One Earth Solar Farm

Volume 6.0: Environmental Statement [EN010159]

Volume 2: Aspect Chapters

Chapter 12: Transport and Access

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Contents

Glossary

Term	Definition
Annual Average Daily Traffic (AADT)	A measurement of the average number of vehicles on a road over a year.
Abnormal Indivisible Load (AIL)	Abnormal loads that cannot be divided into two or more loads to be transported by road and are in excess of the limits set out in the Road Vehicles (Construction and Use) Regulations 1986.
Construction Traffic Management Plan (CTMP)	A document that sets out measures on how construction traffic, including site personnel movements, will be safely controlled during a construction period.
Department for Transport (DfT)	The UK Government department responsible for transport matters.
Design Manual for Roads and Bridges (DMRB)	A set of documents and design guidelines that contains information about current design standards relating to the design, assessment and operation of roads within the UK.
Heavy Goods Vehicle (HGV)	A vehicle that is used to transport goods and materials and has a gross combination mass of more than 3,500 kg.
Light Goods Vehicle (LGV)	A vehicle that is used to transport goods and materials and has a gross combination mass of less than 3,500 kg.
National Cycle Network (NCN)	A UK-wide network of signed paths and routes for walking, wheeling, cycling and exploring outdoors.
National Road Traffic Forecast (NRTF)	Forecasts produced by the DfT to predict further traffic growth.
Ordnance Survey (OS)	The national mapping agency for Great Britain. Excludes Northern Ireland.
Personal Injury Accident (PIA)	A recorded accident that results in damage or injury and that is collated by the Police in the UK.

List of Abbreviations and Acronyms

Term	Definition
AADT	Annual Average Daily Traffic
AIL	Abnormal Indivisible Load
ATC	Automatic Traffic Count
CCS	Considerate Constructors Scheme
CLOCS	Construction Logistics and Community Safety
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DTMP	Decommissioning Traffic Management Plan
ES	Environmental Statement
HGV	Heavy Goods Vehicle
IEMA	Institute of Environmental Management and Assessment
km	Kilometre
LCC	Lincolnshire County Council
LGV	Light Goods Vehicle
NCC	Nottinghamshire County Council
NCN	National Cycle Network
NCR	National Cycle Network Route
NMU	Non-motorised User
NRTF	National Road Traffic Forecast
oCTMP	Outline Construction Traffic Management Plan
OS	Ordnance Survey

Term	Definition
PIA	Personal Injury Accident
PRoW	Public Right of Way

12. Transport and Access

12.1.1 This Chapter of the Environmental Statement (ES) has been prepared by Pell Frischmann Consultants Limited and presents an assessment of the likely significant environmental effects of the Proposed Development on transport and access.

12.1.2 A description of the methods used in the assessment is set out in this Chapter. This is followed by a description of the relevant baseline conditions, future baseline conditions and sensitive receptors, together with an assessment of the likely significant effects of the Proposed Development during construction, operation and maintenance and during decommissioning.

12.1.3 Consideration of the potential for likely significant environmental effects has been undertaken throughout the design of the Proposed Development. Specific environmental measures relevant to Transport and Access have been identified and have been considered (as embedded and additional) mitigation as part of the transport and access assessment. To conclude, a summary of the assessment is presented.

12.1.4 The document references have not been updated from the original submission. Please refer to the Guide to the Application [EN010159/APP/1.3.2] for the list of current versions of documents.

12.1.5 The approach to the assessment has been defined by the Scoping Opinion (see **ES Volume 3: Scoping Opinion [EN010159/APP/6.23]**).

