Tween Bridge Solar Farm

Environmental Statement
Chapter 12: Transport and Access

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

APFP Regulation 5(2)(a)

Document Reference: 6.2.12

August 2025

Revision 1

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12. Transport and Access

12.1. Introduction

12.1.1. This **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** assesses the likely significant effects of the Scheme in terms of traffic and transport.

12.1.2. This assessment reports on the baseline and Scheme design information available at the time of writing this ES. The Scoping Opinion issued by the Planning Inspectorate on 13 March 2023 (see **ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**) and consultation responses (see summary of consultation at 12.1) have been taken into account during the preparation of this Chapter and this is discussed in detail below.

12.1.3. This chapter is supported by the following figures:

- **ES Figure 12.1 – Indicative Access Strategy [Document Reference 6.4.12.1]**

12.1.4. This **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** chapter is supported by the following appendices:

- **Appendix 12.1 - Transport Statement [Document Reference 6.3.12.1]**
- **Appendix 12.2 - Summary of Sensitive Receptors [Document Reference 6.3.12.2]**
- **Appendix 12.3 – Baseline Traffic Survey Report [Document Reference 6.3.12.3]**

12.1.5. An **Outline Construction Traffic Management Plan (CTMP)** is provided within Volume 7 of this ES **[Document Reference 7.7].**

12.2. Consultation

12.2.1. This **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** has been informed by consultation responses received to date as part of scoping, non-statutory consultation and statutory consultation.

12.2.2. The following transport and access comments were provided in the Planning Inspectorate Scoping Opinion issued by the Planning Inspectorate dated 13 March 2023 (see **ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**).

Table 12-1: Summary of Consultation - Scoping Opinion for the Scheme

ID	REF	MATTER	PLANNING INSPECTORATE COMMENTS	APPLICANT'S RESPONSE
2.1.2	Paras 2.9 and 2.23	Temporary roadways	The ES should describe the type of temporary roadways required, along with their anticipated location and duration of use. Any likely significant effects resulting from their installation, use and removal should be assessed.	Temporary access tracks will be provided internal of the land parcels shown on **ES Figure 12.1 - Indicative Access Strategy [Document Reference 6.4.12.1] and** are anticipated to be removed by 2033 (one year after the site becomes fully operational). This is set out at paragraphs 3.16 and 3.17 of the **Outline CTMP [Document Reference 7.7].** The **Outline CTMP [Document Reference 7.7]** has

ID	REF	MATTER	PLANNING INSPECTORATE COMMENTS	APPLICANT'S RESPONSE
				been updated as the Scheme has progressed and in response to consultation. Where relevant, any likely significant effects resulting from the installation, use and removal of the access points and internal tracks are assessed in **ES Chapter 6 Landscape and Visual [Document Reference 6.2.6]**
2.1.3	Paras 2.10 and 2.27 to 2.28	Management and maintenance	The ES should describe the potential scope and duration of maintenance works that would be required during the operation of the Proposed Development, including predicted vehicle movements and staffing numbers. Proposals for maintaining vegetation around easements and the	The potential works required during the operational phase and predicted number of vehicle movements associated with the operational phase are set out at **Section 12.5** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** and in the Transport Statement at **Appendix 12.1**

ID	REF	MATTER	PLANNING INSPECTORATE COMMENTS	APPLICANT'S RESPONSE
			Public Rights of Way (PRoW) within the application site should also be described.	**Document Reference 6.3.12.1** at paragraph 5.4.9 and 12.4.10. Details of PRoW routes are confirmed in **ES Chapter 6 Landscape and Visual [Document Reference 6.2.6],** and maintenance of vegetation is secured through the **Outline Landscape Ecological Management Plan [Document Reference 7.9.6].**
2.1.12	Paras 2.23 to 2.25	Construction compound(s)	The ES should confirm the locations and sizes of the main construction compound and smaller compounds and where possible, show detailed layouts. Any mitigation measures proposed to avoid or minimise impacts relating to the use of compounds should be described in the ES.	The location of the construction compounds including indicative sizes is shown on the site layout at **ES Figure 2.2a – Indicative Operational Layout Plan (Fixed Solar Panel)/2.2b – Indicative Operational Layout Plan (Fixed and Tracker Solar Panel)** [**Document Reference 6.4.2.2**].

ID	REF	MATTER	PLANNING INSPECTORATE COMMENTS	APPLICANT'S RESPONSE
				Consideration of the effect of construction traffic accessing the construction compounds is provided at **Section 12.5** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12]**. Mitigation associated with the movement of traffic to and from the construction compounds is set out at Chapter 6 of the **Outline CTMP [Document Reference 7.7].**
2.1.17	n/a	Vehicle movements	The ES should detail the number of anticipated vehicle movements during all phases of the Proposed Development and explain the assumptions upon which these have been established.	**Section 12.5** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** and the **Outline CTMP [Document Reference 7.7]** sets out the anticipated number of vehicle movements per day for construction vehicles delivery

ID	REF	MATTER	PLANNING INSPECTORATE COMMENTS	APPLICANT'S RESPONSE
				plant and materials to the Scheme. The trips associated with operational traffic are included a**t Section 12.5** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** and in the Transport Statement at **Appendix 12.1**. **Section 12.5** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** considers the anticipated number of vehicle movements associated with the Decommissioning phase.
2.2.4	n/a	Study area(s)	The ES should, for each aspect chapter, clearly define and justify the study area(s) used for the assessment of effects from the Proposed Development alone	The study areas have been agreed through scoping discussions as is indicated by the construction traffic routes on **ES Figure 12.1 Indicative Access Strategy**

ID	REF	MATTER	PLANNING INSPECTORATE COMMENTS	APPLICANT'S RESPONSE
			and cumulatively with other development. The study area(s) should be represented on accompanying figures.	**[Document Reference 6.4.12.1].**
3.11.1	Paras 2.29, 10.14 and 10.15	Impact on pedestrians (severance, delay, amenity and fear/ intimidation)	Paragraph 10.14 of the Scoping Report proposes that due to the limited number of pedestrians anticipated within the vicinity of the site, impacts to pedestrians in terms of severance, delay, amenity and fear/ intimidation will not be assessed. The Inspectorate is content that this matter can be scoped out for the operational phase, but not in relation to construction and decommissioning. The temporary diversion or stopping up of a PRoW (Doncaster footpath Thorne 19) may be required during construction and	Usage surveys of the PRoW routes within the Order Limits were carried out by an independent surveyor on Thursday 16 and Saturday 18 May 2024. The location of the surveys was discussed with North Lincolnshire Council Public Right of Way officers and the dates were considered to be representative (one weekday and one weekend day) of typical use during dry months with longer hours of daylight. Further details are provided at **Section 12.4** of this **ES Chapter 12 Transport and Access [Document**

ID	REF	MATTER	PLANNING INSPECTORATE COMMENTS	APPLICANT'S RESPONSE
			decommissioning and the reference to a "limited number" of pedestrians has not been quantified. The ES should assess impacts to users of PRoW or other recreational routes (including severance, delay, amenity and fear/ intimidation) during construction and decommissioning which are likely to result in significant effects. Any such assessment should be supported by pedestrian/ user counts where possible, with effort made to agree the locations for such counts with relevant consultation bodies. Where relevant, the ES should assess potential interactions between aspect assessments (for example traffic and transport, noise, dust,	**Reference 6.2.12]** and at **Appendix 12.3 – Baseline Traffic Survey Report [Document Reference 6.3.12.3].** The impacts to users of the PRoW is considered at **Section 12.5** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12].** Details on noise, dust and visual impact on pedestrians are provided within the **ES Chapter 6 Landscape and Visual Impact Assessment [Document Reference 6.2.6] and Chapter 13 Noise and Vibration [Document Reference 6.2.13]**.

ID	REF	MATTER	PLANNING INSPECTORATE COMMENTS	APPLICANT'S RESPONSE
			recreation and visual impact). The locations of any diversions or closures should be illustrated on suitable figures in the ES.	
3.11.2	Paras 2.24 and 10.7; Appendix 10.1	Access routes	The ES should describe the proposed site entrance/s and the routes to be used for all vehicular access during construction and operation of the Proposed Development and this information should be clearly presented on supporting plans within the ES. The ES should describe and assess the potential impacts (both positive and negative) associated with any improvements/ changes to the access routes which are either required to facilitate construction of the Proposed	The proposed access arrangements and construction traffic routing is set out at **Section 12.5** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** and in detail in the **Outline CTMP [Document Reference 7.7]**. The potential impacts of traffic flows on routes to the site are set out at **Section 12.5** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12].** The potential impacts of the access points are considered in **ES Chapter 6**

ID	REF	MATTER	PLANNING INSPECTORATE COMMENTS	APPLICANT'S RESPONSE
			Development or are required for restoration purposes on completion of the works. For the assessment of impacts during construction the ES should explain how the proposed access route(s) relate to sensitive receptors.	**Landscape and Visual Impact Assessment [Document Reference 6.2.6] and Chapter 13 Noise and Vibration [Document Reference 6.2.13]**. Sensitive receptors relating to the access routes are set out in **Appendix 12.2 - Summary of Sensitive Receptors [Document Reference 6.3.12.2].**
3.11.3	Paras 10.4 to 10.6	Baseline	The Scoping Report states that the Transport and Access ES chapter would consider baseline transportation conditions including traffic flows and highways safety. The ES should describe the baseline environment in full including pedestrian/ user counts (see above), existing land uses and existing site access.	The baseline environment, including traffic flows, highway safety, PRoW user counts, existing land uses and existing site access are set out in **Section 12.4** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** and in the **Outline CTMP [Document Reference 7.7]**.

ID	REF	MATTER	PLANNING INSPECTORATE COMMENTS	APPLICANT'S RESPONSE
3.11.4	Para 10.8	Construction Traffic Management Plan (CTMP)	A draft/ outline copy of the CTMP should be appended to the ES.	An **Outline CTMP** is provided under separate cover **[Document Reference 7.7]**.
3.11.5	n/a	Study area	The ES should explain how the study area for the Transport and Access ES assessment has been defined, with reference to the extent of the likely impacts.	The study area has been agreed with the highway authorities and is set out **Section 12.3** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** and on **ES Figure 12.1 Indicative Access Strategy [Document Reference 6.4.12.1].**

12.2.3. A summary of non-statutory consultation responses received is provided in **Table 12-2.**

Table 12-2: Summary of non-statutory consultation

CONSULTEE	SUMMARY OF CONSULTEE RESPONSE	HOW RESPONSE HAS BEEN ADDRESSED BY APPLICANT
City of Doncaster Council ("CDC")	Noted the scoping email regarding proposed traffic assessment locations.	Automatic Traffic Count surveys have been conducted in line with the proposed scope. These are submitted at **Appendix 12.3 – Baseline Traffic Survey**

