are incidents recorded that involve LGVs and HGVs along the road; however, this is not anticipated to be worsened by construction, as HGVs and tractor/trailers will not be using the full extent of the road, with HGVs travelling from the A163 to the entrance to Compound B only, and tractor/trailers only utilising the road between the Fine Country Stays accommodation to the unmarked Spaldington Lane road junction further south.
- 13.5.52 The accident data descriptions do not suggest a pattern of safety issues on the B1228 that could be aggravated by the construction of the Scheme.
- 13.5.53 Throughout the construction phase, measures delivered (including those in the **Framework CTMP (Appendix 13-5, ES Volume 2 [EN010143/APP/6.2])**) would be focused on reducing traffic impacts in these areas where needed.

Baseline Traffic Flows

- 13.5.54 To understand baseline traffic levels, ATC surveys (also known as traffic surveys) were carried out at 19 locations during the week of 15-21 September 2022 inclusive. Survey locations were as set out in the **Scoping Report (Appendix 1-1, ES Volume 2 [EN010143/APP/6.2])** and East Riding of Yorkshire Council and North Yorkshire Council were asked for comment on the locations (**Appendix 13-3: Communications with Local Planning Authorities, ES Volume 2**). The ATC locations are shown in **Figure 13-2 (ES Volume 3 [EN010143/APP/6.3])**.
- 13.5.55 Data was recorded for 24-hours a day at 15-minute intervals. The surveys were timed outside of the school holidays to provide representative traffic

levels. The following traffic data has been included representing the summer construction traffic peaks and local road network peak periods:

- a. 06:00 to 07:00 – construction AM peak hour;
- b. 08:00 to 09:00 – network AM peak hour;
- c. 17:00 to 18:00 – network PM peak hour; and
- d. 19:00 to 20:00 – construction PM peak hour.

13.5.56 **Table 13-14** presents the ATC surveyed traffic counts from 2022.

Table 13-14. ATC Surveyed Traffic Counts 2022

ATC	Link Description	Link Sensitivity	Total Vehicles (Two-Way)					24 Hour AADT*
			06:00-07:00	08:00-09:00	17:00-18:00	19:00-20:00		
1	New Road – north of A645 roundabout	Very Low	105	196	118	51	1,787	
2	Green Lane – north of A63 junction	Low	10	17	19	5	200	
3	Wood Lane – between Brind Lane and B1228	Very Low	12	18	26	8	279	
4	Wood Lane – between Wood Lane and Willitof Lane	Very Low	3	11	15	8	153	
5	Street Lane – between Wood Lane and Willitof Lane	Very Low	113	169	225	86	2,297	
6	Willitof Road – east of B1228 junction	Very Low	3	10	13	9	143	
7	A163 – between North Duffield and Bubwith	Medium	166	343	417	177	4,574	
8	Bell Lane – south of Foggathorpe	Very Low	3	18	19	9	197	
9	A163 – east of Foggathorpe	Medium	89	240	268	104	2,949	
10	A614 – south of Burse Lane Ends	Low	279	437	600	274	7,978	
11	Ings Lane – east of Spaldington	Medium	1	3	2	1	40	

ATC	Link Description	Link Sensitivity	Total Vehicles (Two-Way)					24 Hour AADT*
			06:00-07:00	08:00-09:00	17:00-18:00	19:00-20:00		
12	Willitoff Road – north of Ings Lane junction	Medium	28	12	17	8	173	
13	Unnamed Road – Spaldington Golf Range	Low	14	40	44	20	528	
14	A614 – north of B1230 roundabout	Low	324	459	605	284	8,052	
15	B1228 – between B1230 and Brind Lane junctions	Low	130	217	285	113	2,977	
16	A63 – between A614 and B1228 junctions	Low	268	536	602	263	6,797	
17	A645 – east of New Road roundabout	Very Low	376	573	566	269	6,875	
18	A645 – between New Road and A1041 roundabouts	Low	366	666	653	300	7,545	
19	A63 – between School Road and Woodhall Lane	Low	269	503	607	235	6,441	

* AADT = Annual average daily traffic

Future Baseline

- 13.5.57 Subject to the DCO Application being granted, and following a final investment decision, the earliest construction could start is in 2025. Construction of the Scheme is expected to last an estimated 24 months, with the earliest anticipated commencement of operation therefore being 2027, with an operational life of 40 years.
- 13.5.58 The peak year for traffic movements is assumed to be 2025 (when construction of both the Solar PV Areas and the Grid Connection will occur). As such, 2025 has been used as the future assessment year.
- 13.5.59 It is possible that construction may start as late as 2029 or occur at a slower pace than has been assessed, but a worst-case build out period has been assessed in this chapter to provide worst-case estimates of trip generation, and a start date up to 5 years after DCO consent (as allowed by the DCO) has been accounted for, and is not anticipated to have a material effect on the future baseline flows or change the validity of this assessment.

13.5.60 Future year baseline traffic flows for the assessment year of 2025 for the peak of construction have been derived by applying the national standard Trip End Model Presentation Program (TEMPro) to derive traffic growth factors, as indicated in **Table 13-15**.

13.5.61 This growth factor has been taken into account when comparing the baseline and future traffic scenarios.

Table 13-15. TEMPro Growth Factors

Period	Growth Factor
2022-2025	1.03685

13.5.62 The 2025 Baseline traffic flows are shown in **Table 13-16**. These are the anticipated baseline flows for the peak of the construction period, with the absence of the scheme along local road links.

Table 13-16. ATC Baseline Traffic Counts 2025

ATC	Link Description	Link Sensitivity	Total Vehicles (Two-Way)					24 Hour AADT
			06:00-07:00	08:00-09:00	17:00-18:00	19:00-20:00		
1	New Road – north of A645 roundabout	Very Low	109	203	122	53	1,853	
2	Green Lane – north of A63 junction	Low	11	18	20	5	207	
3	Wood Lane – between Brind Lane and B1228	Very Low	12	18	27	8	289	
4	Wood Lane – between Wood Lane and Willitoft Lane	Very Low	3	12	16	8	158	
5	Street Lane – between Wood Lane and Willitoft Lane	Very Low	118	175	233	89	2,382	
6	Willitoft Road – east of B1228 junction	Very Low	3	11	13	9	148	
7	A163 – between North Duffield and Bubwith	Medium	172	355	433	184	4,742	
8	Bell Lane – south of Foggathorpe	Very Low	3	18	19	10	204	
9	A163 – east of Foggathorpe	Medium	92	249	278	108	3,057	
10	A614 – south of Burse Lane Ends	Low	289	453	623	285	8,272	
11	Ings Lane – east of Spaldington	Medium	1	3	2	1	41	

ATC	Link Description	Link Sensitivity	Total Vehicles (Two-Way)					24 Hour AADT
			06:00-07:00	08:00-09:00	17:00-18:00	19:00-20:00		
12	Willitoff Road – north of Ings Lane junction	Medium	29	13	18	8	179	
13	Unnamed Road – Spaldington Golf Range	Low	14	41	46	21	548	
14	A614 – north of B1230 roundabout	Low	336	476	628	295	8,349	
15	B1228 – between B1230 and Brind Lane junctions	Low	135	225	295	117	3,086	
16	A63 – between A614 and B1228 junctions	Low	278	556	625	272	7,048	
17	A645 – east of New Road roundabout	Very Low	390	594	587	279	7,129	
18	A645 – between New Road and A1041 roundabouts	Low	380	691	677	311	7,823	
19	A63 – between School Road and Woodhall Lane	Low	279	521	629	244	6,678	

13.5.63 Currently, no upcoming road network improvements are planned within the Study Area apart from discussion for network improvements at Goole, and at the M62 junction 36.