12.1.6 This Chapter is supported by the appendices located within **ES Volume 3: Technical Appendices Supporting ES Volume 2 [EN010159/APP/6.21]**:

- **Appendix 12.1**: Summary of Relevant Legislation, Policy and Technical Guidance
- **Appendix 12.2**: Transport Assessment

12.2 Relevant Policy and Technical Guidance

12.2.1 A summary of the relevant documents for Transport and Access is provided in this section. Further details are included in **ES Volume 3, Appendix 12.1: Summary of Relevant Legislation, Policy and Technical Guidance [EN010159/APP/6.21]**:

- Overarching National Policy Statement for Energy (EN-1) (2023)[1] – Section 5.14 details the planning policy for transport and access matters;
- National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (2023)[2] – Section 2.10 gives specific consideration to solar development including the assessment of traffic and transport impacts;
- National Policy Statement for Electricity Networks Infrastructure (NPS EN-5) (2023)[3];
- National Planning Policy Framework (2024)[4];
- Bassetlaw Local Plan 2020 – 2038, Adopted May 2024[5];
- Nottinghamshire County Council Local Transport Plan 2011 – 2026[6];
- Central Lincolnshire Local Plan, 2023[7];
- Newark and Sherwood Local Development Framework Core Strategy & Allocations, Amended Core Strategy, 2019[8];
- Lincolnshire County Council Local Transport Plan 5[9]; and
- The Nottinghamshire Highway Design Guide[10].

[1] Department for Energy Security and Net Zero (2023), National Policy Statement for Energy (EN-1).

[2] Department for Energy Security and Net Zero (DESNZ) (2023), National Policy Statement for Renewable Energy Infrastructure (EN-3).

[3] DESNZ (2023), National Policy Statement for Electricity Networks Infrastructure (EN-5).

[4] Department for Levelling Up, Housing and Communities (DLUHC) (2024) National Planning Policy Framework, [Online], Available: https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf

[5] Bassetlaw District Council (BDC) (2024), Bassetlaw Local Plan 2020 – 2038.

[6] Nottinghamshire County Council (NCC) (2011), Nottinghamshire County Council Local Transport Plan 2011 – 2026.

[7] Lincolnshire County Council (LCC) (2023), Central Lincolnshire Local Plan.

[8] Newark and Sherwood Local Development Framework Core Strategy & Allocations, Amended Core Strategy (Adopted March 2019)

[9] LCC (2022), Lincolnshire County Council Local Transport Plan 5.

[10] NCC (Undated), Nottinghamshire Highway Design Guide.

- IEMA 'Environmental Assessment of Traffic and Movement' (2023)[11];
- Planning Practice Guidance "Travel Plans, Transport Assessments and Statements[12]"; and
- Department for Transport, et al, Design Manual for Roads and Bridges[13].

12.3 Assessment Methodology and Significance Criteria

The Study Area

12.3.1 The study area has been based on those roads that are expected to experience increased traffic flows associated with the construction of the Proposed Development. The geographic scope was determined through a review of the other developments in the area, Ordnance Survey (OS) plans and consultation with the Highway Officers at Nottinghamshire County Council (NCC) and Lincolnshire County Council (LCC).

12.3.2 The proposed study area includes the road and transport links most likely to be impacted by the proposed movements associated with the Proposed Development and includes:

- A57;
- A1133;
- Moor Lane;
- Roadwood Lane;
- Main Street;
- Polly Taylor's Road; and
- Crabtree Lane.

12.3.3 A plan illustrating the proposed study area is provided in **Figure 6** of **ES Volume 3, Appendix 12.2: Transport Assessment [EN010159/APP/6.21]**.

[11] Institute of Environmental Management & Assessment (IEMA) (2023), Environmental Assessment of Traffic and Movement.

[12] Department of Levelling Up, Housing & Communities (2014), Planning Practice Guidance "Travel Plans, Transport Assessments and Statements.

[13] Depart for Transport (DfT) et al, (Undated), Design Manual for Roads and Bridges (DMRB).

12.3.4 The Proposed Development is located within the administrative boundaries of NCC and LCC, the two local road highway authorities within the study area, with the majority of the Proposed Development falling within Nottinghamshire.

12.3.5 For ease of reference and for the purposes of the Transport Assessment, the Order Limits can be subdivided into four sections; namely:

- The Western Development area (located to the west of the River Trent and accessed from the A57);
- The Southwestern Development area (located to the west of the River Trent and accessed from Polly Taylor's Road and Crabtree Lane);
- The Eastern Development area (located to the east of the River Trent and accessed directly from the A1133); and
- The Southeastern Development area (located to the east of the River Trent and located to the south of the disused Fledborough – Lincoln railway line).