CONSULTEE	SUMMARY OF CONSULTEE RESPONSE	HOW RESPONSE HAS BEEN ADDRESSED BY APPLICANT
		Report [Document Reference 6.3.12.3].
North Lincolnshire Council ("NLC")	Confirmed that proposed locations for traffic surveys are acceptable.	Automatic Traffic Count surveys have been conducted in line with the proposed scope. These are submitted at **Appendix 12.3 – Baseline Traffic Survey Report [Document Reference 6.3.12.3]**
NLC	Advised that NLC are likely to have concerns about the site being accessed from the A161/Cross Street junction in Crowle. There are concerns regarding the turning manoeuvre for large vehicles at the A161/Cross Street junction within Crowle. This is due to the radius of the bellmouth and the propensity for on-street parking within the vicinity of the junction. Therefore, alternative construction routes are to be considered. These include: a) The A161 > Godnow Road > Windsor Road > Marsh Road; and b) The A161 > Hazel Avenue > Brewery Road > Northmoor Road > Rainsbutt Road (for which you have kindly	An assessment of the construction traffic routes to Land Parcel B is included at **Section 12.5** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12].** The **Outline CTMP [Document Reference 7.7]** provides further details on access and routing for construction traffic, including those routes via Crowle, **Document Reference 7.7** and sets out the how arrivals and departures of construction vehicles will be managed. The forecast number of HGV movements that are anticipated per day to Land Parcel B is set out at **Section 12.5** of this **ES Chapter 12 Transport and**

CONSULTEE	SUMMARY OF CONSULTEE RESPONSE	HOW RESPONSE HAS BEEN ADDRESSED BY APPLICANT
	provided a PDF detailing this route). Although this route would fall short of the red line boundary, we will consider the viability of using this route before accessing Moor Road/Newbigg > Commonside > Marsh Road. A request for a more precise number of HGV movements into land parcel B is made, and a swept path assessment is to be provided for vehicles using the unnamed road which is proposed to serve access to land parcel P. This is the road that routes between the A161 south of the Crowle roundabout in the east and High Levels Bank in the east. Consideration should also be given to temporary mitigation on this road on the basis that it is a singletrack carriageway, to assist with conflicting vehicles. It is considered that access to the land parcels served from the A18 should be acceptable, providing the arrival and departures of construction vehicles are managed properly.	**Access [Document Reference 6.2.12].** The vehicle movements are forecast to be low in real terms. A summary of the mitigation proposed is set out in **Section 12.6** of this **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** and is also set out in detail the **Outline CTMP [Document Reference 7.7]**, including management measures for accesses off the A18**.**

CONSULTEE	SUMMARY OF CONSULTEE RESPONSE	HOW RESPONSE HAS BEEN ADDRESSED BY APPLICANT
NLC	Request to agree the scope for Non-Motorised User surveys in February 2024.	Non-Motorised User surveys were agreed to be carried out in Spring/Summer seasons. The location of the surveys was discussed with NLC PRoW officers, and the dates were agreed to be representative (one weekday and one weekend day) of typical use during dry months with longer hours of daylight. The surveys were carried out by an independent surveyor on Thursday 16 and Saturday 18 May 2024. These are submitted at **Appendix 12.3 – Baseline Traffic Survey Report [Document Reference 6.3.12.3].**

12.2.4. A summary of statutory consultation responses received is provided in **Table 12-3.**

Table 12-3: Summary of statutory consultation

CONSULTEE	SUMMARY OF CONSULTEE RESPONSE	HOW RESPONSE HAS BEEN ADDRESSED BY APPLICANT
Lincolnshire County Council	Confirms that it is pleased to see that construction traffic to site will route via the Strategic Road Network where possible.	The Applicant thanks Lincolnshire County Council for its response and notes the representation made. As set out in **Section 12.5 of ES Chapter 12 Transport and**

CONSULTEE	SUMMARY OF CONSULTEE RESPONSE	HOW RESPONSE HAS BEEN ADDRESSED BY APPLICANT
		Access [Document Reference 6.2.12] and the **Outline CTMP [Document Reference 7.7]**, all construction deliveries will utilise the M180 and/or M18 to access the roads leading to the Scheme.
NLC	Concerns raised over access to Land Area B, although it notes that the number of additional daily vehicle movements will be low and will occur outside of peak hours. Comments provided on accesses located within NLC jurisdiction.	The construction access route to Land Parcel B (see **ES Figure 1.2 Land Parcel Plan [Document Reference 6.4.1.2]**) has been discussed with NLC highway officers, with the route now proposed at **Section 12.5 of ES Chapter 12 Transport and Access [Document Reference 6.2.12]** as recommended by the officer. This will be secured by requirement via the **Outline CTMP [Document Reference 7.7].** Movements through Crowle to Land Parcel B would be strictly managed and would be timed to avoid the peak hours on the highway network and the busiest times of the school day. This is set out in detail in the **Outline CTMP [Document Reference 7.7]**,

CONSULTEE	SUMMARY OF CONSULTEE RESPONSE	HOW RESPONSE HAS BEEN ADDRESSED BY APPLICANT
CDC	Notes that the proposed access points do not meet the design standards of the Design Manual for Roads and Bridges ("DMRB"). Notes that the access designs do not provide typical construction details. States that the access points can only be progressed by entering into a Section 278 agreement, although notes that this could be included within the DCO. States that it is important that the site is suitably constructed and fit for purpose, with concerns raised with regard to the use of matting close to the adopted highway.	The majority of access points utilise existing agricultural access points that are not to DMRB standard. Where new accesses are to be created, no accesses proposed are from a trunk road, which DMRB standards typically apply to. Swept path assessments, management and mitigation is set out in the **Outline CTMP [Document Reference 7.7]**. This confirms that the proposed site access points are shown to function effectively during the construction phase. Once operational, the access points will not be associated with any intensification over and above the current uses. Temporary matting will not be proposed, as set out in the **Outline CTMP [Document Reference 7.7]**. Construction details of the accesses will be provided as part of the CTMP post consent which will be secured as a Requirement. The Street Works, Access and Public Rights of Way Plan [Document Reference

CONSULTEE	SUMMARY OF CONSULTEE RESPONSE	HOW RESPONSE HAS BEEN ADDRESSED BY APPLICANT
		2.4] identifies where these access works may be undertaken, and the works would be authorised under the DCO rather than via a s278 agreement.
National Highways ("NH")	Acknowledges that M180 Junctions 1 and 2 and M18 Junctions 5 and 6 may be used by vehicles routing to the Scheme and NH will therefore need to understand the likely traffic impact of the proposals on the Strategic Road Network (SRN). It is expected that Personal Injury Collision (PIC) data is collected for the Strategic Road Network at tM18 Junctions 5 and 6 and M18 Junctions 1 and 2, covering the most recent five-year period. Require the timings of vehicle movements to ensure that construction vehicles operate outside of the SRN's peak hours.	The **Outline CTMP [Document Reference 7.7]** confirms that deliveries will not occur during the network peak hours. All traffic associated with Land Parcel A will utilise M18 junction 6, Land Parcel C and D will utilise the M18 junction 5, Land Parcels B and E will utilise M180 junction 2. The PIC records have been collected for the SRN and are summarised in **Section 12.4 of ES Chapter 12 Transport and Access [Document Reference 6.2.12]**, with further detail included within **Appendix 12.2 – Transport Statement [Document Reference 6.3.12.1]**. Restrictions on timings of vehicle movements to avoid the peak hours of operation of the SRN are set out in the **Outline CTMP [Document Reference 7.7]**.

12.3. Assessment Approach

Methodology

12.3.1. The transport and access assessment has considered the impacts of traffic generated by the Scheme on the local highway network in the vicinity of the Site during the construction, operation and decommissioning phases. It also considers the Order Limits in consideration of the local public right of way (PRoW) network It has been carried out in accordance with the Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement' document, (referred to as the 'IEMA traffic guidelines' throughout this chapter) **[Ref. 12-1]**.

12.3.2. The pertinent issues for the ES in terms of transportation are the magnitude and consequences of changes at highway links affected by construction traffic within the study area (comprising the construction traffic routes to the Scheme) as a result of the construction and operational phases of the development. With reference to the categories listed in the IEMA guidelines, the impacts assessed are as follows:

- Severance of communities;
- Road vehicle driver and passenger delay;
- Non-motorised user delay;
- Non-motorised user amenity;
- Fear and intimidation on and by road users; and
- Road user and pedestrian safety;
- Hazardous loads / large loads.

<u>Determining the Magnitude and Significance of Environmental Impacts</u>

12.3.3. There are four levels of impact magnitude considered which are negligible, low, medium, and high.

12.3.4. The IEMA traffic guidelines sets out two rules to be considered when assessing the impact of development traffic on a highway link as follows:

- Rule 1: include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and

- Rule 2: include any other specifically sensitive areas where traffic flows (or HGV component) are predicted to increase by more than 10%.

12.3.5. The 30% threshold is based upon research and experience and the IEMA traffic guidelines suggests that less than a 30% increase results in imperceptible changes in the environmental effects of traffic, apart from in sensitive locations.

12.3.6. Definitions of magnitude have been based on the IEMA traffic guidelines and are shown in **Table 12-4.**

Table 12-4: Criteria for magnitude of impact

Impact	Magnitude of Impact / Threshold			
	Negligible	Low	Medium	High
Road Safety	IEMA traffic guidelines suggests that accident and safety impacts can be assessed by reviewing collision data to identify any emerging patterns or factors that could be exacerbated by traffic or movement generation.			
Severance	Change in peak or 24 hr traffic within study area by less than 30%	Change in peak or 24 hr traffic within study area of 30%- 60%	Change in peak or 24 hr traffic within study area of 60% - 90%	Change in peak or 24 hr traffic within study area by 90% or more
Driver and Passenger Delay	Change in peak or 24 hr traffic within study area by less than 5%	Change in peak or 24 hr traffic within study area	Change in peak or 24 hr traffic within study area between 15% and 30%	Change in peak or 24 hr traffic within study area by 30% or more

Impact	Magnitude of Impact / Threshold			
	Negligible	Low	Medium	High
		between 5% and 15%		
Non-motorised user Delay	The guidance recommends that professional judgement is used to determine the impact on Pedestrian Delay, considering local factors such as pedestrian activity, visibility, and the physical conditions of the site.			
Non-motorised user Amenity	Pedestrian Amenity is impacted by traffic flow, composition and width of pavement and is related to fear and intimidation thresholds. As suggested by national guidance a threshold of where traffic or HGV flows have halved or doubled will be used to indicate whether there is a significant effect.			
Fear and Intimidation	The level of fear and intimidation is based on a degree of hazard score for both the with and without development scenarios. The step change difference between the scenarios results in the Magnitude of Impact as categorised below (see paragraph 12.3.7 for more details).			
	There is no change in steps between with and without development.	There is one step change in level with: <400 vehicle increase in average 18 hour two-way flow and /or <500 HGV increase in	There is one step change in level but with: >400 vehicle increase in average 18 hour two-way flow and /or >500 HGV increase in total 18	Two step changes in level

Impact	Magnitude of Impact / Threshold			
	Negligible	Low	Medium	High
		total 18 hour HGV flow.	hour HGV flow.	

12.3.7. The effects on fear and intimidation are based upon a degree of hazard score determined using:

- Average traffic flow over 18 hour day (all vehicles/hour 2-way).
- Total 18-hour heavy vehicle flow; and
- Average vehicle speed.

12.3.8. The degree of hazard thresholds from the IEMA traffic guidelines are set out below.

Table 12-5: Fear and intimidation: degree of hazard

Average traffic flow over 18 hour day (all vehicles/hour 2-way) (a)	Total 18-hour heavy vehicle flow (b)	Average vehicle speed (c)	Degree of hazard score
>1,800	>3,000	->40	30
1,200 – 1,800	2,000 – 3,000	30 – 40	20
600- 1,200	1,000 – 2,000	20 – 30	10
<600	<1,000	<20	0

12.3.9. The total degree of hazard score is calculated by summing the score for each element (a, b and c) from **Table 12-5**. This enables a level of fear and intimidation is determined, which is set out in **Table 12-6.**

Table 12-6: Level of Fear and intimidation

Level of fear and intimidation	Total hazard score (a) + (b) + (c) from Table 12.5
Extreme	71+
Great	41 – 70
Moderate	21 – 40
Small	0 - 20

12.3.10. A step change would be a change between a level of fear and intimidation (e.g., from Small to Moderate).

12.3.11. The impact magnitudes for each category listed in **Table 12-4** can have either a beneficial or adverse impact.