13.6 Embedded Mitigation

13.6.1 Where possible, mitigation measures have been incorporated into the Scheme design and/or how it shall be constructed. Through iterative assessment, potential impacts have been predicted and opportunities to mitigate them identified with the aim of preventing or reducing impacts as much as possible. This approach provides the opportunity to prevent or reduce potential adverse impacts from the outset. This embedded mitigation/mitigation by design approach has been taken into account when evaluating the significance of the potential impacts.

Construction and Decommissioning

13.6.2 During the construction period, and therefore currently planned for the decommissioning period due to similar degrees of impact, the following embedded design mitigation measures are proposed.

- a. Suitable access points have been identified to enable movement of vehicles into sites where appropriate;

- b. All access points that require the creation of a junction bellmouth would be designed based on the relevant standard from DMRB CD 123 Geometric Design of at Grade Priority and Signal-Controlled Junctions (Ref. 13-17) and in consultation with the local highway authority, thereby negating any potential safety impact associated with construction activity;
- c. Minimum car parking levels will be met at each of the Construction Compounds as set out in the **TA (Appendix 13-4, ES Volume 2 [EN010143/APP/6.2])**;
- d. Swept path analysis for AILs, HGVs, and tractor/trailers has been conducted to ensure there is knowledge of where routing is appropriate;
- e. Pre- and post-construction road condition surveys will be undertaken at identified locations in coordination with the relevant Local Highway Authority(s);
- f. AILs will be routed in accordance with the findings of the routing review for large vehicles as set out in the **Framework CTMP (Appendix 13-5, ES Volume 2 [EN010143/APP/6.2])**. There are expected to be up to 10 movements associated with the delivery of transformers to the two Grid Connection Substations;
- g. Implementing local off-site highway improvements (e.g., verge clearance, hedge cutting and/or carriageway widening) where required to support HGV movements;
- h. Utilising internal routes between Solar PV Areas to avoid using the existing road network where practicable;
- i. Managing the areas where traffic may have to use the road network, by providing adequate visibility splays between construction vehicles and other road users, implementing traffic management (e.g., advanced signage to advise other users of the works, as well as manned controls at each crossing point (marshals/ banksmen)), with a default priority that construction traffic will give-way to other users. This will also apply where construction traffic and PRoW may intersect;
- j. Positioning of suitably qualified banksmen at construction compound access points to allow all vehicle arrivals and departures to be safely controlled during the construction period;
- k. Ensure temporary traffic signals are implemented where necessary across the road network to reflect demand;
- l. Restricting HGV movements to certain routes as follows:
 - i. Compound A – Along the A163 to the A614;
 - ii. Compound B – Along the A163 to the A614;
 - iii. Compound D – Along the A63 to the A19; and
 - iv. Compound E – along the A645 to the M62.
- m. The Scheme is not intending to have HGVs travelling to Compound C.

- n. Restrictions on HGV and tractor-trailer movements on roads through Howden and north from Howden along the B1228 Station Road;
- o. To minimise the number of HGV movements between 07:00 and 09:00, as well as 16:00 and 20:00, to avoid increasing traffic levels on the surrounding highway network during the traditional weekday peak hours;
- p. Implementing a Delivery Management System to control the bookings of HGV deliveries from the start of the construction period. This will be used to regulate the arrival times of HGVs via timed delivery slots, as well as to monitor compliance of HGV routing. In addition, adequate space will be made available within the construction compounds to ensure no queuing back onto the surrounding road network occurs;
- q. Implementing a monitoring system to record the route of all HGVs travelling to and from the Site, to record any non-compliance with the agreed routing strategy/delivery hours and to communicate any issues to the relevant suppliers to ensure the correct routes and times are followed;
- r. Construction staff will be directed to take the most direct route to the Site using 'higher' order roads, such as A and B classified roads or the SRN;
- s. Encouraging local construction staff to car share to reduce single occupancy car trips. This will promote the benefits of car sharing, such as reduced fuel costs. A car share system will be implemented to match potential sharers and to help staff identify any colleagues who could potentially be collected along their route to/from the Site;
- t. Implementing a shuttlebus service to transfer non-local staff to/from local worker accommodation (assumed average occupancy of 16 workers per service), to reduce vehicle trips on the surrounding highway network. Minibuses will also be used to transport staff around the Site, by making use of the internal routes wherever possible to travel between the Solar PV Site, the Grid Connection Corridor and the Construction Compounds.
- u. Providing limited (but sufficient) on-site car parking to accommodate the expected parking demand of construction staff for the Scheme. Staff movements will be managed through the implementation of limited car parking, car sharing, staff routing, specified staff arrival and departure times, parking strategy and the minibus services.
- v. A specialised haulage service will be employed to allow AILs to transport components with the necessary escort, permits and traffic management, with the contractor consulting the relevant highways authorities to ensure the correct permits are obtained. The police will also be given advanced notification under the Road Vehicle Authorisation of Special Types Order 2003 (Ref. 13-20).
- w. PRowS within the Solar PV Site will have maintained access within the Solar PV Site throughout construction with minor diversions, separating PRow from working areas by installing perimeter fencing as the first phase of construction (see **Chapter 2: The Scheme, ES Volume 1 [EN010143/APP/6.1]**). The Interconnecting Cables and

Grid Connection Cables would only be impacted during the short-term trenching and restoration operations, and will be managed with traffic management measures where necessary. Routes may be temporarily slightly altered, e.g., moving from one side of a road to the other. Under a worst-case scenario, if any PRowS require diversion, these will be short-term in duration. Further information on PRow is presented in **Chapter 2: the Scheme** and **Chapter 12: Socio-economics and Land Use, ES Volume 1 [EN010143/APP/6.1]** as well as the **Framework PRow Management Plan [EN010143/APP/7.13]**.

- x. To mitigate impacts for cyclists and pedestrians a communications strategy including regular meetings with contractors to review and address any issues will be implemented.
- 13.6.3 All embedded mitigation will be managed through the **Framework CTMP (Appendix 13-5, ES Volume 2 [EN010143/APP/6.2])**.
- 13.6.4 A **Framework CTMP (Appendix 13-5, ES Volume 2 [EN010143/APP/6.2])** has been produced in accordance with this DCO Application and will be developed further by the appointed contractor in consultation with Local Planning Authorities, National Highways (as necessary), North Yorkshire and Humberside Police and other stakeholders following award of consent to secure the commitments above. The structure of these documents will expand upon the information included in the Framework CTMP, as well as the **Framework CEMP [EN010143/APP/7.7]** and **Framework DEMP [EN010143/APP/7.9]**.

Operation

- 13.6.5 During the operational period, the following embedded design mitigation measures are proposed:
- a. Operational staff will be directed to take the most direct route to the Site using 'higher' order roads, such as A and B classified roads or the SRN;
 - b. HGV movements are anticipated to be low across the 40-year operational period, but when required HGV movements will be restricted to certain times of day (between 09:00 and 16:00) and restricted to the strategic road network (A63, A163, and A645);
 - c. If AILs are needed during the operational period, they will be in accordance with the findings of the routing review for large vehicles which is discussed further in the **Framework CTMP (Appendix 13-5, ES Volume 2 [EN010143/APP/6.2])**.
 - d. A specialised haulage service will be employed to allow AILs to transport components with the necessary escort, permits and traffic management, with the contractor consulting the relevant highways authorities to ensure the correct permits are obtained. The police will also be given advanced notification under the Road Vehicle Authorisation of Special Types Order 2003 (Ref. 13-20);
 - e. Ensuring operational staff park within the Solar PV Areas during operation as to limit impact on the local road network; and

- f. Providing sufficient protection/separation between existing PRoW, permissive paths and solar PV infrastructure where necessary, using perimeter fencing installed at a minimum distance of 20m either side of the centre of the PRoW where solar infrastructure lies to both sides, or 15m if solar infrastructure is to one side only.
- 13.6.6 The embedded design mitigation measures referred to above would be secured through the DCO and included within the **Framework CTMP, ES Volume 2 [EN010143/APP/6.2]**, the **Framework OEMP [EN010143/APP/7.8]** and **Framework PRoW Management Plan [EN010143/APP/7.13]**.