Establishing the Baseline

Existing baseline

12.3.6 The following sources have been used to establish the baseline for use in this assessment:

- A study area walkover and drive over of the affected road network;
- Desk top search of existing accident and traffic statistics relevant to the study, including OS mapping, the online accident resource crashmap.co.uk, Department for Transport Road Traffic database and online references from both local authorities and other relevant stakeholders; and
- The collection of new traffic survey data (in March 2024).

Future Baseline

12.3.7 National Road Traffic Forecast (NRTF) growth factors were used to determine the future baseline traffic flows. These were applied to the surveyed traffic flows to estimate future year conditions.

Identifying Receptors and Receptor Sensitivity

12.3.8 The IEMA Guidelines[11] includes guidance on how the sensitivity of receptors should be assessed. This is set out in the following sections.

Assessment Methodology

12.3.9 The Institute of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Impact Assessment' (2005)[14] notes that the separate IEMA Guidelines should be used for characterising the environmental traffic and transport effects (offsite effects) and the assessment of significance of major new developments.

12.3.10 Recent guidance published by IEMA, namely 'Environmental Assessment of Traffic and Movement[11]' (2023) has been used to characterise the environmental traffic and transport effects (offsite effects) and the assessment of significance of major new developments. The guidelines intend to complement professional judgement and the experience of competent experts.

12.3.11 In terms of traffic and transport impacts, the receptors are the users of the roads within the study area and the locations through which those roads pass.

12.3.12 The IEMA Guidelines[11] includes guidance on how the sensitivity of receptors should be assessed. Using that as a base, professional judgement was used to develop a classification of sensitivity for users based on the characteristics of roads and locations.

Construction

12.3.13 The assessment during the construction phase has been based upon the percentage increase in traffic flows that result from the addition of construction traffic to the future baseline traffic flows (2027).

12.3.14 An assessment of the potential origin locations of construction staff and supply locations for construction materials associated with the Proposed Development includes the following:

- Bulk materials for use in the Proposed Development are likely to be sourced from existing supply locations located to the south. It is proposed that access will be taken from either side of the River Trent for these materials, with western riverbank quarries supplying the Proposed Development to the west of the River Trent development areas and those on the eastern bank supplying the Proposed Development to the eastern development areas of the River Trent;
- Electrical component, plant and general deliveries are likely to originate along the A1(M) corridor and from Lincoln; and

[14] Institute of Environmental Management and Assessment (IEMA) (2005) 'Guidelines for Environmental Impact Assessment'.

- Staff engaged during the construction process will mostly be based within the major urban areas located close to the Proposed Development during the construction and decommissioning phases.

12.3.15 Access around the Order Limits would be taken from strategic points on the public road network, with access achieved via new access tracks and upgraded farm access tracks.

12.3.16 As detailed in **ES Volume 1, Chapter 5: Description of the Proposed Development [EN010159/APP/6.5]**, to construct the Proposed Development, a variety of vehicles will be required. These will include, but not be limited to:

- Cars, Light Goods Vehicles (LGV) and Vans;
- Articulated and rigid Heavy Goods Vehicles (HGV) delivering plant, materials and electrical components;
- Rigid HGV delivering bulk materials such as aggregate, ready-mix concrete, etc for use on the Site;
- Specialist machinery, usually delivered using a low loader style articulated HGV, including loads that may include loads such as directional drilling equipment and excavation plant (for the cable grossing under the River Trent); and
- Abnormal Indivisible Loads (AILs) carrying special oversized loads such as electrical grid transformers.

12.3.17 All scheme vehicle movements described in this report, unless specifically stated otherwise, are classed as trips and include an inbound and outbound flow from the Order Limits. One-way flows are noted as movements.