Receptor Sensitivity

12.3.12. The sensitivity of each the highway links has been determined using professional judgement and with reference to the IEMA traffic guidelines **[Ref 12-1]**.

12.3.13. User groups that may be affected by a change in conditions include non-motorised users, PRoW users, motorists and freight vehicles, public transport and the emergency services. Geographic locations are also considered including people at home, people at work, sensitive and vulnerable groups, locations with concentrations of vulnerable groups (such as schools and hospitals), retail areas, recreational areas, tourist attractions, collision clusters, and junction and highway links at or over capacity.

12.3.14. The sensitivity of receptors relating to transport and access are set out in **Table 12-7**.

Table 12-7: Criteria for sensitivity of receptor

Receptor Sensitivity	Receptor Type
High	Receptors of greatest sensitivity to traffic flows, such as schools, playgrounds, accident blackspots, retirement homes, areas with no footways with high pedestrian footfall.
Medium	Traffic flow sensitive receptors, such as congested junctions, hospitals, shopping areas with active frontages, narrow footways, parks, and recreational areas.
Low	Receptors with some sensitivity to traffic flow, such as conservation areas, listed buildings, tourist attractions, and residential areas.
Negligible	Receptors with low sensitivity to traffic flows, and those distant from affected roads, such as rural roads which serve a small number of dwellings which are typically set back from the road.

12.3.15. The identified sensitivity of each of the links is set out at **Appendix 12.2 Summary of Sensitive Receptors [Document Reference 6.3.12.2]**.

Assessment of Significance

12.3.16. The Significance of Effect is determined by combining the predicted magnitude of impact with the assigned sensitivity of the receptor. The Significance of Effect is set out in **Table 12-8**.

12.3.17. The Significance of Effect thresholds can be categorised as beneficial (positive, i.e., reduction in traffic flows), negligible (no real impact) or adverse (negative i.e., increase in traffic flows). For the purpose of this chapter, major and moderate significance of effects are considered 'significant' in EIA terms, and minor to moderate significance of effects are considered 'not significant' in EIA terms, as indicated by the shading in **Table 12-8**.

Table 12-8: Significance matrix

Magnitude of Change	Sensitivity of Receptor				
		High	**Medium**	**Low**	**Negligible**
	High	Major	Major	Moderate	Negligible
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

12.3.18. Significance thresholds can also be categorised as temporary or permanent and can have an effect for the short, medium, or long term. The relevant definitions in terms of the longevity of the effect are set out below:

- A short-term effect – an effect that will be experienced for 0-5 years.
- A medium-term effect – an effect that will be experienced for 5-15 years; and
- A long-term effect – an effect that will be experienced for 15 years onwards.

Legislative and Policy Framework

12.3.19. The assessment has been undertaken in accordance with the following legislation.

- The Highways Act 1980 **[Ref. 12-2].**

12.3.20. As set out in **ES Chapter 2 Policy and Legislative Context [Document Reference 6.1.5]**, the process for applying for a DCO is set out in the Planning Act 2008 **[Ref. 5-1]**. Under Section 104 of the Act, a decision must be made with regard to the relevant National Policy Statement (NPS), the local impact report, matters prescribed in relation to the Scheme and any other matters regarded as important and relevant. Following their designation on 17 January

2024, there are three NPSs which are considered to be 'relevant NPS' under Section 104 of the Act.

National planning policy

12.3.21. The proposals have also been considered in the context of the following national planning policy and guidance:

- Overarching National Policy Statement (NPS) for Energy (EN-1) 2024 - (Section 5.4 'Traffic and Transport') **[Ref. 12-3].**
- National Policy Statement for Renewable Energy Infrastructure (EN-3) 2024 - Section 2.10 'Solar Photovoltaic Generation') **[Ref. 12-4].**
- National Planning Policy Framework (2024) **[Ref. 12-5].**
- Planning Practice Guidance (2014) **[Ref. 12-6]**.

National Policy Statements (NPS's)

12.3.22. NPS EN-1 ('Overarching National Policy Statement for Energy') sets out guidance relating to traffic and transport at Section 5.14. Paragraph 5.14.5 states that an applicant's ES should include a transport appraisal. Paragraph 5.14.6 confirms that applicants should consult with National Highways and Highways Authorities as appropriate.

12.3.23. A transport appraisal of the Scheme has been provided in the form of a Transport Statement (**Appendix 12.1 - Transport Statement [Document Reference 6.3.12.1]).** This has been undertaken in consultation with CDC, NLC and National Highways.

12.3.24. NPS EN-3 ('National Policy Statement for Renewable Energy Infrastructure') sets out guidance relating to access and the potential impacts and mitigations for construction traffic relating to new solar farms at Chapter 2.10. Paragraph 2.10.36 notes that solar farm sites are usually situated in rural areas and therefore access for the delivery of solar arrays and associated infrastructure during construction can be a significant consideration. The guidance suggests at paragraph 2.10.39 that applicants should assess the full extent of the potential access routes and their suitability for deliveries, and the mitigation measures that may be implemented by the Highway Authority or the Secretary

of State. Paragraph 2.10.40 states that the impacts of PRoW routes should also be assessed.

12.3.25. It is noted that there has been a recent consultation on further updates to NPS EN-1 and EN-3. Whilst it is noted that a requirement for a transport appraisal is being removed and replaced with 'a vision for transport and an assessment of potential transport impacts' (draft NPS EN-1 paragraph 5.14.5), it is concluded that any changes would not have a bearing on the assessment of transport and access.

National Planning Policy Framework (NPPF)

12.3.26. In transport terms, the thrust of the National Planning Policy Framework (NPPF) is a presumption in favour of sustainable development (paragraph 10), that transport issues should be considered from the earliest stages of development proposals and to make the fullest use of public transport, walking, and cycling (paragraph 109) whilst noting that opportunities will vary between urban and rural areas (paragraph 110); to locate and design development to give priority to pedestrians and cycle movements, and have access to high quality public transport facilities (paragraph 117); ensuring safe and suitable access can be achieved for all (paragraph 115); and that development should only be refused on transport grounds where the residual cumulative impacts on the road network, following mitigation, would be severe (paragraph 116).

12.3.27. At paragraph 118 it states that '*All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a vision-led transport statement or transport assessment so that the likely impacts of the proposal can be assessed and monitored.*'. When issuing the current version of the NPPF, the Government indicated that updated guidance will be provided alongside the NPPF in due course. As this will be an accompanying document it is not anticipated that the NPPF will change or that it will have a material effect on the assessment work undertaken in this ES. The accompanying document is not yet available.

12.3.28. The transport and access chapter and supporting appendices has been prepared in accordance with these policies.

Local Planning Policy

12.3.29. The proposals have also been considered in the context of the following local planning policy and guidance:

- Doncaster Local Plan 2015 – 2035 (adopted September 2021) **[Ref 12.-7]**
  - Policy 12: Strategic transport network (strategic policy).
  - Policy 13: Promoting sustainable transport in new development (strategic policy).
  - Policy 18: Development affecting public rights of way.
- The North Lincolnshire Local Development Framework, including Core Strategy (adopted June 2011) **[Ref. 12-8]**
  - Policy CS25: Promoting sustainable transport.
- North Lincolnshire Local Transport Plan **[Ref. 12-9]**
  - Local Transport Goal 2 - Improve transport safety and security relating to death or injury from transport, in order to contribute towards safer and stronger communities.

12.3.30. The transport and access chapter and supporting appendices has been prepared in accordance with these policies.

Guidance

12.3.31. The proposals have been considered in the context of the following guidance documents:

- The Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement (2023) **[Ref. 12-1]**
- National Highways - The Strategic Road Network and the Delivery of Sustainable Development (December 2022) **[Ref. 12-10].**
- Planning Practice Guidance - Travel Plans, Transport Assessments and Statements **[Ref. 12-11]**

- Manual for Streets (Department for Transport, 2007) **[Ref. 12-12].**
- Design Manual for Roads and Bridges, Standards for Highways **[Ref. 12-13].**

Scoping Criteria

12.3.32. This Transport and Access Chapter deals specifically with the transport and access issues pertinent to an EIA. This includes assessing the magnitude and consequences of changes in traffic flows on the local road network, including operational and safety impacts as a result of the Scheme, using the criteria set out in **Table 12-4** above.

12.3.33. Further to Scoping and Consultation (**Section 12.2 of this ES Chapter 12 Transport and Access [Document Reference 6.2.12]**) all categories within the IEMA traffic guidelines **[Ref. 12-1]** are assessed within this chapter. No categories have been scoped out.

Extent of Study Area

12.3.34. The study area for transport and access was confirmed through the EIA Scoping process and comprises the roads which were anticipated to form the routes for construction traffic to the Scheme. All assessed links connect to the SRN at either the M180 or M18 motorways.

12.3.35. The links assessed are as follows:

- Link One - Marshland Road, north of the junction with The Avenue.
- Link Two - North Common Road, east of the junction with Mount Pleasant Road.
- Link Three - A614 Selby Road, south of the junction with North Common Road.
- Link Four - Marshland Road, north of the junction with Broadbent Gate Road.
- Link Five - Coulman Street, north of the Church Balk/Coulman Street/Moor Edges Road/Wike Gate Road Junction.
- Link Six - Moor Edges Road, east of the Church Balk/Coulman Street/Moor Edges Road/Wike Gate Road Junction.
- Link Seven - High Bridge Road, southeast of the junction with Moor Road.

- Link Eight - Green Bank Road, south of Clay Bank Road.
- Link Nine - A614, Tudworth Road, north of the Tudworth Roundabout.
- Link Ten - A18, High Levels Bank, east of the Tudworth Roundabout.
- Link Eleven - A18 Tudworth Road, south of the Tudworth Roundabout.
- Link Twelve - A18 High Levels Bank, east of the Black Bull Inn.
- Link Thirteen - A18 Tudworth Road, northeast of the junction with Sandtoft Road.
- Link Fourteen - Sandtoft Road, east of the junction with A18 Tudworth Road.
- Link Fifteen - Low Levels Bank, west of the junction with Moor Lane/Crow Tree Bank.
- Link Sixteen - A161 Eastoft Road, in between the Eastoft Road bus stop and the junction with Carr Lane.
- Link Seventeen - Wharf Road, near the Park View bus stops.
- Link Eighteen - A18 near Triangles Farm, southwest of Ealand; and
- Link 19 - Marsh Road, west of the junction between Windsor Road/Cross Street.

12.3.36. The SRN was not assessed on the basis that the number of vehicle movements associated with the temporary construction period are considered to be comparable to typical daily variation on the SRN.

12.3.37. The delivery of Abnormal Indivisible Loads will be infrequent with no material impact forecast to the SRN or local highway network. The timing and routes of abnormal loads will be discussed and agreed with National Highways, CDC and NLC in due course. This is set out in the **Outline CTMP [Document Reference 7.7]**.