13.7 Assessment of Likely Impacts and Effects

- 13.7.1 The Scheme has the potential to affect transport and access (positively or negatively) during the construction and decommissioning phases. The assessments of impacts and effects associated with the construction of the Scheme have been undertaken following consideration of the embedded mitigation measures as described in section 13.6 of this chapter and the **TA (Appendix 13-4, ES Volume 2 [EN010143/APP/6.2])**. This section provides an overview of the trip distribution, trip generation and assignment associated with traffic during the construction phase, and the knock-on potential impacts. Operational phase impacts have been assessed qualitatively.

Construction Effects

- 13.7.2 The traffic impact methodology for the construction phase is set out in full within the **TA (Appendix 13-4, ES Volume 2 [EN010143/APP/6.2])**. The numbers of vehicles expected to travel to and from the Site during this phase have been provided by the Applicant.
- 13.7.3 In summary, the peak construction traffic generated by the Scheme is anticipated to be between Months 1 to 18, with up to 178 construction worker vehicles including minibuses and private worker vehicles, 25 HGVs and 50 tractor/trailer movements anticipated to be travelling to and from the Site daily. The assessment has been conducted based on Month 6 of construction based on peak flows recorded across the ATC network over the course of construction occurring from months 6-9. Month 6 of the construction could occur as early as 2025.
- 13.7.4 Traffic will be distributed across the five Compounds during the construction programme as set out in Tables 18 to 20 of the **TA (Appendix 13-4, ES Volume 2 [EN010143/APP/6.2])**. HGVs and tractor/trailers will move around the Site along set routes, and construction workers are expected to travel to the varying compounds taking the fastest route possible to them.
- 13.7.5 The proposed increase in two-way vehicle movements during the construction weekday peak hours, and across the day (24 hours), both in terms of actual increases and percentage increase relative to the future baseline traffic flows are presented in the tables below at each link location.

Table 13-17. 2025 Baseline plus Construction Traffic

ATC	AM Development Peak (06:00-07:00)			PM Development Peak (19:00-20:00)			Daily (24 Hours)		
	B	D	%+	B	D	%+	B	D	%+
1	109	0	0%	53	0	0%	1,853	0	0%
2	11	16	152%	5	16	329%	207	33	16%
3	12	29	241%	8	29	374%	289	73	25%
4	3	0	0%	8	0	0%	158	0	0%
5	118	80	68%	89	80	91%	2,382	185	8%
6	3	88	2660%	9	88	946%	148	203	137%
7	172	0	0%	184	0	0%	4,742	0	0%
8	3	0	0%	10	0	0%	204	0	0%
9	92	7	7%	108	7	6%	3,057	63	2%
10	289	6	2%	285	6	2%	8,272	37	0%
11	1	0	0%	1	0	0%	41	0	0%
12	29	0	0%	8	0	0%	179	0	0%
13	14	6	43%	21	6	29%	548	32	6%
14	336	0	0%	295	0	0%	8,349	25	0%
15	135	108	80%	117	108	92%	3,086	216	7%
16	278	10	4%	272	10	4%	7,048	20	0%
17	390	0	0%	279	0	0%	7,129	0	0%
18	380	0	0%	311	0	0%	7,823	0	0%
19	279	19	7%	244	19	8%	6,678	37	1%

B = Baseline; D = Development-generated traffic; %+ = Percentage increase

13.7.6 The results in **Table 13-17** indicate the following:

- a. No movements associated with the Scheme are anticipated during the network peak hours of the day (08:00-09:00 and 17:00-18:00);
- b. The Scheme's peak hours of worker-generated traffic are between 06:00-07:00 and 19:00-20:00. This is when all construction workers are expected to arrive to and leave the compounds. A total of 178 one-way movements will occur during each hour (e.g., this accounts for the arrival of vehicles in the AM hour and departure of vehicles in the PM hour);
- c. The Scheme is anticipated to have the largest proportional increase in traffic flows at ATC 6 (Willitof Road), with a 2,660% increase in traffic during the hours of 06:00-07:00 when construction workers will be entering Compound A. Traffic will travel to the compound along the

- B1228 to Willitoff Road. No traffic movements would continue further south along the road link past the compound access point;
- d. The B1228 (Station Road) is predicted to experience the highest level of additional traffic associated with the Scheme during the construction period, with an additional 216 construction worker vehicles passing through ATC 15 when arriving to or leaving the Site including both minibuses and private worker vehicles. This equates to up to 108 movements between 06:00-07:00, and up to 108 movements between 19:00-20:00. No other generated trips are anticipated to pass through this point during the day.
- 13.7.7 With reference to the IEMA Guidelines (Ref. 13-15) a two-rule approach can be used to assess the extent of any traffic assessment as follows:
- a. **Rule 1** – Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- b. **Rule 2** – Include highway links of high sensitivity where traffic flows have increased by 10% or more.
- 13.7.8 **Table 13-17** indicates that some of the links would experience an increase in traffic of more than 30% during a development peak hour which is highlighted in **bold** and includes links 2, 3, 5, 6, 13 and 15.
- 13.7.9 It should be noted that where there is an increase of more than 30%, in all instances apart from links 5 and 15, the 2025 baseline hourly two-way traffic flows were very low (e.g., predicted to be less than 30 two-way vehicles per hour). With the addition of construction traffic, this then results in a high percentage increase, even though the actual increase in traffic is predicted to be small.
- 13.7.10 The additional hourly traffic numbers, with the exception of those on links 5 and 15, are therefore considered low and it is expected there would be sufficient capacity on the road network to accommodate the additional trips.
- 13.7.11 During the construction phase the impact would be temporary and would be managed through the embedded mitigation measures including a **Framework CTMP (Appendix 13-5, ES Volume 2 [EN010143/APP/6.2])** and the above impact represents the peak of the activity on the Site.
- 13.7.12 The following sections summarise the likely effects on receptors in terms of total construction traffic, severance, pedestrian amenity, driver delay, fear and intimidation, and highway safety.
- 13.7.13 **Table 13-18** indicates the magnitude of impacts measured against the criteria set out within **Table 13-6**.
- 13.7.14 It should be noted that for the purposes of the assessment, professional judgement has been used to amend the 'High' magnitudes for road links to 'Medium' where baseline flows are low, and it is considered there is sufficient capacity on the road network to accommodate the additional development-generated trips.
- 13.7.15 For the purposes of the Accidents and Safety analysis, as noted in **Table 13-4**, all links estimated to experience increases in total traffic flows above 30% have been analysed further on a case-by-case basis from Section 13.7.21 onwards.