Operational and Maintenance

12.3.18 During the operational phase, up to 10 LGV trips per day, on average, are predicted to cater for cleaning of modules and general Site maintenance. When longer term maintenance of battery units or modules is required, HGV access will be necessary with up to 12 HGV trips potentially per day. The number of vehicle trips occurring during this phase will be well below the number of movements assessed for the construction phase and significantly below the overall IEMA guidance thresholds. As such, no further assessment is required.

12.3.19 Access infrastructure to enable maintenance and potential replacement of larger equipment on Site will be retained to facilitate access, when required.

12.3.20 The traffic impact of the operational phase is considered to be minimal and below the trigger for an assessment. The Planning Inspectorate in their scoping review of the Proposed Development, has also agreed that the operational and

maintenance phase can be scoped out of the assessment (see **ES Volume 3, Scoping Opinion [EN010159/APP/6.23]**).

Decommissioning

12.3.21 Decommissioning will include the removal of all above ground infrastructure. Permissive paths will also be removed. Underground cable elements may remain in situ. Trees and hedgerows planted as part of the Proposed Development are assumed to remain in situ when the land is returned to the landowners. The traffic generation associated with the decommissioning phase is therefore expected to be less than that associated with the construction phase.

12.3.22 It is therefore expected that the decommissioning phase will result in fewer trips on the road network than the construction phase.

12.3.23 The growth of background traffic created through wider development in the area, will increase the baseline traffic flows. With a larger baseline and smaller development traffic generation, the potential traffic impact is therefore considered to be significantly below that reported for the construction phase. As such no further assessment has been undertaken.

Significance Criteria

12.3.24 The IEMA Guidelines[11] includes guidance on how the sensitivity of receptors should be assessed. Using that as a base, professional judgement was used to develop a classification of sensitivity for users based on the characteristics of roads and locations. This is summarised in **Table 12.1**.

Table 12.1 ***Sensitivity Descriptions***

Sensitivity	Description
High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures. Where a location is a large rural settlement containing a high number of community and public services and facilities.
Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures. Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures. Where a location is a small rural settlement, few community or public facilities or services.

Sensitivity	Description
Negligible	Where roads have no adjacent settlements. Includes new or existing strategic trunk roads that would be little affected by additional traffic and suitable for Abnormal Loads, and new strategic trunk road junctions capable of accommodating Abnormal Loads. Where a location includes individual dwellings or scattered settlements with no facilities.

12.3.25 Where a road / construction traffic flows pass through a location, users are considered subject to the highest level of sensitivity defined by either the road or the location characteristics.

Magnitude of Impact

12.3.26 The magnitude of impact has been assessed in accordance with the following rules which are outlined in the 2023 IEMA Guidelines [11], and are used to inform a screening exercise to determine which links within the study area are to be considered for detailed analysis in the assessment:

- Rule 1: Include highway links where traffic flows are predicted to increase by more than 30% (or where the number of heavy goods vehicles (HGVs) is predicted to increase by more than 30%).
- Rule 2: Include any other specifically sensitive areas where total traffic flows are predicted to increase by 10% or more.

12.3.27 The IEMA Guidelines[11] identify the key impacts when assessing the magnitude of traffic effects from an individual development:

- Severance – the IEMA Guidance11 advises that, “The Department for Transport has historically set out a range of indicators for determining the significance of severance. Changes in traffic flow of 30%, 60% and 90% are regarded as producing ‘slight’, ‘moderate’ and ‘substantial’ changes in severance respectively. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.” (Para 3.16). The Guidelines acknowledge that changes in traffic flows should be used cautiously, stating that “the assessment of severance should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc.” (Para 3.17).