Layout Optionality

12.3.38. Two Options in the design layout are considered for a fixed and tracker design and fixed design with further details set out in **ES Chapter 2 – Scheme**

Description [Document Reference 6.1.2]. In transport and access terms, the two options for the design will not provide any difference in the assessment of impacts, significance of effect conclusion and/or mitigation measures as set out in this chapter. This is because the number and type of deliveries to the Scheme will not materially change as a result of the two options. Therefore the 'Assessment of Likely Effects' and 'Residual Effects' within this chapter assesses both design options as there is no material difference in the impacts to transport and access.

Limitations to the Assessment

12.3.39. The Applicant has confirmed that they are likely to construct only two Land Parcels at any one time. The peak construction period in transport and access terms would comprise the construction of Land Parcel C and Land Parcel E simultaneously, as these Land Parcels share sections of the proposed construction traffic route. However, for the purpose of this assessment it has been assumed that the entire Scheme could come forward at the same time as a robust case. This ensures that all potentially impacted highway links are considered and provides a robust assessment of the construction of the Scheme on the highway network.

12.3.40. The assessments are based upon a base year of 2023. This does not allow for any background traffic growth on the highway network between the time of the base surveys and the start of construction and therefore is a robust assessment of the likely traffic impacts.

12.3.41. As set out above, all assessed links connect to the SRN at either the M180 or M18 motorways. Whilst the port of entry for materials and equipment has not yet been confirmed, it has been assumed at this stage that this could be from Immingham port in the east (via the M18) or Goole port in the north (via the M180). No other limitations or difficulties have been identified.

12.4. Baseline Conditions

Order Limits Description and Context

12.4.1. The Scheme is centred at approximately ten kilometres to the northeast of Doncaster and 14 kilometres to the west of Scunthorpe. The Schemeis split across the administrative boundaries of City of Doncaster Council (CDC) and

North Lincolnshire Council (NLC). The location of the Order Limits (within which the Scheme will be delivered) in its wider geographical context is shown in **ES Figure 1.1 Order Limits [Document Reference 6.4.1.1].**

12.4.2. The Order Limits comprises five separate Land Parcels (A-E) as illustrated at **ES Figure 1.2 Land Parcel Plan [Document Reference 6.4.1.2]**, with a breakdown of the Land Parcels into Panel Areas within the Order Limits shown on **ES Figure 1.3 Development Parcel Plan [Document Reference 6.4.1.3].** The Order Limits extend to approximately 1,831 hectares.

12.4.3. Full general details of the Order Limits context is found at **ES Chapter 3 - Site Description, Site Selection and Iterative Design Process [Document Reference 6.1.3].**

Strategic Road Network

12.4.4. It is anticipated that all materials associated with the construction of the Scheme will use the Strategic Road Network (SRN) to access the local highway network, from which the Land Parcels are served. The SRN is managed by National Highways. A summary of the sections of the SRN which are closest to the site is provided below.

M18

12.4.5. The M18 motorway routes between M1 Junction 32 in the northeast to M62 Junction 35 in the southwest. It is located to the west of Thorne, approximately 1.5 kilometres as the crow flies from the closest point of Land Parcel A. M18 Junction 6, the 'Waterside Roundabout', located to the northwest of Thorne, and Junction 5 (which connects to the M180), located to the southwest of Thorne, are the two closest SRN junctions to the Scheme.

M180

12.4.6. The M180 routes west to east between M18 Junction 5 and The Barnetby Interchange to the north of Barnetby Le Wold, approximately 14 kilometres west of Immingham, where it becomes the A180. The M180 Junction 1 (which connects to the A18 and the 'Tudworth Roundabout') and Junction 2 (which connects with the A161 with on/off slips) are located within the vicinity of the Scheme.

Local Highway Network

12.4.7. A network of local roads connects the different Land Parcels as well as providing links to the wider local and strategic road networks. The road network is shown on Figure 2.1 within **Appendix 12.3 – Baseline Traffic Survey Report [Document Reference 6.3.12.3].**

12.4.8. The roads summarised below form the traffic routes that will be used to deliver materials and personnel to the Scheme during its construction.

A18 (Links ten, eleven, twelve, thirteen, and eighteen)

12.4.9. The A18 is a single carriageway road which is approximately seven metres wide. It is subject to the National Speed Limit (60mph) and facilitates travel between the towns of Hatfield to the west and Scunthorpe to the east. It provides direct access to farmland along its extent. The section of the A18 within the vicinity of the Scheme is generally unlit. Streetlighting and footways are generally provided within the vicinity of local settlements.

A161 (Link sixteen and seventeen)

12.4.10. The A161 is a single carriageway road which is approximately seven metres wide. It connects to the A18 via a gyratory junction to the south of Ealand, and can be used to join the M180 via Junction 2 in the south. The A161 passes through Crowle to the east of the Scheme. It is subject to varying speed limits along its length, with the National Speed Limit south of the A18 and 40mph and 30mph sections through Crowle.

Sandtoft Road (Link fourteen)

12.4.11. Sandtoft Road is a single carriageway road measuring around five to six metres in width. It is subject to the National Speed Limit and subject to a 7.5 tonne weight restriction, except for access. To the east it becomes Low Levels Bank Road and to the west it connects to the A18 via a priority junction. It provides direct access to farmland along its extent. There are no footways or street lighting provided.

Low Levels Bank (Link fifteen)

12.4.12. Low Levels Bank consists of a single carriageway measuring approximately five metres in width. It is subject to the National Speed Limit. To the east, it becomes Thorne Road and to the west it becomes Sandtoft Road. It provides direct access to farmland along its extent. There are no footways or street lighting provided.

Coulman Street (Link five)

12.4.13. Coulman Street is a single carriageway road that measures approximately seven to eight metres in width and is subject to a 30mph speed limit. It connects with King Edward/Marshland Road via a priority junction to the north and connects to Church Balk/Moor Edges Road and Wike Gate Road via a crossroad junction to the south.

12.4.14. A footway on the eastern side of the carriageway extends approximately 230 metres south of the King Edward/Marshland Road junction and a continuous footway routes along the western side of the carriageway. Street lighting is provided along its extent. It provides direct access to residential properties and industrial land uses along its extent.

Marshland Road (Links ones and four)

12.4.15. Marshland Road is a single carriageway urban street that measures approximately 6.5 to seven metres wide. It is subject to a 30mph speed limit. Footways are provided on both sides of the road, and it is lit. It provides direct access to residential properties, retail, leisure and industrial land uses along its extent.

12.4.16. Approximately 1.7 kilometres to the north of its junction with Coulman Street it crosses the Hull and Doncaster Branch Line railway via a level crossing where it becomes Moorends Road.

North Common Road (Link two)

12.4.17. North common Road is a single carriageway road that measures approximately six metres wide. It reduces to a single lane over a ditch around 450 metres southwest of its junction with Marshland Road, although visibility along the

road is good. It connects to Marshland Road in the east and Selby Road in the west, both via priority junctions.

Moor Edges Road (Link six)

12.4.18. Moor Edges Road is a single carriageway that measures approximately four metres wide and is subject to the National Speed Limit. To the west it becomes Church Balk, leading in to Thorne, and to the south it becomes High Bridge Road. It provides direct access to farmland and industrial land uses along its extent. There are no footways or street lighting provided.

High Bridge Road (Link seven)

12.4.19. High Bridge Road is a single carriageway road measuring approximately three to four metres in width. It is subject to the National Speed Limit. To the east it becomes Green Bank. To the west it becomes Moor Edges Road. High Bridge Road provides direct access to farmland and industrial land uses along its extent. There are no footways or street lighting provided. Approximately 480 metres to the south of Moor Edges Road, High Bridge Road crosses the South Humberside Main Line railway via a level crossing.

Green Bank (Link eight)

12.4.20. Green Bank is a single carriageway road measuring approximately four metres in width. It is subject to the National Speed Limit. To the north it narrows to three metres as it crosses over the Stainforth and Keadby Canal before connecting to High Bridge Road. To the south it connects onto the A18 via a priority junction. Where the road crosses the canal there is a 7.5 tonne weight restriction. It provides direct access to farmland along its extent.

Marsh Road (Link nineteen)

12.4.21. Marsh Road is an unmarked single carriageway that measures approximately four metres wide and currently serves a small number of dwellings and agricultural buildings. No footways are provided, and street lighting is provided at its north eastern extent only, within the vicinity of dwellings within Crowle.

12.4.22. To the southwest it becomes Crook O'Moor Road and to the northeast it forms the minor arm of a priority junction with Cross Street and Windsor Road.

12.4.23. Marsh Road is subject to the national speed limit which reduces to a 30mph speed limit approximately 90 metres southwest of the junction with Cross Street and Windsor Road. There are double yellow lines on both sides of the carriageway at this junction.

Crow Tree Bank

12.4.24. Crow Tree Bank is a single carriageway road measuring approximately six to seven metres wide. It is subject to the National Speed Limit. It connects onto High Levels Bank to the north and High Bridge Road to the south, both via priority junctions. It provides direct access to farmland and industrial land uses along its extent. A short section of footway extends south for approximately 60 metres from the High Levels Bank junction. There is no street lighting provided.

Clay Bank Road

12.4.25. Clay Bank Road is an single carriageway road measuring approximately three to four metres wide. It is subject to the National Speed Limit. It connects to Green Bank to the east and to South End/Double Bridges Road to the west via priority junctions. It provides direct access to farmland along its extent. There are no footways or street lighting provided.

Godnow Road

12.4.26. Godnow Road is a single carriageway residential road in the south of the built environment of Crowle that measures approximately 6.5 metres wide, serve directly from the A161. It has an approximate 20 metre wide bellmouth at its connection to the A161, with an approximate 15 metre taper on the southern side. It has a 30mph speed limit, with footways measuring between one and 1.5 metres provided on both sides of the carriageway street lighting also provided.

Windsor Road

12.4.27. Windsor Road is a single carriageway residential road in the west of the built environment of Crowle that measures approximately five metres wide, accessed from Godnow Road in the south and providing a connection to Marsh Road/Cross Street in the north. Footways measuring approximately one metre wide are provided on both sides of the carriageway, with street lighting also provided.

12.4.28. Approximately 100 metres south of the junction between Marsh Road/Cross Street/Windsor Road is Crowle Primary School. Warning signage indicating the school is nearby and that a reduction of the speed limit to 20mph 'when lights show' is present approximately five metres south of the junction between Marsh Road, Cross Street and Windsor Road.

Informal Lanes/Farm Tracks

12.4.29. Due to the more rural nature of the Order Limits, some of the Panel Areas are accessed by smaller informal lanes and farm tracks including:

- Thorne Waste Drain Road.
- Moor Owners Road; and
- Crook O'Moor Road

12.4.30. These roads consist of rural lanes within the Order Limits with no kerbs, footways or street lighting. They generally measure around four metres in width.

Existing Site Accesses

12.4.31. The Scheme currently comprises agricultural land uses. Access to the Order Limits is currently provided via agricultural access points in multiple locations, as shown on **Figure 12.1 – Indicative Access Strategy [Document Reference 6.4.12.1].**

Public Rights of Way

12.4.32. A number of Public Rights of Way (PRoW) route through or abut the Order Limits. These are shown on **ES Figure 12.1 - Indicative Access Strategy [Document Reference 6.4.12.1]** and are summarised in **Table 12-9**.