Table 13-18. Road Links Magnitude of Impact against Assessment Criteria

ATC	Link Description	Sensitivity	Total Percentage Traffic Increase		Total traffic increase	NMU Amenity	Magnitude			Fear and Intimidation
			06:00-07:00	19:00-20:00			Severance	Driver Delay	Accidents and Safety	
1	New Road – north of A645 roundabout	Very Low	0%	0%	Very Low	Very Low	Very Low	Very Low	Assessed below	Very Low
2	Green Lane – north of A63 junction	Low	152%	329%	Medium ⁴	Medium ⁴	Medium ⁴	Medium	Assessed below	Medium ⁴
3	Wood Lane – between Brind Lane and B1228	Very Low	241%	374%	Medium ⁴	Medium ⁴	Medium ⁴	Medium ⁴	Assessed below	Medium ⁴
4	Wood Lane – between Wood Lane and Willitoff Lane	Very Low	0%	0%	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
5	Street Lane – between Wood Lane and Willitoff Lane	Very Low	68%	91%	High	Medium	Medium	Medium	Assessed below	Medium
6	Willitoff Road – east of	Very Low	2,660%	946%	Medium ⁴	Medium ⁴	Medium ⁴	Medium ⁴	Assessed below	Medium ⁴

⁴ Where a 'High' magnitude of impacts was apparent based on low baseline traffic flows, the overall magnitude has been reduced to 'Medium'

ATC	Link Description	Sensitivity	Total Percentage Traffic Increase		Total traffic increase	NMU Amenity	Magnitude			Fear and Intimidation
			06:00-07:00	19:00-20:00			Severance	Driver Delay	Accidents and Safety	
	B1228 junction									
7	A163 – between North Duffield and Bubwith	Medium	0%	0%	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
8	Bell Lane – south of Foggathorpe	Very Low	0%	0%	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
9	A163 – east of Foggathorpe	Medium	7%	6%	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
10	A614 – south of Bursea Lane Ends	Low	2%	2%	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
11	Ings Lane – east of Spaldington	Medium	0%	0%	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
12	Willitoff Road – north of Ings Lane junction	Medium	0%	0%	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
13	Unnamed Road –	Low	43%	29%	Medium	Very Low	Low	Low	Assessed below	Low

ATC	Link Description	Sensitivity	Total Percentage Traffic Increase		Total traffic increase	NMU Amenity	Magnitude			Fear and Intimidation
			06:00-07:00	19:00-20:00			Severance	Driver Delay	Accidents and Safety	
Spaldington Golf Range										
14	A614 – north of B1230 roundabout	Low	0%	0%	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
15	B1228 – between B1230 and Brind Lane junctions	Low	80%	92%	High	Medium	Medium	Medium	Assessed below	Medium
16	A63 – between A614 and B1228 junctions	Low	4%	4%	Low	Very Low	Very Low	Very Low	Very Low	Very Low
17	A645 – east of New Road roundabout	Very Low	0%	0%	Low	Very Low	Very Low	Very Low	Very Low	Very Low
18	A645 – between New Road and A1041 roundabouts	Low	0%	0%	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
19	A63 – between	Low	7%	8%	Low	Very Low	Very Low	Very Low	Very Low	Very Low

ATC	Link Description	Sensitivity	Total Percentage Traffic Increase		Total traffic increase	NMU Amenity	Magnitude			
			06:00-07:00	19:00-20:00			Severance	Driver Delay	Accidents and Safety	Fear and Intimidation
	School Road and Woodhall Lane									

13.7.16 As shown in **Table 13-18**, a number of links would experience either a medium or high magnitude of impact within at least one of the assessment criteria, e.g.:

- a. Link 2: Green Lane – north of A63 junction;
- b. Link 3: Wood Lane – between Brind Lane and B1228;
- c. Link 5: Street Lane – between Wood Lane and Willitoft Lane;
- d. Link 6: Willitoft Road – east of B1228 junction;
- e. Link 13: Unnamed Road – Spaldington Golf Range; and
- f. Link 15: B1228 – between B1230 and Brind Lane junctions.

13.7.17 The medium/high magnitude of effects are mostly related to the high percentage increase of vehicles, which is driven mostly by low baseline hourly traffic flows, with the exception of Links 5 and 15.

13.7.18 With reference to **Table 13-7** and based upon the above impact magnitudes and applied sensitivity of the transportation links, development-generated traffic and transportation-related significance of effects are detailed in **Table 13-19** during the peak construction year (2025).

Table 13-19. Summary of potential effects (construction)

ATC Link	Description	Total traffic increase	NMU Amenity	Severance	Driver Delay	Accidents and Safety	Fear and Intimidation	Overall Significance Factor
1	New Road – north of A645 roundabout	Negligible	Negligible	Negligible	Negligible	See Table 13-20	Negligible	Not Significant
2	Green Lane – north of A63 junction	Minor	Minor	Minor	Minor	See Table 13-20	Minor	Not Significant
3	Wood Lane – between Brind Lane and B1228	Negligible	Negligible	Negligible	Negligible	See Table 13-20	Negligible	Not Significant
4	Wood Lane – between Wood Lane and Willitoft Lane	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant
5	Street Lane – between Wood Lane and Willitoft Lane	Minor	Negligible	Negligible	Negligible	See Table 13-20	Negligible	Not Significant
6	Willitoft Road – east of B1228 junction	Negligible	Negligible	Negligible	Negligible	See Table 13-20	Negligible	Not Significant
7	A163 – between North Duffield and Bubwith	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant
8	Bell Lane – south of Foggathorpe	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant
9	A163 – east of Foggathorpe	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant
10	A614 – south of Burse Lane Ends	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant
11	Ings Lane – east of Spaldington	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant

ATC	Link Description	Total traffic increase	NMU Amenity	Severance	Driver Delay	Accidents and Safety	Fear and Intimidation	Overall Significance Factor
12	Willitoft Road – north of Ings Lane junction	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant
13	Unnamed Road – Spaldington Golf Range	Minor	Negligible	Negligible	Negligible	See Table 13-20	Negligible	Not Significant
14	A614 – north of B1230 roundabout	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant
15	B1228 – between B1230 and Brind Lane junctions	Moderate (significant)	Minor	Minor	Minor	See Table 13-20	Minor	Significant
16	A63 – between A614 and B1228 junctions	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant
17	A645 – east of New Road roundabout	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant
18	A645 – between New Road and A1041 roundabouts	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant
19	A63 – between School Road and Woodhall Lane	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Not Significant

- 13.7.19 As shown in **Table 13-19**, with the embedded mitigation in place (outlined in section 13.8 of this chapter), there is one link that would experience potentially significant effects:
- a. Link 15: B1228 – between B1230 and Brind Lane junctions in terms of traffic and transport.
- 13.7.20 Despite high and medium impacts assessed at Link 5 in terms of the assessment criteria, due to the sensitivity degree of the road (very low), the significance of the effect is anticipated to be minor/ negligible.

Accidents and Safety

- 13.7.21 The following road links have been considered further in terms of accidents and safety, due to a 30% or higher increase in total traffic along the network, as stated within **Table 13-6**:
- a. Link 2: Green Lane – north of A63 junction;
 - b. Link 3: Wood Lane – between Brind Lane and B1228;
 - c. Link 5: Street Lane – between Wood Lane and Willitoft Lane;
 - d. Link 6: Willitoft Road – east of B1228 junction;
 - e. Link 13: Unnamed Road – Spaldington Golf Range; and
 - f. Link 15: B1228 – between B1230 and Brind Lane junctions.
- 13.7.22 The data at each of these locations are set out in Section 13-7 Accidents and Safety. The accident data descriptions do not suggest a pattern of safety issues that could be aggravated by the construction of the Scheme.
- 13.7.23 Based on this assumption the road links with traffic increases of greater than 30% have been given a magnitude rating of Very Low, as shown in **Table 13-20**.