- Driver delay – the IEMA Guidelines11 note that these delays are only likely to be “significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system” (Para 3.20).
- Pedestrian delay (incorporating delay to all non-motorised users) – the IEMA Guidance11 advises that "pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development site.” (Para 3.24). Furthermore, the guidance advises that “…it is not considered wise to set down definitive thresholds. Instead, it is recommended that the competent traffic and movement expert use their judgement to determine whether pedestrian delay constitutes a significant effect.” (Para 3.26).
- Non-motorised user amenity - the IEMA Guidance11 advises that, “The 1993 Guidelines suggest that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or HGV component) is halved or doubled. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law.” (Para 3.30).
- Fear and intimidation – there are no commonly agreed thresholds for estimating levels of fear and intimidation, from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30%, 60% and 90% are regarded as producing minor, moderate and substantial changes respectively in the guidelines. (Para 2.19). As such, this has been used to assess the potential impacts associated with construction activities around fear and intimidation on people near the Proposed Development.
- Road safety – professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. In line with the IEMA Guidance11, those areas of collision clusters would be subject to detailed review.
- Road safety audits – It would be proposed to undertake any necessary Road Safety Audits (RSA) post consent and it is considered that this can be secured via the highways technical approval process.

- Hazardous Loads / Large loads – The movement of the AIL associated with the construction of the Proposed Development will be considered in full, within a separate route survey assessment, which identifies physical mitigation measures required to accommodate the predicted loads within the final planning submission. Additional mitigation in terms of addressing potential impacts on sensitive receptors are included as standard within the mitigation section.

12.3.28 While not specifically identified, as more vulnerable road users, cyclists are considered in similar terms to pedestrians.

12.3.29 The four levels against which the magnitude of these impacts should be assessed – major, moderate, minor and negligible are discussed in **Table 12.2**.

Table 12.2 Magnitude of Effect

Magnitude	Description
Major	These effects are considered to be material in the decision-making process.
Moderate	These effects may be important but are not likely to be material factors in decision making. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a receptor.
Minor	These effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in improving the subsequent design of the project.
Negligible	No effects or those that are imperceptible.

Defining the Effect

12.3.30 To determine the overall significance of effects, the results from the receptor sensitivity and magnitude of change assessments are correlated and classified using the scale illustrated in **Table 12.3**.

Table** 12.3 **Significance of Effect

Receptor Sensitivity	Magnitude of Impact			
	Major	**Moderate**	**Minor**	**Negligible**
High	Major	Major / Moderate	Moderate / Minor	Minor
Medium	Major / Moderate	Moderate	Minor	Minor / Negligible

Receptor Sensitivity	Magnitude of Impact			
	Major	Moderate	Minor	Negligible
Low	Moderate / Minor	Minor	Minor	Minor / Negligible
Negligible	Minor	Minor / Negligible	Minor / Negligible	Negligible

12.3.31 Significance is categorised as major, moderate, minor or negligible. Likely effects judged to be of Major or Moderate significance will be considered to be significant in accordance with the EIA Regulations whilst also considering the environmental measures that have been incorporated into the Proposed Development.

12.3.32 Where an effect could be one of major / moderate or moderate / minor significance, professional judgement will be used to determine which option should be applicable, as these effects can be classed as significant. Effects judged to be of minor or negligible significance will be considered not significant.

Consultation and Engagement

12.3.33 As set out in **ES Volume 1, Chapter 2: EIA Methodology [EN010159/APP/6.2]**, a number of consultation activities have been undertaken. Full details and key issues raised and discussed in respect of Transport and Access are set out in **ES Volume 3, Appendix 2.2: ES Response to PINs Scoping Opinion [EN010159/APP/6/21]**

12.3.34 A scoping discussion with both LCC and NCC transport officers was held on 19th January 2024. The officers agreed to the proposed traffic survey strategy, general methodology and assessment approach.

Assumptions, Exclusions and Limitations

12.3.35 The assessment is based upon average traffic flows in one-month periods. During any given month, activities at the Proposed Development may fluctuate between one day and another and, at this stage, it is not possible to fully develop a day-by-day traffic flow estimate. This would be confirmed once a Principal Contractor has been appointed. However, it should be noted that external factors can also impact upon activities on a day-by-day basis, weather conditions, availability of materials, time of year, etc.

12.3.36 The Future Baseline Year being assessed as part of the traffic and transport assessment is 2027, as this is the anticipated first year of construction, should the Proposed Development be granted consent.

12.3.37 It is considered that there is sufficient design and construction information to enable a robust assessment and an informed decision to be taken in relation to

the identification and assessment of likely significant environmental effects on Transport and Access.