Table 12-9: PRoW within or abutting the Order Limits

PRoW Name	Type of PRoW	Responsible Authority
Thorne 15	Footpath	CDC

PRoW Name	Type of PRoW	Responsible Authority
Thorne 19	Footpath	CDC
CROW 18	Bridleway	NLC
CROW 21	Byway Open to All Traffic	NLC
BELT 21	Footpath	NLC

12.4.33. The Stainforth and Keady Canal path, referred to simply as the 'Canal Path' for the remainder of this **ES Chapter 12 Transport and Access [Document Reference 6.1.12]**, also routes within the vicinity of the Order Limits, to the south of Land Parcel A. This has also been considered.

12.4.34. The Thorne 15, Thorne 19, CROW 21 PRoW routes and the Canal Path, on the basis that these are anticipated to have the most footfall within the vicinity of the site and as agreed with NLC PRoW officers, were subject to 24 hour user surveys undertaken by an independent surveyor on Thursday 16 and Saturday 18 May 2024. Further to correspondence with NLC PRoW officers in February 2024, it was agreed with NLC that undertaking the surveys in Spring/Summer would yield results which reflect peak usage. The days when the surveys were carried out were dry and bright. The results of the surveys are summarised in **Table 12-10**, with the survey data included at **Appendix 12.3 – Baseline Traffic Survey Report [Document Reference 6.3.12.3].**

Table 12-10: PRoW usage (two-way)

User	Thursday 16 May 2024		Saturday 18 May 2024	
	Hourly Max	Daily Total	Hourly Max	Daily Total
	Thorne 15			
Pedestrian	3	8	3	12
Cycle	1	2	1	1
Equestrian	0	0	0	0
	Thorne 19			
Pedestrian	4	10	3	12
Cycle	0	0	1	1

User	Thursday 16 May 2024		Saturday 18 May 2024	
	Hourly Max	Daily Total	Hourly Max	Daily Total
Equestrian	0	0	0	0
	CROW 21			
Pedestrian	5	13	10	28
Cycle	2	4	2	4
Equestrian	0	0	1	1
	Stainforth and Keady Canal Path			
Pedestrian	2	4	0	0
Cycle	0	0	0	0
Equestrian	0	0	0	0

12.4.35. As shown in **Table 12-10**, the Thorne 15 and Thorne 19 PRoWs had a total of 12 pedestrian and one cycle movements on their busiest day (Saturday), PRoW CROW 21 had a total of 28 pedestrian, four cycle and one equestrian movements on its busiest day (Saturday), and the Canal Path had a total of four pedestrian movements on its busiest day (Thursday). These are not considered to be material numbers of movements across a typical day with a maximum of 10 two-way movements (i.e., five outbound and five return trips) in any one hour (one movement every six minutes on average).

Personal Injury Collisions

12.4.36. Personal Injury Collision (PIC) data has been obtained from CDC and NLC for the most recent five-year period (January 2020 – January 2025 for CDC and May 2020 – May 2025 for NLC).

12.4.37. The study area comprises the proposed construction traffic routes identified at **ES Figure 12.1 - Indicative Access Strategy [Document Reference 6.4.12.1]**. As requested by National Highways during statutory consultation, the junctions on the SRN have also been included.

12.4.38. The study area comprises the construction traffic routes within both CDC and NLC jurisdiction. Junctions on the SRN have also been included at the request of National Highways. In summary, the data confirms that there has been a total of five fatal incidents, 78 slight incidents and 25 serious incidents within the study area. The full PIC reports including a breakdown of where the recorded incidents occurred is set out within **Appendix 12.1 -Transport Statement [Document Reference 6.3.12.1]**.

12.4.39. The data averages to just over 20 incidents per year, or just under two incidents per month. The majority of the incidents appear to have occurred due to driver error, and although five fatal incidents were recorded, the incidents do not form a pattern that would suggest an issue with the layout or design of the local highway network. Given the extent of the study area, the five year study period and the types of roads which comprise the local highway network, it is considered that there are no existing highway safety issues with the local highway network.

Baseline Survey Information

12.4.40. The sources of baseline information are included at **Table 12-11.**

Table 12-11: Baseline information

Baseline Topic	Data Source	Date
Automatic Traffic Count Surveys of the local highway network study area (see Appendix 12.3 - **Baseline Traffic Survey Report [Document Reference 6.3.12.3])**	Paul Castle Associates	June 2023
DfT Traffic Counts, for the local highway network study area, as required (see Appendix 12.3 - **Baseline Traffic Survey Report [Document Reference 6.3.12.3])**	Department for Transport Road Traffic Statistics	June 2021
Non-Motorised User (PRoW) Surveys (see Appendix 12.3 - **Baseline Traffic Survey**	Nationwide Data Collection	May 2024

Baseline Topic	Data Source	Date
Report [Document Reference 6.3.12.3])		
Highway Search	CDC	November 2022
	NLC	October 2022
Personal Injury Collision Data	South Yorkshire Mayoral Combined Authority (Doncaster extents)	June 2025
	NLC	May 2025
Base Mapping	Ordnance Survey	Various
	Landmark Surveys (Topographic Survey)	May 2023

Baseline Traffic Flows

12.4.41. Automatic Traffic Count (ATC) surveys have been carried out across the local highway network, further to agreement with CDC and NLC, between Tuesday 6th and Monday 12th of June 2023. The traffic and speed surveys are summarised at **Appendix 12.3 Baseline Traffic Survey Report [Document Reference 6.3.12.3]**.

12.4.42. **Table 12-12** sets out the recorded baseline annual average daily traffic (AADT) two-way flows for the ES transport study area. AADT represents the average number of vehicles that pass a specific point on a road or highway in a 24-hour period over a full year and is calculated by dividing the total volume of traffic over a year by 365 days.

Table 12-12: 2023 Baseline AADT flows, derived from Automatic Traffic Counts and DfT traffic counts

Highway Link	2023 Baseline Two-Way AADT	Baseline Number of Heavy Goods Vehicles (HGV) with Percentage of AADT
Link One Marshland Road, N of The Avenue	4,506	521 (11.6%)
Link Two North Common Road, E of Mount Pleasant Road	3,244	627 (19.3%)
Link Three A614 Selby Road, S of the North Common Road	6,457	1,361 (21.1%)
Link Four Marshland Road, N of Broadbent Gate Road	8,706	923 (10.6%)
Link Five Coulman Street, N of Church Balk/Coulman Street/Moor Edges Road/Wike Gate Road Junction	4,180	464 (11.1%)
Link Six Moor Edges Road, E of the Church Balk/Coulman Street/Moor Edges Road/Wike Gate Road Junction	840	180 (21.4%)
Link Seven High Bridge Road, SE of Moor Road	161	24 (14.9%)
Link Eight Green Bank, S of Clay Bank Road	110	13 (11.8%)
Link Nine A614, Tudworth Road, N of the Tudworth Roundabout	5,108	640 (12.5%)
Link Ten	7,883	1,446 (18.3%)

Highway Link	2023 Baseline Two-Way AADT	Baseline Number of Heavy Goods Vehicles (HGV) with Percentage of AADT
A18, High Levels Bank, E of the Tudworth Roundabout		
Link Eleven A18 Tudworth Road, S of the Tudworth Roundabout	7,950	1,544 (19.4%)
Link Twelve A18 High Levels Bank, E of the Black Bull Inn	7,582	1,661 (21.9%)
Link Thirteen A18 Tudworth Road, NE of Sandtoft Road	8,289	1,714 (20.7%)
Link Fourteen Sandtoft Road, E of A18 Tudworth Road	2,318	355 (15.3%)
Link Fifteen Low Levels Bank, W of Moor Lane/Crow Tree Bank	2,224	388 (17.4%)
Link Sixteen A161 Eastoft Road, in between the Eastoft Road bus stop and the junction with Carr Lane	2,434	361 (14.8%)
Link Seventeen Wharf Road, near the Park View bus stops	8,279	1,060 (12.8%)
Link Eighteen A18 near Triangles Farm, southwest of Ealand	5,317	991 (18.6%)
Link Nineteen Marsh Road W of junction with Windsor Road / Cross St	113	18 (15.9%)

NOTE: HGVs included within total traffic flow. Link flows are two-way.

12.5. Assessment of Likely Effects

Summary of Scheme

12.5.1. HGVs will route directly to the parcels where possible. Construction compounds will be located across the Order Limits. Land Area D and Land Area E will each have a larger construction compound where the largest heavy goods vehicles (HGVs) will offload and decant materials onto smaller vehicles (i.e. tractor and trailer) to access other parcels of their respective Land Area.

12.5.2. Due to the large-scale nature of the Scheme, there are multiple access points proposed, as set out in detail in the **Outline CTMP [Document Reference 7.7]** and summarised in **Table 12-13**.

Table 12-13: Proposed points of access to the scheme during the construction phase

Access Location Ref	Accessed from	Details	Access into Panel Area
A	Moor Edges Road	Existing industrial access	A6
B	Moor Edges Road	New access	A10
C	High Bridge Road	Existing agricultural access	Bird Mitigation Area (M3(A))
D	Green Bank	Existing agricultural access	C1
E	Green Bank	Existing agricultural access	C4
F	A18 High Levels Bank	New access	D3/D5
H	Low Levels Bank	Existing agricultural access	D7
i	Low Levels Bank	Existing agricultural access	D15
J	Low Levels Bank	Existing agricultural access	D14
K	Low Levels Bank	Existing agricultural access	D16
M	A18 High Levels Bank	Existing agricultural access	D4

Access Location Ref	Accessed from	Details	Access into Panel Area
O	A18 High Levels Bank	Existing agricultural access	E1
P	High Levels Bank	Existing agricultural access	E1
Q	Unnamed Road	Existing agricultural access	E7
R	Unnamed Road	Existing agricultural access	E13
S	Marsh Road	Existing agricultural access	B5
W	Low Levels Bank	Existing agricultural access	D12
Y	Jaque's Bank	Existing agricultural access	C9
Z	Crow Tree Bank	Existing agricultural access	D9
AA	Crook O'Moor Road	Existing agricultural access	B6 & B7
AB	Crook O'Moor Road	New access	B6 & B7
AC	Marsh Road	Internal crossing	B5 & B8
AD	Internal Crossing	Internal crossing	B5 & B2
AE	Internal Crossing	Internal Crossing	D7 & D10
AH	A18	New access	E2
AI	A18	New access	C9
AJ	Green Bank	Existing agricultural access	-
AK	A161	Existing agricultural access	Bird Mitigation Area (M15(E))

12.5.3. The designated routes for construction traffic accessing the Scheme to each of the Land Parcels are summarised below.

Land Parcel A

12.5.4. Access A and B serves Land Parcel A. The arrival route vehicles will take is as follows:

i. Exit the M18 motorway at Junction 6 turning north onto Selby Road.

ii. Turn right onto North Common Road following it along before turning right onto Marshland Road.

iii. Follow Marshland Road south and then turn left onto Coulman Street; and

iv. Follow Coulman Street south before turning left onto Moor Edges Road and then onto the Private Road leading into Causeway Farm and into the Scheme.

Land Parcel B

12.5.5. Access S serves Land Parcel B. The arrival route vehicles will take is as follows:

i. Exit the M180 at Junction 2 onto the A161 and follow it northwards towards Crowle.

ii. Turn left onto Godnow Road, following the road southwest.

iii. Turn right onto Windsor Road and continue north to the junction with Marsh Road and Cross street; and

iv. Turn left onto Marsh Road, continuing west until turning right into the access point.