Table 13-20. Accidents and Safety magnitude on links with traffic increases greater than 30%

ATC Link Description	Accidents and Safety Criteria Magnitude
2 Green Lane – north of A63 junction	Very Low
3 Wood Lane – between Brind Lane and B1228	Very Low
5 Street Lane – between Wood Lane and Willitoft Lane	Very Low
6 Willitoft Road – east of B1228 junction	Very Low
13 Unnamed Road – Spaldington Golf Range	Very Low
15 B1228 – between B1230 and Brind Lane junctions	Very Low

- 13.7.24 Throughout the construction phase, measures delivered (including those in the **Framework CTMP (Appendix 13-5, ES Volume 2 [EN010143/APP/6.2])**) would be focused on reducing traffic impacts in these areas where needed.

Operational Effects

- 13.7.25 During the operational phase, it is expected there would be one to three staff on-site per day arriving in their own vehicles. Other visitors (e.g., maintenance workers and deliveries) will be needed on-site on an *ad hoc* basis. The number is not expected to be more than four visitors per day.
- 13.7.26 Panel replacements from on-site storage would be transported via transit van and the removed (waste) panels would be stored at Johnson's Farm (Solar PV Area 1e), until they can be taken from Site for recycling. This would be infrequent, totalling around one LGV per year.
- 13.7.27 Every two years, the solar PV panels would be cleaned with water brought in 1 tonne trucks. A total of 220 trucks would be needed for cleaning over a 2-month period, meaning three to four trucks would be on-site each day at this time. Cleaning would occur at night-time meaning trucks would arrive to the Site at the end of the day.
- 13.7.28 If inverter failure were to occur, spares on site will be used and new ones will be ordered for the stockpile. Central inverters would have a stockpile of four to five spares, and string inverters would have a stockpile for around 25 spares. Replacements would be delivered in a transit van or similar. Solar PV panel failures will also be replaced from stock on-site, and the failed panels removed. Therefore, a small number of transit van or similar vehicle trips across the operational phase may be associated with panel removal/delivery and inverter removal/ delivery would be expected.
- 13.7.29 In addition, if transformer failure occurred during the operational phase this would result in one AIL trip for delivery and removal. This is unlikely however, as two spare phases will be delivered initially to safeguard from this.
- 13.7.30 These low levels of operational traffic would remain constant for the 40-year operational lifetime of the Scheme.
- 13.7.31 Operational effects are therefore expected to be **negligible** for all potential impacts (total traffic increase [including HGV], severance, driver delay, accidents and safety, and fear and intimidation).

Decommissioning Effects

- 13.7.32 For the purposes of the EIA, the decommissioning assessment year is assumed to be 2067, as described in **Chapter 5: EIA Methodology, ES Volume 1 [EN010143/APP/6.1]**. The decommissioning period is expected to be similar in duration and nature to the construction phase and could be phased if required. It is expected that fewer road trips will be required, particularly if the most environmentally acceptable mode of cable decommissioning remains leaving the cables *in situ*, to avoid disturbance to overlying land and habitats and to neighbouring communities. It is therefore considered reasonable to assume that the impacts will be the same as, or not greater than, the construction phase. This may overestimate the actual impacts slightly, but it is considered broadly accurate.
- 13.7.33 The decommissioning phase has therefore not been specifically modelled and the effects and mitigation for construction are considered applicable for decommissioning.

13.7.34 Decommissioning effects are anticipated to be comparable (though likely an overestimate of the effects) to construction. Therefore decommissioning is expected to be **negligible** for all potential impacts (total traffic increase [including HGV], severance, driver delay, accidents and safety, and fear and intimidation) except for at Links 5 and 15 where minor to moderate effects could be expected.

Summary

13.7.35 A summary table of the assessment of effects for transport and access when considering construction, operation and decommissioning is provided in **Table 13-21**.

Table 13-21. Summary of magnitude of impact and significance of effect (transport and access)

Receptor	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category	Significant effect (Yes / No)
Road links	Very Low-Medium	Overall traffic: increase in construction and decommissioning phase traffic	Very Low-Medium adverse	Moderate Adverse (Link 15) Negligible/Minor Adverse (All other links)	Yes (Link 15) No (All other links)
Road links	Very Low-Medium	Overall traffic: increase in operational phase traffic	Very Low	Negligible (All other links)	No (All links)
Road links	Very Low-Medium	HGVs: increase in construction and decommissioning phase HGV traffic	Very Low-Medium adverse	Moderate Adverse (Link 15) Negligible/Minor Adverse (All other links)	Yes (Link 15) No (All other links)
Road links	Very Low-Medium	HGVs: increase in operational phase HGV traffic	Very Low	Negligible (All other links)	No (All links)
Road users	Very Low-Medium	Severance during construction and decommissioning	Very Low-Medium adverse	Negligible-Minor Adverse (All links)	No (All links)
Road users	Very Low-Medium	Severance during operation	Very Low	Negligible (All links)	No (All links)
Road users	Very Low-Medium	Driver delay during construction and decommissioning	Very Low-Medium adverse	Negligible-Minor Adverse (All links)	No (All links)

Receptor	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category	Significant effect (Yes / No)
Road users	Very Low-Medium	Driver delay during operation	Very Low	Negligible (All links)	No (All links)
Pedestrians, equestrian and cyclists	Very Low-Medium	NMU amenity during construction and decommissioning	Very Low-Medium adverse	Negligible-Minor Adverse (All links)	No (All links)
Pedestrians, equestrian and cyclists	Very Low-Medium	NMU amenity during operation	Very Low	Negligible (All links)	No (All links)
Pedestrians, equestrian and cyclists	Very Low-Medium	Fear and intimidation during construction and decommissioning	Very Low-Medium adverse	Negligible-Minor Adverse (All links)	No (All links)
Pedestrians, equestrian and cyclists	Very Low-Medium	Fear and intimidation during operation	Very Low	Negligible (All links)	No (All links)
Road users	Very Low-Medium	Road safety during construction and decommissioning	Very Low	Negligible-Minor Adverse (All links)	No (All links)
Road users	Very Low-Medium	Road safety during operation	Very Low	Negligible (All links)	No (All links)

13.8 Additional Mitigation and Enhancement Measures

- 13.8.1 Additional mitigation measures would only be required where significant effects are identified following the application of embedded mitigation measures. However, as all mitigation is embedded within the Scheme design in relation to transport and access, it is not considered that further additional mitigation measures will be introduced.

13.9 Residual Effects

- 13.9.1 As all mitigation that seeks to reduce the impact of vehicles will be embedded, it is unlikely that the residual effects can be mitigated further.
- 13.9.2 The residual effects therefore remain the same as stated in the assessment of likely effects, with potentially significant adverse effects at Link 15 along the B1228, during construction and therefore potentially during decommissioning.
- 13.9.3 Over the course of a 24-hour period, during construction (and decommissioning), it is anticipated that Link 15 will experience a 6% increase in total traffic and a 0% increase in HGV traffic. This indicates that the overall impact on the road network will be low at this link location during the hours of 07:00-19:00.
- 13.9.4 It should be noted that even with the construction traffic added to the base traffic during the 06.00-07.00 period, it is still comparable to the network AM peak hour traffic (08.00-09.00), with 243 vehicles between 06.00-07.00 and 225 vehicles between 08.00-09.00. During the PM peak hour (17.00-18.00), traffic is higher (295 vehicles) than the PM construction traffic period (19.00-20.00, 225 vehicles). This has the effect of essentially lifting the traffic flows either side of the peaks to the same level, therefore extending the peak hours by another hour in the morning and the evening.
- 13.9.5 The predicted traffic levels owing to the operational phase are significantly lower than during the construction and decommissioning phases. Operational effects are therefore expected to be negligible and not significant.
- 13.9.6 **Table 13-22** and **Table 13-23** provide a summary of the residual effects in relation to transport and access.