12.4 Baseline Conditions

Existing Baseline: Active Travel Network

12.4.1 There are limited existing pedestrian facilities in the immediate vicinity of the Proposed Development, reflecting the rural nature of the general area.

12.4.2 With the exception of a footway between the junction of the A57 / Main Street / Laneham Road, (to the west of Dunham) and the Dunham Toll Bridge and the west of Dunham on Trent, there are no pedestrian footways along the A57. No footways are provided on the A1133, Moor Lane, Polly Taylor's Road or Crabtree Lane.

12.4.3 There are Public Rights of Way (PRoW) leading through the Proposed Development. A full list is provided in **ES Volume 2, Chapter 11: Landscape and Visual [EN010159/APP/6.11]**. The affected PRoW are:

- Lincolnshire CC PRoW 7023;
- Lincolnshire CC PRoW 4046;
- Lincolnshire CC PRoW 4048;
- Lincolnshire CC PRoW 4045;
- Nottinghamshire CC PRoW North Clifton FP3;
- Nottinghamshire CC PRoW North Clifton FP1;
- Nottinghamshire CC PRoW North Clifton FP2;
- Nottinghamshire CC PRoW North Clifton Byway Open to All Traffic (BOAT) BOAT12;
- Nottinghamshire CC PRoW North Clifton BW10;
- Nottinghamshire CC PRoW Thorney FP6;
- Nottinghamshire CC PRoW Ragnall FP4; and
- Nottinghamshire CC PRoW Ragnall BW3.

12.4.4 For ease of reference, it has been assumed that PRoW also covers Bridleways that occur within the study area.

12.4.5 Located within the Order Limits and approximately 500 m south of its centre, is the Sustrans Cycle National Cycle Network Route (NCR) 647. This part of the NCR uses a disused railway line associated with the former Lancashire,

Derbyshire and East Coast Railway, which ran east-west connecting Lincoln to the east with Tuxford to the west. Crossing over the River Trent, the Sustrans Route utilises the Fledborough Viaduct (see **ES Volume 1, Chapter 3: Description of the Site and Surrounding Area [EN010159/APP/6.3]** for further details). The route is grade separated from the Proposed Development.

12.4.6 The NCR departs the former railway line alignment at Main Street, where the route bifurcates. To the north, a segregated spur passes through agricultural land and connects to Crabtree Lane. To the south, the route uses the southern section of Main Street and Polly Taylor's Road to proceed westbound. The two routes join together and then proceed west towards Tuxford using a minor public road.

Existing Baseline: River Transport

12.4.7 The River Trent is the United Kingdom's third longest river and flows from its source in Staffordshire to Trent Falls in Lincolnshire where it meets the River Humber.

12.4.8 The River Humber and its estuary are used for marine access to Immingham, Hull, Goole and other inland ports, including those on the River Trent.

12.4.9 The River Trent has historically been used for the movement of freight from the East Coast ports of Grimsby, Hull and Goole into the Midlands, however freight usage along the length of the river is now significantly reduced.

12.4.10 The navigation of the River Trent is controlled by two agencies. The southern portion of the River Trent is controlled by the Canal & River Trust (CRT) from Gainsborough to the south. The facilities in the northern section fall under Associated British Ports (ABP) who operate the principal quay facilities between Gainsborough and the Humber Estuary. These include Kings Ferry Wharf at Burton Stather, Flixborough Wharf and Gunness.

12.4.11 The River Trent is tidal between the Humber Estuary and Cromwell Lock (approximately 5 km north of Newark).

12.4.12 The Humber River is circa 66 km from the northernmost land parcel of the Proposed Development.

12.4.13 A review of the potential for access to the Proposed Development using the River Trent has been undertaken and is reported in **ES Volume 3, Appendix 12.2:**

12.4.14 **Transport Assessment [EN010159/APP/6.21]**. The Order Limits does not feature any suitable river quay facilities to offload materials, and it is considered that the movement of bulk materials is not feasible.