Land Parcel C

12.5.6. Access to the panel areas which comprise Land Parcel C are served directly from, or from minor roads served from, the A18. The arrival route vehicles will take to reach these access points is as follows:

i. Construction traffic will exit the M180 at Junction 1 onto the Tudworth Roundabout turning east onto the A18 ; and

ii. Continue east along the A18 before either accesses the land parcel required directly from the A18, or one of the minor roads (Green Bank or Jaque's Bank) from the A18.

Land Parcel D

12.5.7. Land Parcel D is bisected by the M180. The arrival route vehicles routing to parcels to the north of the M180 will take to reach their destination is as follows:

i. Construction traffic will exit the M180 at Junction 1 onto the Tudworth Roundabout turning east onto the A18

ii. Continue east along the A18 before either accessing the land parcel required directly from the A18, or Crow Tree Bank (Access Z).

12.5.8. The arrival route vehicles routing to panel areas to the south of the M180 will take to reach their destination are as follows:

i. Vehicles will exit the M180 at Junction 1 onto the Tudworth roundabout turning south onto the A18.

ii. Upon reaching the Sandtoft Road junction turn left following it along as it becomes Low Levels Bank; and

iii. Continue following Low Levels Bank east into the access points either side of the Low Levels Bank carriageway.

Land Parcel E

12.5.9. Accesses P, R and Q serve Land Parcel E. The arrival route vehicles will take is as follows:

i. Exit the M180 at Junction 2 onto the A161 following it north: then:

ii. For Access P, turn left onto the unnamed road that runs parallel to the A18 following it west before routing west on High Levels Bank, from which Access P is served;

iii. For Access Q, turn left onto the unnamed road that runs parallel to the A18 following it west before routing south on High Levels Bank, from which Access Q is served;

iv. For Access R, turn left onto the unnamed road that runs parallel to the A18 following it west, form which Access R is served; and

v. For Access AK, continue north along the A161 for circa one kilometre, with Access AK on the western side of the road.

Construction

Construction Traffic

12.5.10. The Applicant has confirmed the following construction periods for each of the Land Parcels which comprise Panel Areas for assessment purposes:

- Land Parcel A – 12 months (with peak construction over a four month period).
- Land Parcel B – 9 months (with peak construction over a two month period).
- Land Parcel C – 12 months (with peak construction over a three month period).
- Land Parcel D – 9 months (with peak construction over a three month period).
- Land Parcel E – 12 months (with peak construction over a three month period).

12.5.11. The Applicant has confirmed that they are likely to construct only two Land Parcels at any one time. The peak construction period in transport and access terms would comprise the construction of Land Parcel C and Land Parcel E simultaneously, as these Land Areas share sections of the proposed construction traffic route, as shown at Figure 4.1 of the **Outline CTMP [Document Reference 7.7]** . However, for the purpose of this assessment it has been assumed that the entire Scheme could come forward at the same time. This ensures that all potentially impacted links are considered and provides a robust assessment of the impact of the construction of the Scheme on the highway network.

12.5.12. HGV deliveries will be made to construction compounds located across the Land Parcels. As set out above, new vehicular accesses will be created where required, or existing accesses will be widened as appropriate.

12.5.13. The construction compounds will accommodate deliveries by HGVs where they will decant equipment and materials. Some Panel Areas will require the materials to be transported from compounds within other Panel Areas via

smaller vehicles (i.e. tractor and trailer) using the highway network. Where this is required, it has been assumed that a total of three tractor and trailers are required for every HGV delivery.

12.5.14. The construction of the Scheme will require Abnormal Indivisible Loads (AIL) for the transformer and substation deliveries. The deliveries will be planned with an AIL route assessment and will be escorted and managed along the route from the port of entry into the UK and the Site. Any impacts will be minimised, and the arrangements will be secured through an AIL assessment in due course in conjunction with CDC, NLC and the Police. Given the high level of management of these loads, no significant impacts are anticipated.

12.5.15. There will also be a small number of construction movements associated with smaller vehicles such as the collection of skips for waste management, the transport of construction workers and sub-contractors to and from the Scheme and between construction locations.

Staff Trips

12.5.16. The Applicant has confirmed that up to 377 construction workers would be on Land Parcel C and E at any one time during the peak construction period. This is based on an assumption of 4.94 workers per acre. However, the assessment has been based on the construction of the Scheme occurring simultaneously and therefore a higher number of staff trips has been assessed with up to 880 staff across the entire Scheme.

12.5.17. The Applicant has advised that 75% of the construction workers will travel to the Scheme via 15 seater minibus, whilst the other 25% will arrive via private vehicle with an average of three workers per car, which is they consider to be a realistic assumption. This equates to 17 minibuses and 41 private cars per day (up to 116 two-way vehicle movements per day at peak times of construction).

12.5.18. Staff will travel from Doncaster, North Lincolnshire and East Riding of Yorkshire areas. Further details on the location of where staff will travel from is set out in **ES Chapter 11 Socio Economic [Document Reference 6.2.11].**

Total Traffic Flows

12.5.19. Construction compounds will be provided across the Land Parcels. The number of deliveries will therefore be split between each Land Parcel and their

respective compounds. The Applicant has provided the assumptions of 10 HGV movements and 8.84 Light Duty Vehicle (LDV) movements per hectare of each Panel Area during the peak construction period. This has been used to forecast the AADT vehicle movements associated with each Land Parcel, based upon the construction periods set out in **paragraph 12.5.10**:

- Land Parcel A – 90 two-way AADT movements per day (including 42 HGV AADT movements).
- Land Parcel B – 11 two-way AADT movements per day (including six HGV AADT movements).
- Land Parcel C - 42 two-way AADT movements per day (including 20 HGV AADT movements).
- Land Parcel D - 38 two-way AADT movements per day (including 18 HGV AADT movements).
- Land Parcel E - 54 two-way AADT movements per day (including 26 HGV AADT movements).

12.5.20. The impact on each of the links is set out in **Table 12-14**.

Table 12-14: 2023 with Development Total Traffic Flows

Link	2023 Baseline Two-Way AADT	With Dev Total Traffic Flow	Additional Two-way traffic Dev Total Traffic Flow (%age impact shown in square brackets)		Traffic Flow Magnitude of Impact	
			Total Veh	HGVs	Total Veh	HGVs
Link One Marshland Road, N of The Avenue	4,506 (521 HGVs)	4,595 (563 HGVs)	89 [1.9%]	42 [8.1%]	Negligible	Low
Link Two North Common	3,244	3,333	89 [2.7%]	4.2 [6.7%]	Negligible	Low

Link	2023 Baseline Two-Way AADT	With Dev Total Traffic Flow	Additional Two-way traffic Dev Total Traffic Flow (%age impact shown in square brackets)		Traffic Flow Magnitude of Impact	
			Total Veh	HGVs	Total Veh	HGVs
Road, E of Mount Pleasant Road	(627 HGVs)	(669 HGVs)				
Link Three A614 Selby Road, S of the North Common Road	6,457 (1,361 HGVs)	6,546 (1,403 HGVs)	89 [1.4%]	42 [3.1%]	Negligible	Negligible
Link Four Marshland Road, N of Broadbent Gate Road	8,706 (923 HGVs)	8,795 (965 HGVs)	89 [1.0%]	42 [4.6%]	Negligible	Negligible
Link Five Coulman Street, N of Church Balk/Coulman Street/Moor Edges Road/Wike Gate Road Junction	4,180 (464 HGVs)	4,269 (506 HGVs)	89 [2.1%]	42 [9.1%]	Negligible	Low
Link Six Moor Edges Road, E of the Church Balk/Coulman Street/Moor Edges	840 (180 HGVs)	929 (222 HGVs)	89 [9.6%]	42 [23.3%]	Low	Medium

Link	2023 Baseline Two-Way AADT	With Dev Total Traffic Flow	Additional Two-way traffic Dev Total Traffic Flow (%age impact shown in square brackets)		Traffic Flow Magnitude of Impact	
			Total Veh	HGVs	Total Veh	HGVs
Road/Wike Gate Road Junction						
Link Seven High Bridge Road, SE of Moor Road	161 (24 HGVs)	161 (24 HGVs)	0 [0%]	0 [0%]	Negligible	Negligible
Link Eight Green Bank, S of Clay Bank Road	110 (13 HGVs)	110 (13 HGVs)	0 [0%]	0 [0%]	Negligible	Negligible
Link Nine A614, Tudworth Road, N of the Tudworth Roundabout	5,108 (640 HGVs)	5,108 (640 HGVs)	0 [0%]	0 [0%]	Negligible	Negligible
Link Ten A18, High Levels Bank, E of the Tudworth Roundabout	7,883 (1,446 HGVs)	7,925 (1,466 HGVs)	42 [<1%]	20 [1.4%]	Negligible	Negligible
Link Eleven A18 Tudworth Road, S of the Tudworth Roundabout	7,950 (1,544 HGVs)	7,983 (1,560 HGVs)	33 [<1%]	16 [1.0%]	Negligible	Negligible
Link Twelve	7,582	7,619	37 [<1%]	30 [1.8%]	Negligible	Negligible

Link	2023 Baseline Two-Way AADT	With Dev Total Traffic Flow	Additional Two-way traffic Dev Total Traffic Flow (%age impact shown in square brackets)		Traffic Flow Magnitude of Impact	
			Total Veh	HGVs	Total Veh	HGVs
A18 High Levels Bank, E of the Black Bull Inn	(1,661 HGVs)	(1691 HGVs)				
Link Thirteen A18 Tudworth Road, NE of Sandtoft Road	8,289 (1714 HGVs)	8,313 (1,726 HGVs)	24 [<1%]	12 [<1%]	Negligible	Negligible
Link Fourteen Sandtoft Road, E of A18 Tudworth Road	2,318 (355 HGVs)	2,342 (367 HGVs)	24 [1.0%]	12 [3.4%]	Negligible	Negligible
Link Fifteen Low Levels Bank, W of Moor Lane/Crow Tree Bank	2,224 (388 HGVs)	2,224 (388 HGVs)	0 [0%]	0 [0%]	Negligible	Negligible
Link Sixteen A161 Eastoft Road, in between the Eastoft Road bus stop and the junction with Carr Lane	2,434 (361 HGVs)	2,434 (361 HGVs)	0 [0%]	0 [0%]	Negligible	Negligible
Link Seventeen	8,279	8,290	11	5	Negligible	Negligible

Link	2023 Baseline Two-Way AADT	With Dev Total Traffic Flow	Additional Two-way traffic Dev Total Traffic Flow (%age impact shown in square brackets)		Traffic Flow Magnitude of Impact	
			Total Veh	HGVs	Total Veh	HGVs
Wharf Road, near the Park View bus stops	(1,060 HGVs)	(1,065 HGVs)	[<1%]	[<1%]		
Link Eighteen A18 near Triangles Farm, southwest of Ealand	5,317 (911 HGVs)	5,388 (946 HGVs)	71 [1.3%]	35 [3.8%]	Negligible	Negligible
Link Nineteen Marsh Road W of junction with Windsor Road / Cross St	113 (18 HGVs)	122 (23 HGVs)	11 [8.8%]	5 [27.8%]	Low	Medium

NOTE*: HGVs included within total traffic flow. Link flows are two-way.*

12.5.21. Environmental impact will occur as a result of vehicular traffic associated with the development proposals on the identified construction traffic routes. The impacts and effects are: increases in vehicular traffic, including HGVs. Increases in traffic generally result in a temporary Negligible level of impact significance (<5% increase in LDV or HGV traffic) and are therefore **Not Significant**.