Table 13-22. Residual effects – Transport and Access (construction and decommissioning)

Receptor	Description of impacts including duration	Embedded mitigation	Significance of effect with embedded mitigation	Additional mitigation/enhancement measures	Residual effect
Road links	Increase in construction and decommissioning phase traffic (medium-term, temporary)	Various traffic management measures to be implemented by Framework CTMP and Framework CEMP/ DEMP; access points to the Site	Moderate Adverse (Link 15) – Significant Negligible/Minor Adverse (All other links) – Not Significant	None identified.	Moderate Adverse (Link 15) – Significant Negligible/Minor Adverse (All other links) – Not Significant
Road links	Increase in construction and decommissioning phase HGV traffic (medium-term, temporary)	Various traffic management measures to be implemented by Framework CTMP and Framework CEMP/ DEMP; access points to the Site	Moderate Adverse (Link 15) – Significant Negligible/Minor Adverse (All other links) – Not Significant	None identified.	Moderate Adverse (Link 15) – Significant Negligible/Minor Adverse (All other links) – Not Significant
Road users	Severance during construction and decommissioning (medium-term, temporary)	Various traffic management measures to be implemented by Framework CTMP and Framework CEMP/ DEMP; access points to the Site	Negligible-Minor Adverse – Not Significant	None identified.	Negligible-Minor Adverse – Not Significant
Road users	Driver delay during construction and decommissioning (medium-term, temporary)	Various traffic management measures to be implemented by Framework CTMP and Framework CEMP/ DEMP; access points to the Site	Negligible-Minor Adverse – Not Significant	None identified.	Negligible-Minor Adverse – Not Significant

Receptor	Description of impacts including duration	Embedded mitigation	Significance of effect with embedded mitigation	Additional mitigation/enhancement measures	Residual effect
Pedestrians, equestrian and cyclists	NMU amenity during construction and decommissioning (medium-term, temporary)	Various traffic management measures to be implemented by Framework CTMP and Framework CEMP/ DEMP; access points to the Site	Negligible-Minor Adverse – Not Significant	None identified.	Negligible-Minor Adverse – Not Significant
Pedestrians, equestrian and cyclists	Fear and intimidation during construction and decommissioning (medium-term, temporary)	Various traffic management measures to be implemented by Framework CTMP and Framework CEMP/ DEMP; access points to the Site	Negligible-Minor Adverse – Not Significant	None identified.	Negligible-Minor Adverse – Not Significant
Road users	Road safety during construction and decommissioning (medium-term, temporary)	Various traffic management measures to be implemented by Framework CTMP and Framework CEMP/ DEMP; access points to the Site	Negligible-Minor Adverse – Not Significant	None identified.	Negligible-Minor Adverse – Not Significant

Table 13-23. Residual effects – Transport and Access (operation)

Receptor	Description of impacts including duration	Embedded mitigation	Significance of effect with embedded mitigation	Additional mitigation/enhancement measures	Residual effect
Road links	Increase in operational phase traffic (long-term, temporary)	Various traffic management measures to be implemented by Framework OEMP; access points to the Site	Negligible – Not Significant	None identified.	Negligible – Not Significant
Road links	Increase in operational phase HGV traffic (long-term, temporary)	Various traffic management measures to be implemented by Framework OEMP; access points to the Site	Negligible – Not Significant	None identified.	Negligible – Not Significant
Road users	Severance during operational (long-term, temporary)	Various traffic management measures to be implemented by Framework OEMP; access points to the Site	Negligible – Not Significant	None identified.	Negligible – Not Significant
Road users	Driver delay during operational (long-term, temporary)	Various traffic management measures to be implemented by Framework OEMP; access points to the Site	Negligible – Not Significant	None identified.	Negligible – Not Significant
Pedestrians, equestrian and cyclists	NMU amenity during operational (long-term, temporary)	Various traffic management measures to be implemented by Framework OEMP; access points to the Site	Negligible – Not Significant	None identified.	Negligible – Not Significant
Pedestrians, equestrian and cyclists	Fear and intimidation during operational	Various traffic management measures to be implemented by	Negligible – Not Significant	None identified.	Negligible – Not Significant

Receptor	Description of impacts including duration	Embedded mitigation	Significance of effect with embedded mitigation	Additional mitigation/enhancement measures	Residual effect
	(long-term, temporary)	Framework OEMP; access points to the Site			
Road users	Road safety during operational (long-term, temporary)	Various traffic management measures to be implemented by Framework OEMP; access points to the Site	Negligible – Not Significant	None identified.	Negligible – Not Significant

13.10 Cumulative Effects

- 13.10.1 This section assesses the potential effects of the Scheme in combination with the potential effects of other proposed and committed plans and projects including other developments (referred to as 'cumulative schemes') within the surrounding area.
- 13.10.2 The cumulative schemes to be considered in combination with the Scheme have been agreed in consultation with relevant Local Planning Authorities and are listed in **Appendix 17-1: Shortlist of Cumulative Schemes, ES Volume 2 [EN010106/APP/6.2]**. The cumulative assessment methodology is presented within **Chapter 5: EIA Methodology, ES Volume 1 [EN010106/APP/6.1]**.
- 13.10.3 This cumulative effect assessment identified for each receptor those areas where the predicted effects of the Scheme could interact with effects arising from other plans and, or projects on the same receptor based on a spatial and, or temporal basis.
- 13.10.4 As noted earlier in the chapter, the future traffic baselines predicted for the 2025 assessment period have also been already calculated using TEMPro growth factors, which include a forecast of local development growth and attempts to capture growth attributed to these other developments. Theoretically the cumulative schemes have therefore already been captured in the future baseline. This section considers each cumulative scheme individually to sense check this, and whether it is necessary consider each in addition to the Scheme. This is likely to therefore overestimate the cumulative effects.
- 13.10.5 The cumulative schemes are listed below in **Table 13-24**, along with a description of whether each needs to be included within the cumulative assessment of traffic and transport as set out within this chapter.

Table 13-24. Potential Cumulative Schemes (Transport and Access) Short-list

Scheme ID	Scheme Name	Local Planning Authority	Distance from the Order Limits	Summary of the Cumulative Effects
2	22/01990/STPLFE	East Riding of Yorkshire	0.03km	This development is anticipated to impact ATCs 1, 5, 7, 9, 15, 17 and 18, with installation date expected to commence in late 2024 to 2029. Therefore, the impact will be considered as moderate and has been included within assessment of cumulative effects.
4	EN010120	North Yorkshire Council	Overlap with the Order limits	This development is anticipated to impact ATCs 1, 17, 18, with construction taking place

Scheme ID	Scheme Name	Local Planning Authority	Distance from the Order Limits	Summary of the Cumulative Effects
				between 2022 and 2027. Therefore, the impact has been considered further within the assessment of cumulative effects.
6	EN010091	North Yorkshire Council	Overlap with the Order limits	This development is anticipated to impact ATCs 1, 17, 18, with construction of the potential second unit taking place between 2024 and 2027. Therefore, the impact has been considered further within the assessment of cumulative effects.
7	22/02118/STPLFE	East Riding of Yorkshire	0.16km	This development is anticipated to impact ATCs 14 and 15, with work on the commercial element anticipated to be complete by October 2025 and the remaining Land Parcels completed before 2039. Therefore, the impact has been considered further within the assessment of cumulative effects.
24	2021/0348/SCN	North Yorkshire Council	3.4km	This development is in the pre-application stages, so no information on the construction years, or generated traffic are currently available. Therefore, this development has not been included in the cumulative assessment.
28	22/00037/STOUT	East Riding of Yorkshire	2.7km	This development is anticipated to impact ATC 16, though the peak year is not indicated. Therefore, the impact will be considered as