12.5.22. With reference to **paragraph 12.3.4**, only Link 19 (Marsh Road) requires further assessment on the basis that it has a high sensitivity ((as set out at **Appendix**

12.2 - Summary of Sensitive Receptors [Document Reference 6.3.12.2]) and a 27.8 percent impact in HGV traffic.

Road Safety

12.5.23. As set out in the supporting **Appendix 12.1 - Transport Statement [Document Reference 6.3.12.1]**, there is not considered to be any underlying highway safety problem on the local highway network on the proposed construction traffic routes or within the vicinity of the access points proposed within the Scheme.

12.5.24. The magnitude of change in road safety at Link 19 (Marsh Road) is therefore likely to be considered negligible. Link 19 has a high sensitivity (as set out at **Appendix 12.2 - Summary of Sensitive Receptors [Document Reference 6.3.12.2])** and therefore the significance of effect is likely to be Negligible.

12.5.25. During the Construction Phase there will be direct, short-term, temporary, negative effects on road safety. Overall, they are of a Negligible level of impact significance, and therefore **Not Significant** in EIA terms.

Severance

12.5.26. The IEMA traffic guidelines **[Ref. 12-1]** states *'In the context of a traffic and movement assessment, severance is the perceived division that can occur within a community when it becomes separated by major transport infrastructure… Severance may result from the difficulty of crossing a heavily trafficked toad or a physical barrier created by infrastructure'*.

12.5.27. The IEMA traffic guidelines **[Ref. 12-1]** suggests that *"changes in traffic flow of 30%, 60% and 90% are regarded as producing slight, moderate and substantial changes in severance respectively."*

12.5.28. In accordance with **Table 12-4,** all assessment links are considered to be subject to a negligible magnitude of change in severance based upon the increase of vehicle traffic flows of less than 30%. Therefore, the effect is considered to **be Negligible** and therefore **Not Significant**.

Driver Delay

12.5.29. IEMA traffic guidelines **[Ref. 12-1]** states that '*The assessment of driver delay will normally be based on the technical work reported within the Transport Assessment, which generally focuses on conditions in the network peak periods'*.

12.5.30. Link 19 (Marsh Road) has an existing peak hour flow of up to 10 two-way vehicle movements (the relevant data is included at **Appendix 12.3 - Baseline Traffic Survey Report [Document Reference 6.3.12.3]** . **Table 12-14** confirms that Link 19 could be associated with up to 11 two-way total vehicle movements per day.

12.5.31. Link 19 has a high sensitivity (as set out at **Appendix 12.2 - Summary of Sensitive Receptors [Document Reference 6.3.12.2]**) and a 8.8 percent impact in HGV traffic, resulting in a low magnitude of change. Therefore, the effect is considered to be Moderate for driver delay on this link and therefore **Significant** in EIA terms**.** However, it should be noted that there is a low baseline number of total traffic and HGVs using the link which affects the percentage increase in vehicle flow and magnitude of change.

Non-Motorised User Delay

12.5.32. The IEMA traffic guidelines **[Ref. 12-1]** suggests that the assessment of impact on NMU delay should be based upon professional judgement.

12.5.33. The eastern end of Link 19 (Marsh Road) follows the alignment of bridleway CROW18. However, the route of the PRoW already follows the alignment of the carriageway and Marsh Road is already used by large agricultural machinery. **Table 12.14** confirms that Link 19 could be associated with up to 11 two-way total vehicle movements per day, which equates to around one vehicle per hour across the course of the proposed working hours at the site. The magnitude of change is therefore considered to be negligible, and with reference to the sensitivity of the link, the significance of effect is **Not Significant.**

12.5.34. Should the PRoW be diverted as part of the proposals, NMU delay would be reduced as users of the PRoW and construction traffic would be separated.

Non-Motorised User Amenity

12.5.35. The IEMA traffic guidelines **[Ref. 12-1]** suggests that a threshold for judging this would be '*where the traffic flows (or its lorry component) is halved or doubled*'. With reference to **Table 12-4,** total traffic flows or HGV movements will not be no greater than a 27.8% increase on any one link across the course of 24 hours and therefore it is considered that there will be a Negligible effect on non-motorised user amenity and therefore **Not Significant**.

12.5.36. Should the PRoW be diverted as part of the proposals, NMU amenity would be improved as users of the PRoW and construction traffic would be separated.

Fear and Intimidation

12.5.37. The IEMA traffic guidelines **[Ref. 12-1]** suggest that a threshold for judging fear and intimidation would be assessing the degree of hazard with reference to previously established thresholds (as set out in **paragraphs 12.3.7 to 12.3.10**).

12.5.38. Link 19 is forecast to be associated with an AADT of 113 vehicles (including 18 HGVs) during the 'without development' scenario and an AADT of 132 vehicles (including 20 HGVs) 'with development'. The posted speed limit is 30mph and this will not change as a result of the Scheme. The total 18 hour HGV flow is less than 1,000 vehicles. The Scheme therefore has a 'small' level of fear and intimidation, both with and without development meaning there is no step change and therefore a negligible magnitude of change.

12.5.39. Therefore, the overall significance of effect is considered to be Negligible and **Not Significant** when **Table 12-8** is applied.

Hazardous Loads / Large Loads

12.5.40. The IEMA traffic guidelines **[Ref. 12-1]** suggest that where frequent abnormal load movements are anticipated that the impacts on fear and intimidation, driver delay etc. should be considered.

12.5.41. The Scheme will require Abnormal Indivisible Loads (AIL) on an infrequent basis. The deliveries will be planned with an AIL route assessment which will be secured as a Requirement of the DCO. The AILs will be escorted and managed along the route from the port of entry into the UK and the Order Limits. This will be secured by requirement via the **Outline CTMP [Document Reference 7.7].**

12.5.42. The Scheme will not be associated with frequent AIL movements and therefore in accordance with the IEMA traffic guidelines **[Ref. 12-1]** the magnitude of impact is considered to be negligible. All links, except Link 19 (Marsh Road) which has a high sensitivity, have a negligible sensitivity (as set out at **Appendix 12.2 - Summary of Sensitive Receptors [Document Reference 6.3.12.2]**). As such, is the significance of effect is negligible and there will be **No Significant** effects.

Other Impacts

12.5.43. The key potential impacts of construction traffic to be considered are:

- unsocial hours disturbance.
- mud on the roads; and
- dust, noise and air quality nuisance (these are assessed within the **ES Chapter 13 Noise and Vibration [Document Reference 6.2.13]** and **ES Chapter 14 Air Quality and Greenhouse Gases [Document Reference 6.2.14]** respectively.

12.5.44. It is envisaged that the construction working hours at the Scheme will generally be 07:00-19:00 Monday to Saturday and 09:00 to 13:00 on Sundays. There will be no work on Sundays before 09:00 or after 13:00, or on Bank Holidays unless otherwise agreed with the local planning authorities. In some circumstances, such as when drilling for the cable works has begun and cannot be stopped until it is complete, operational hours may be required to be extended beyond 19:00. However, it is considered that this will be an infrequent occurrence as works will be planned to avoid nighttime hours and works will typically be complete by 19:00. No material difference to the traffic forecasts will occur if the working hours are longer, as the assessment is based on the average number of vehicle trips per day during the peak of the temporary construction period. Noise related to construction traffic movements is assessed by a Noise specialist in **ES Chapter 13 Noise and Vibration [Document Reference 6.2.13]**.

12.5.45. In hot, dry conditions dust will be managed through the provision of sprinklers. The transfer of mud on to the local highway will be managed through the provision of wheel washing facilities at the point where the access road meets the adopted highway, although this is likely to be minimal due to the use of

existing tracks and the runway within the site. A road sweeper can also be provided as and when necessary.

12.5.46. Mitigation measures are set out in detail in Section 12.5 and in the **Outline CTMP [Document Reference 7.7]**.

Operation

12.5.47. Once operational, it is anticipated that there could be one maintenance trip to the Scheme per month(i.e. a total of two movements) associated with equipment maintenance, ground maintenance, security checks etc. This would typically be made by light van or 4x4 type vehicles.

12.5.48. There will also be approximately one visit per day to each Land Parcel associated with a Shepherd (for sheep grazing on site).The vehicles required for operational purposes frequently use the local highway network on a daily basis.

12.5.49. All links will be subject to a negligible magnitude of change based on the increase in traffic flows of less than 5% and a negligible magnitude of change based on there being no HGV traffic. The sensitivity of the link (as set out at **Appendix 12.2 - Summary of Sensitive Receptors [Document Reference 6.3.12.2]**) are negligible to high. Therefore, the effect is considered to be negligible and **Not Significant.**

12.5.50. During the operational phase there will be no direct, long-term, temporary, negative effects.

Decommissioning

12.5.51. The activities involved in the decommissioning process for the Scheme are not yet known in detail. The likely timeframes are set out in paragraph 2.3.3. It is anticipated that the Scheme will become fully operational in 2032 and is expected to be decommissioned in 2072, with an operational life of 40 years. There would be expected to be some traffic movements associated with the removal (and recycling, as appropriate) of material arising from removal. However, vehicle numbers are not expected to be any higher than those experienced during the construction period, and may be less if the grid connection is phased.

12.5.52. A similar number of vehicles are likely to be required for the decommissioning of the Scheme as the construction. This equates to around 42,120 two-way vehicular trips plus 17 crew minibuses per day (34 two-way trips). Assuming a decommissioning period of two years and a 6.5 day working week (660 days total), this equates to around 64 two-way vehicular movements per day or an AADT value of around 55 two-way movements ((64 x 6)/7) across the whole Scheme. This could be higher or lower at times depending on the stage of decommissioning, but would be no higher than the peak number of movements during the construction stage.

12.5.53. Current baseline data collected for the purposes of this assessment will not be valid at the year of decommissioning. However, it is considered unlikely that baseline traffic figures on local roads will reduce over the next 40 years or more, it is considered that the percentage increase in traffic due to decommissioning would be Negligible, due to the conclusions reach for the construction phase, and that overall the effects of decommissioning traffic would be no greater than that of the construction traffic detailed and assessed above. Effects are therefore assessed as likely to be **Not Significant** for most links. For Link 19 (Marsh Road) there could be direct, short team, temporary **Significant** effects on Road safety and Driver Delay.

12.6. Mitigation, Enhancement and Residual Effects

Construction Phase

Mitigation by Design

12.6.1. As set out in the **Outline Construction Environmental Management Plan [Document Reference 7.1]** standard measures and the adoption of construction best practice methods are to be incorporated and embedded into the design of the Scheme and the methods of its construction, in order to avoid, reduce or manage adverse environmental effects.

Additional Mitigation

12.6.2. A CTMP will be implemented during the construction phase of the project, based on the principles of the **Outline CTMP [Document Reference 7.7]** and secured by DCO requirement), as additional mitigation. The aim of the **Outline CTMP [Document Reference 7.7]** is to reduce the impact of the construction phase on residents, businesses, and the highway network. Construction

deliveries will be kept to agreed delivery hours where practicable and designed to reduce disruption to the highway network and residents (including during the night-time) by avoiding the peak hours, particularly on the SRN.