Scheme ID	Scheme Name	Local Planning Authority	Distance from the Order Limits	Summary of the Cumulative Effects
				moderate and is included within the assessment of cumulative effects.
32	HOW F (East Riding of Yorkshire Local Plan)- LAND AT OZONE BUSINESS PARK 8.1HA	East Riding of Yorkshire	2.8km	As this is part of the Howden Local Plan (2039) it is considered that TEMPro software will accurately cover traffic generated by this development. Therefore, this development has not been included in the cumulative assessment again, to avoid double counting.
50	MJP45 (Joint Minerals and Waste Plan)	North Yorkshire Council	2km	This development is within the area of transport impacts but will not commence until 2026. This still has been considered further in the cumulative development assessment to consider a worst-case scenario for generated development traffic and the scheme occurring in the same year. The development may be anticipated to impact ATC locations 16 and 19.
52	HOW-A (East Riding of Yorkshire Local Plan Update)- North of Shelford Avenue	East Riding of Yorkshire	1.6km	As this is part of the Howden Local Plan (2039) it is considered that TEMPro software will accurately cover traffic generated by this development. Therefore, this development has not been included in the cumulative assessment again, to avoid double counting.
53	HOW- H (East Riding of Yorkshire Local Plan Update)- North of Ozone Business Park	East Riding of Yorkshire	2.9km	As this is part of the Howden Local Plan (2039) it is considered that TEMPro software will accurately cover traffic generated by this development. Therefore, this development has not been included in the cumulative assessment again, to avoid double counting.
62	22/03575/EIASCO	East Riding of Yorkshire	2.2km	This is still in the pre-application stages, with the peak years to be assessed being 2028

Scheme ID	Scheme Name	Local Planning Authority	Distance from the Order Limits	Summary of the Cumulative Effects
				and 2033, which is not expected to intersect with the peak traffic generated by the Scheme. Therefore, this development has not been included in the cumulative assessment.
64	2022/1257/FULM	North Yorkshire Council	2.9km	This application was refused and therefore, the cumulative impact of this scheme has not been considered further.
66	2022/0358/FULM	North Yorkshire Council	0.83km	The development is anticipated to impact ATCs 1, 17 and 18, with construction commencing by March 2025. Therefore, the impact has been considered further within the assessment of cumulative effects.
70	2020/0994/FULM	North Yorkshire Council	0.3km	The development is anticipated to impact ATCs 1, 17 and 18, with decommissioning occurring between 2021 and 2027. Therefore, the impact has been considered further within the assessment of cumulative effects.
75	2021/1089/FULM	North Yorkshire Council	0.05km	The development is anticipated to impact ATCs 17 and 18, with development expected to commence by July 2023. Therefore, the impact has been considered further within the assessment of cumulative effects.
67	2018/1122/REMM	North Yorkshire Council	2.3km	These developments are not shown by the applications to generate

Scheme ID	Scheme Name	Local Planning Authority	Distance from the Order Limits	Summary of the Cumulative Effects
72	2019/0345/FULM	North Yorkshire Council	5km	traffic that will intersect with any of the ATC locations noted within the Site and therefore, these developments have not been included in the cumulative assessment.
73	2021/0400/FULM	North Yorkshire Council	4.7km	
76	2022/0494/S73	North Yorkshire Council	2.9km	
77	2022/0287/SCN	North Yorkshire Council	3.77km	
78	2022/0153/FULM	North Yorkshire Council	5km	
80	NDUF-O (Selby District Local Plan Publication Version)- Land north of Gothic Farm, Back Lane	North Yorkshire Council	4.8km	
81	CARL-G (Selby District Local Plan Publication Version)- Land north of Mill Lane	North Yorkshire Council	2.5km	
87	ZG2023/0732/OUTM	North Yorkshire Council	2.6km	

13.10.6 From the short-list, the cumulative schemes being considered further are listed below:

- a. Scheme ID 2 (Scotland England Green Link 2 – English Offshore Scheme) in terms of ATCs 1, 5, 7, 9, 15, 17 and 18;
- b. Scheme ID 4 (Drax Bioenergy with Carbon Capture and Storage Project) in terms of ATCs 1, 17 and 18);
- c. Scheme ID 6 (Drax Power Station Re-Power Project) in terms of ATCs 1, 17 and 18);
- d. Scheme ID 7 (J.G. Hatcliffe Property and Planning and Howdens Joinery Properties Ltd development of mixed-use allocation at 'HOW-G') in terms of ATCs 14 and 15;

- e. Scheme ID 28 (Horncastle Group Plc development of up to 40,500 square metres of Employment building and associated development) in terms of ATCs 16;
 - f. Scheme ID 50 (Minerals Extraction from a Proposed Allocation Site as part of the Minerals & Waste Joint Plan 2022) in terms of ATCs 16 and 19;
 - g. Scheme ID 66 (Perfectly Fresh Ltd development of horticultural facility) in terms of ATCs 1, 17 and 18
 - h. Scheme ID 70 (Flue Gas Desulphurisation Demolition in terms of 1, 17, and 18; and
 - i. Scheme ID 75 (Aura Power Storage Solutions Limited development of Battery Storage Facility) in terms of ATCs 17 and 18.
- 13.10.7 At the different road links potentially affected by these cumulative schemes (ATC locations 1 to 19), the following links are predicted to experience a medium or high magnitude of impact, which warrant consideration in terms of the potential for significant cumulative effects:
- a. Link 2: Green Lane – north of A63 Junction is predicted to experience a medium magnitude of impact in terms of total traffic increase, NMU amenity, severance, driver delay, fear and intimidation;
 - b. Link 3: Wood Lane – between Brind Lane and B1228 is predicted to experience a medium magnitude of impact in terms of total traffic increase, NMU amenity, severance, driver delay, fear and Intimidation;
 - c. Link 5: Street Lane – between Wood Lane and Willitoft Lane is predicted to experience a high magnitude of impact in terms of total traffic increase, and a medium magnitude of impact in terms of NMU amenity, severance, driver delay, fear and intimidation;
 - d. Link 6: Willitoft Road – east of B1228 junction is predicted to experience a medium magnitude of impact in terms of total traffic increase, NMU amenity, severance, driver delay, fear and intimidation;
 - e. Link 13: Unnamed Road – Spaldington Golf Range is predicted to experience a medium magnitude of impact in terms of total traffic increase; and
 - f. Link 15: B1228 – between B1230 and Brind Lane junctions is predicted to experience a high magnitude of impact in terms of total traffic increase, and a medium magnitude of impact in terms of NMU amenity, severance, driver delay, fear and intimidation, and accidents and safety.
- 13.10.8 It is not expected that magnitudes of impact associated with the Scheme that are very low can contribute to likely significant effects, and these links have therefore been discounted from the cumulative impact assessment.
- 13.10.9 Therefore, considering links where the magnitude of impact of construction and decommissioning is assessed to be medium or high, only the following cumulative schemes need to be assessed further:
- a. Scheme ID 2 (Scotland England Green Link 2 – English Offshore Scheme) in terms of ATCs 5 and 15;

- b. Scheme ID 7 (J.G Hatcliffe Property and Planning and Howdens Joinery Properties Ltd development of mixed-use allocation at 'HOW-G') in terms of ATC 15.

13.10.10 These schemes have been assessed based on a 24-hour AADT profile representing two-way flows. This has been based on the best available information and exact calculations may deviate slightly from these results. It is noted that neither scheme states their peak generated traffic flows to be between the hours of 06:00-07:00 or 19:00-20:00, meaning cumulative impact at the peak hours of the Scheme would be negligible.

13.10.11 **Table 13-25** indicates Scheme ID 2's impact along the road links at ATC locations 5 and 15.

Table 13-25. Scotland England Green Link 2 – English Offshore Scheme Daily Generated Trips in 2025

Link	Link Description	Peak Construction Traffic		
		Workers	HGVs	Total
5	Street Lane – between Wood Lane and Willitof Lane	11	21	32
15	B1228 – between B1230 and Brind Lane junctions	11	21	32

13.10.12 **Table 13-26** indicates Scheme ID 7's impact along the road link at ATC location 15.

Table 13-26. J.G Hatcliffe Property and Planning and Howdens Joinery Properties Ltd development of mixed-use allocation at 'HOW-G' Daily Generated Trips in 2025

Link	Link Description	Peak Construction Traffic		
		Workers	HGVs	Total
15	B1228 – between B1230 and Brind Lane junctions	11	0	11

13.10.13 Considering the baseline traffic for 2025 with the cumulative traffic at the ATC locations, the 24 AADT flows at the links are presented in **Table 13-27**.

Table 13-27. 2025 Base + Cumulative Development Two-Way Daily Flows

Link No.	Sensitivity	2025 Baseline Traffic		Cumulative Development Traffic		2025 Baseline + Cumulative Development Traffic	
		Total Traffic	Total HGVs	Total Traffic	Total HGVs	Total Traffic	Total HGVs
5	Very Low	2382	432	32	21	2414	453
15	Low	3086	622	43	21	3129	643

13.10.14 The combined future baseline and cumulative development traffic and peak construction traffic (months 6-9 of the construction programme) have been combined to give a percentage increase for total vehicles and HGVs on Links 5 and 15 (as presented in **Table 13-28**).

Table 13-28. 2025 Base + Cumulative Development + Construction Traffic Two-Way Daily Flows

Link No.	2025+ Cumulative Development		Construction Traffic		2025 + Cumulative Development + Construction Traffic		Percentage Increase	
	Total Traffic	Total HGVs	Total Traffic	Total HGVs	Total Traffic	Total HGVs	Total Traffic	Total HGVs
5	2414	453	185	14	2599	477	8%	5%
15	3129	643	216	0	3345	643	7%	0%

13.10.15 The table shows the percentage increase is 7% on Link 15 (0% for HGVs) and 8% on Link 5 (5% for HGVs). Comparatively, the inclusion of cumulative development traffic has little impact on the percentage change of traffic flows, compared with the impact of the Scheme. At Link 5, the percentage change in all traffic associated with the Scheme on its own is 8% and HGVs is 6%. At Link 15, there is no change to the percentage change in flows with or without the cumulative schemes relative to the Scheme on its own⁵.

13.10.16 This demonstrates that the impact of cumulative developments in terms of the assessment conducted is minimal in terms of changing the 24-hour flows. It is therefore considered that the magnitude of impact at the road Links 5 and 15 remain unchanged when cumulative developments are taken into consideration within 24-hour profile.

⁵ When construction traffic is added to the Scheme only, this causes an 8% increase in total traffic at ATC 5 and a 7% increase in total traffic at ATC 15. In terms of HGV traffic, when construction traffic is added to the Scheme only, this causes a 6% increase in total HGVs at ATC 5 and a 0% increase in HGVs at ATC 15. The increase of baseline traffic when cumulative development is included in assessment, means that the overall percentage increase in traffic may appear to be less, as is the case with HGV traffic at ATC 5.

13.11 References

- Ref. 13-1 Department for Energy Security & Net Zero (2023). Overarching National Policy Statement for Energy (NPS EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf
- Ref. 13-2 Department for Energy Security & Net Zero (2023). National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf
- Ref. 13-3 Department for Energy Security & Net Zero (2023). National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147384/NPS_EN-5.pdf
- Ref. 13-4 Department for Business, Energy & Industrial Strategy (2021). Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf [Accessed 09/10/23].
- Ref. 13-5 Department for Energy Security and Net Zero (2021). Draft National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: <https://assets.publishing.service.gov.uk/media/6132409b8fa8f503b02d1e10/en-3-draft-for-consultation.pdf>
- Ref. 13-6 Department for Business, Energy & Industrial Strategy (2021). Draft National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: <https://assets.publishing.service.gov.uk/media/613240ee8fa8f503bd4589a0/en-5-draft-for-consultation.pdf>
- Ref. 13-7 Department for Levelling Up, Housing and Communities (2023). National Planning Policy Framework. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1182995/NPPF_Sept_23.pdf [Accessed 09/10/23].
- Ref. 13-8 Department for Transport (2014) Guidance on Travel Plans, Transport Assessments and Statements in Decision Taking. Available at: <https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements> [Accessed 09/10/23].
- Ref. 13-9 Department for Transport Circular 01/2022 (2022). Strategic road network and the delivery of sustainable development. Available at: <https://www.gov.uk/government/publications/strategic-road-network-and-the-delivery-of-sustainable-development/strategic-road-network-and-the-delivery-of-sustainable-development> [Accessed 09/10/23].
- Ref.13-10 East Riding of Yorkshire Council (2021). Local Transport Plan 2021 – 2039. Available at: <https://www.eastriding.gov.uk/council/plans-and-policies/other-plans-and-policies-information/transport/local-transport-plan/> [Accessed 09/10/23].

- Ref. 13-11 East Riding of Yorkshire Council (2016). East Riding Local Plan 2012-2019 Strategy Document. Available at: East Riding Local Plan (adopted April 2016).
- Ref. 13-12 East Riding of Yorkshire Council (2022). Emerging East Riding of Yorkshire Local Plan (East Riding Local Plan Update 2020 – 2039: Proposed Submission Strategy Document Update 2022).
- Ref. 13-13 Selby District Council (2022). Selby District Council Local Plan Publication Version. Available at: <https://democracy.selby.gov.uk/documents/s16614/Appendix%201%20Publication%20Local%20Plan.pdf> [Accessed 09/10/23].
- Ref. 13-14 North Yorkshire County Council (2016). Local Transport Plan 4. Available at: <https://www.northyorks.gov.uk/sites/default/files/fileroot/About%20the%20Council/Strategies%2C%20plans%20and%20policies/63761%20LTP4%20full%20-%20accessible.pdf> [Accessed 09/10/23].
- Ref. 13-15 Institute of Environmental Management and Assessment (IEMA) Guidelines (2023). Environmental Assessment of Traffic and Movement. Available at: <https://www.iema.net/resources/blog/2023/07/12/new-iema-guidance-environmental-assessment-of-traffic-and-movement> [Accessed 09/10/23].
- Ref 13-16 The Institute of Environmental Management (1993). Guidelines for the Environmental Assessment of Road Traffic. Available at: https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/filer_public/dc/df/dcdfa287-b475-4fbb-bd4e-a1e96b06be5d/cd71-guideline-for-the-environmental-assessment-of-road-traffic-institute-of-environmental.pdf [Accessed 09/10/23].
- Ref. 13-17 Standards for Highways (2023). Design Manual for Road and Bridges (DMRB) CD 123 Geometric design of at-grade priority and signal-controlled junctions. Available at: <https://www.standardsforhighways.co.uk/search/html/962a81c1-abda-4424-96c9-fe4c2287308c?standard=DMRB>
- Ref. 13-18 Office for National Statistics (2011). Census. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/keystatisticsandquickstatisticsforlocalauthoritiesintheunitedkingdom/2013-10-11>
- Ref. 13-19 Website: Crashmap.com. Available at: <https://www.crashmap.co.uk/Search>
- Ref. 13-20 The Road Vehicles (Authorisation of Special Types) (General) Order 2003. Available at: <https://www.legislation.gov.uk/ukxi/2003/1998/contents/made>