12.6.3. The **Outline CTMP [Document Reference 7.7]** contains a package of mitigation measures which includes

- Provision of contractor's compounds within the Order Limits, providing an area on site for HGVs to park and manoeuvre, off the local highway network.
- The arrival and departure of the HGVs will be strictly managed by the site manager, to avoid sensitive receptors where possible. The drivers will adhere to a delivery schedule and will be required to call ahead to ensure that any emerging vehicles can be held within the compound. No HGVs will therefore be required, or permitted, to wait on the public highway.
- Details limiting the hours of site operation and the routing of construction traffic to protect local residential areas from construction traffic, especially from HGVs where possible.
- Details limiting hours of delivery to avoid the peak hours on the SRN and avoiding the start and end of the school day within Crowle.
- The introduction of wheel washing facilities should ground condition dictate, before allowing vehicles to return to the local highway. In addition, a road sweeping vehicle could be made available to remove any site residue upon the local roads as and when necessary.
- Temporary signage will be erected in the vicinity of the Scheme and along the construction traffic routes as appropriate during the construction phase to indicate that heavy construction vehicles are turning; and
- The contact details of the contractor and those of the highway department at CDC and NLC will be exchanged before commencement of works on site. This will allow for any issues to be resolved efficiently.

12.6.4. A summary of the mitigation proposed for Transport and Access is included in **Table 12-15**.

Table 12-15: Mitigation

Ref	Measure to avoid, reduce or manage any adverse effects and/or to deliver beneficial effects	How measure would be secured	
		By Design	By DCO Requirements
1	Outline Construction Traffic Management Plan [**Document Reference 7.7]**		X
2	Outline Decommissioning Environmental Management Plan **[Document Reference 7.3]**		X
3	Diversion of PRoW, as required		X

Enhancements.

12.6.5. Enhancements are provided through a new Permissive Path being installed, creating a loop around Land Parcel A and connecting to the existing Thorne-19 Public Right of Way. This will be in place for the 40 year lifetime of the Scheme and are indicated on **ES Figure 2.2a – Indicative Operational Layout Plan (Fixed Solar Panel)/2.2b – Indicative Operational Layout Plan (Fixed and Tracker Solar Panel)** [**Document Reference 6.4.2.2]**.

Operational Phase

Mitigation by Design

12.6.6. Visibility splays at the site access points will be maintained to no more than 600mm in height once the Scheme is operational. This can be secured by requirement. No other mitigation is proposed once the Scheme is operational due to the low vehicular movements associated with the Scheme.

Residual Effects

Construction Phase

Road Safety

12.6.7. The residual significance of effect on Link 19 in terms of road safety is **Not Significant.**

Severance

12.6.8. All assessment links are considered to be subject to a negligible magnitude of change in severance based upon the increase of vehicle traffic flows of less than 30%. Therefore, the residual effect is considered to be **Negligible** and therefore **Not Significant**.

Driver Delay

12.6.9. On Link 19 (Marsh Road), the effect of increases in HGV movements on driver delay is considered to be Moderate and therefore **Significant** in EIA terms.

12.6.10. The mitigation measures discussed above are forecast to reduce the residual impact of the construction phase by one level of significance, resulting in a Minor significance of effect. This is **Not Significant** in EIA terms. However, as set out above, the low existing baseline is likely to overestimate the magnitude of impact on Marsh Road and a lesser significance of effect is considered more likely.

Non-Motorised User Delay

12.6.11. The residual significance of effect on Link 19 in terms of NMU delay is **Not Significant.**

Fear and Intimidation

12.6.12. The residual significance of effect on Link 19 in terms of fear and intimidation is **Not Significant.**

Hazardous Loads / Large Loads

12.6.13. The residual significance of effect on Link 19 in terms of hazardous loads / large loads is **Not Significant.**

Operational Phase

12.6.14. It is considered there would be **No Significant** (adverse) residual effects as a result of the operational phase.

Decommissioning Phase

12.6.15. The impact significance during decommissioning is considered to be similar to that experienced during the construction phase and therefore is generally **Not Significant.**

12.6.16. For Road Safety and Driver Delay on Link 19 there will be **Significant** effects. However, the low existing baseline is likely to overestimate the magnitude of impact on Marsh Road and a lesser significance of effect during the decommissioning phase is considered more likely.

12.7. Summary

Introduction

12.7.1. This **ES Chapter 12 Transport and Access [Document Reference 6.2.12]** assesses the potential likely significant effects of the Scheme on vehicular traffic flows, severance, driver delay, non-motorised user delay, non-motorised amenity, road safety, fear and intimidation, and hazardous/large loads.

12.7.2. This ES chapter has been prepared alongside a supporting **Transport Statement [Document Reference 6.3.12.1]** (**Appendix 12.1**) and **Outline Construction Traffic Management Plan [Document Reference 7.7]**.

Baseline Conditions

12.7.3. The Scheme is centred at approximately ten kilometres to the northeast of Doncaster and 14 kilometres to the west of Scunthorpe. Access to the site during the construction and operational phases is anticipated to be provided from Moor Edges Road; High Bridge Road; the A18 Tudworth Road; Marsh Road; an unnamed access road which links the A161 and High Levels Bank; High Levels Bank; Sandtoft Road and Low Levels Bank.

12.7.4. Data from the most recent five-year period shows that there are not any existing highway safety issues on the local highway network that would be exacerbated by the Scheme.

12.7.5. The Scheme currently comprises agricultural land uses. Access to the Order Limits is currently provided via agricultural access points in multiple locations on the local highway network.

Likely Significant Effects

12.7.6. Impact magnitudes have been defined for the construction phase with regard to the IEMA 'Environmental Assessment of Traffic and Movement guidelines' (IEMA traffic guidelines).

12.7.7. Impact Magnitudes have been defined for the construction phase with regard to the IEMA traffic guidelines , which states that a significant environmental impact may occur when traffic flows (or its HGV component) increase by 30% (or 10% where a link is of high sensitivity significance).

Construction

12.7.8. The impact of the construction phase traffic is generally considered to be of Negligible to Moderate significance. On Link 19 (Marsh Road) there are significant effects relating to Road Safety and Driver Delay. There will therefore be a direct, temporary, medium-term moderate adverse residual effect during the construction phase. However, there is a low baseline number of total traffic and HGVs using the link which affects the percentage increase in vehicle flow and magnitude of change.

Operation

12.7.9. Once operational, all assessed links will be subject to a negligible magnitude of change based on the increase in traffic flows of less than 5% and a negligible magnitude of change based on there being no HGV traffic. The sensitivity of the links (as set out at **Appendix 12.2 - Summary of Sensitive Receptors [Document Reference 6.3.12.2]**) are negligible to high. During the operational phase there will therefore be no direct, long-term, temporary, negative effects.

Decommissioning

12.7.10. The impact of the decommissioning phase traffic is generally considered to be of Negligible to Moderate significance. On Link 19 (Marsh Road) there are significant effects relating to Road Safety and Driver Delay. There will therefore be a direct, temporary, medium-term moderate adverse residual effect during

the construction phase. However, there is a low baseline number of total traffic and HGVs using the link which affects the percentage increase in vehicle flow and magnitude of change.

Mitigation and Enhancement

12.7.11. Mitigation has been provided in the form of an **Outline Construction Traffic Management Plan [Document Reference 7.7]** to reduce the impacts of the construction phase. The document includes a range of management and mitigation measures to reduce the impacts of the construction phase. The proposed mitigation is forecast to reduce the significance of effect of Moderate to Minor and **Not Significant**.

Conclusion

12.7.12. It is concluded that the proposed package of mitigation measures will ensure that the Scheme is acceptable and that there will be **No (adverse) Significant effects**.

12.7.13. There are therefore no highways or transportation reasons which should prevent the Scheme.

12.7.14. **Table 12-16** provides a summary of effects, mitigation and residual effects.

Table 12-16: Summary of effects, mitigation and residual effects

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects
Construction / Decommissioning								
Link Nineteen - Marsh Road, west of the junction between Windsor Road/Cross Street	Road Safety	Temporary / Direct	High	Negligible	Local	Negligible (Not Significant)	Provision of an Outline CTMP	Negligible Adverse **(Not Significant)**

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects
	Severance		High	Negligible		Negligible (Not Significant)		Negligible Adverse **(Not Significant)**
	Driver Delay		High	Low		Moderate (Significant)		Minor Adverse **(Not Significant)**
	Non-Motorised User Delay		High	Negligible		Negligible (Not Significant)		Negligible Adverse **(Not Significant)**
	Non-Motorised User Amenity		High	Negligible		Negligible (Not Significant)		Negligible Adverse

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects
								(Not Significant)
	Fear and Intimidation		High	Negligible		Negligible (Not Significant)		Negligible Adverse **(Not Significant)**
	Hazardous and Large Loads		High	Negligible		Negligible (Not Significant)		Negligible Adverse **(Not Significant)**
Operation								
All	Road Safety	Temporary / Direct	Negligible / Medium / High	Negligible	Local, Borough/ District	Negligible (Not Significant)	n/a	Negligible Adverse

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects
	Severance			Negligible		Negligible (Not Significant)		**(Not Significant)**
	Driver Delay			Negligible		Negligible (Not Significant)		
	Non-Motorised User Delay			Negligible		Negligible (Not Significant)		
	Non-Motorised User Amenity			Negligible		Negligible (Not Significant)		

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects
	Fear and Intimidation			Negligible		Negligible (Not Significant)		
	Hazardous and Large Loads			Negligible		Negligible (Not Significant)		

12.8. References

- Ref. 12-1: Institute of Environmental Management and Assessment (IEMA) guidelines: 'Environmental Assessment of Traffic and Movement' (2023)
- Ref. 12-2: The Highways Act 1980
- Ref. 12-3: Overarching National Policy Statement (NPS) for Energy (EN-1) 2024 - (Section 5.4 'Traffic and Transport')
- Ref. 12-4: National Policy Statement for Renewable Energy Infrastructure (EN-3) 2024 - Section 2.10 'Solar Photovoltaic Generation')
- Ref. 12-5: National Planning Policy Framework (2024)
- Ref. 12-6: Planning Practice Guidance (2014)
- Ref. 12-7: Doncaster Local Plan 2015 – 2035 (adopted September 2021)
- Ref. 12-8: The North Lincolnshire Local Development Framework, including Core Strategy (adopted June 2011)
- Ref. 12-9: North Lincolnshire Local Transport Plan
- Ref. 12-10: National Highways - The Strategic Road Network and the Delivery of Sustainable Development (December 2022)
- Ref. 12-11: Planning Practice Guidance - Travel Plans, Transport Assessments and Statements
- Ref. 12-12: Manual for Streets (Department for Transport, 2007)
- Ref. 12-13: Design Manual for Roads and Bridges, Standards for Highways

12.9. Glossary

Table 12-17: Glossary for Transport and Access

Terminology	Definition
AADT	Annual Average Daily Traffic -

Terminology	Definition
AIL	Abnormal Indivisible Load
ATC	Automatic Traffic Count
CDC	City of Doncaster Council
CTMP	Construction Traffic Management Plan
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
ES	Environmental Statement
HGV	Heavy Goods Vehicle
IEMA	Institute of Environmental Management and Assessment
LDV	Light duty vehicle
Mph	Miles per hour
NGET	National Grid Electricity Transmission
NLC	North Lincolnshire Council
NMU	Non-Motorised User
NPPF	National Planning Policy Framework
NPS	National Policy Statement

Terminology	Definition
PIC	Personal Injury Collision
PRoW	Public Right of Way
SRN	Strategic Road Network
S278	Section 278