12.4.15 Engagement with National Highways has identified a potential river facility at Cottam. This however has been discounted as it is a private facility, land locked from the public road network. As such, the use of the facility at Cottam cannot be relied upon at present.

12.4.16 To demonstrate that AIL traffic can access the Site, AIL movements from Goole Harbour and the Port of Immingham to the two substation sites has been undertaken and is reported in **ES Volume 3, Appendix 12.2: Transport Assessment [EN010159/APP/6.21]**.

Existing Baseline: Road Network

12.4.17 As shown in **ES Volume 3, Appendix 12.2: Transport Assessment [EN010159/APP/6.21]** access to the Proposed Development will be split across 11 gates labelled Gate A – Gate K. Gate A – Gate E will be located to the west of River Trent and Gate F – Gate K to the east. The access junctions have been designed to suit the Proposed Development and its associated traffic. Figures illustrating the junction layouts are provided in **ES Volume 3, Appendix 12.2: Transport Assessment [EN010159/APP/6.21]**.

12.4.18 Access to the nearest trunk road is available at the A57 to the north of the Proposed Development. The A57 provides strategic road connections from Lincoln to Sheffield and is operated by NCC and LCC. The A57 also links onto the A1 at Markham Moor which is a direct link into Central London to the south and Edinburgh to the north.

12.4.19 The A57 features a private toll bridge at Dunham. The bridge is free at all times for pedestrians, cyclists, motorcyclists and three-wheeled invalid carriages. Tolls for motorised vehicles are regulated by the Department for Transport (DfT) and are set at £0.50 for cars and minibuses, £1.00 for LGV and coaches and £2.00 for HGV and farm traffic.

12.4.20 The A1133 provides connections from the A156 to Newark-on-Trent. The road is a local distributor road and is operated by LCC and NCC. It is approximately 7.5 to 8 m in width and capable for regular HGV use. It is mainly subject to a 60 miles per hour (mph) speed limit, although the road is restricted to 30 mph in Collingham which occurs in the south.

12.4.21 Main Street is a 40 mph single carriageway road when surrounded primarily by residential properties and otherwise operates as a 60 mph speed limit throughout more rural sections. Main Street provides a direct connection between the A57 to the north and Sutton on Trent to the south.

12.4.22 Polly Taylor's Road is a rural 60 mph single carriageway road, approximately 6 m in width, off Main Street which connects directly onto Crabtree Lane. Crabtree Lane is a quiet and narrow 60 mph road with passing places to allow for two way traffic.

12.4.23 Moor Lane is a rural 60 mph single carriageway road, approximately 4m in width and is accessible off the A1133.

12.4.24 Across the study area, a total of 39 accidents were recorded across the five-year period (2019-2023)[15]. Of these the majority were classed as being "slight" (61.5%) and resulted in damage only / minor injury incidents. 14 accidents were noted as being "serious" resulting in a serious injury and two accidents resulted in a fatality.

12.4.25 Of the recorded accidents, the following vehicles were involved:

- Young drivers (under 25) accounted for ten "slight" accidents, one "serious" and one fatal accident;
- Motorcyclists were involved in two "slight" and "three" serious accidents and one fatal accident;
- Cyclists were involved in one "slight" accident;

HGV traffic was involved in 16 "slight" and four "serious" accidents. Of these, one occurred on Main Street, two on the A1133, with the remainder occurring on the A57;

- 20 accidents were individual accidents with no other vehicles involved;
- Eight accidents occurred during winter months;
- No child or pedestrian casualties were recorded; and
- No accidents involving bus passengers were recorded.

12.4.26 Accidents on the A57 tend to occur at junctions or on the approach to the Dunhan toll bridge booths. These suggest improved road signage and other features should be deployed by the relevant authorities.

12.4.27 The more rural roads, Polly Taylor's Road, Crabtree Lane and Roadwood Lane, have not had any reported Personal Injury Accidents within the most recent five-year period.

Existing Baseline: Road Traffic Levels

12.4.28 In order to assess the impact of construction traffic on the study area, Automatic Traffic Counts (ATCs) were undertaken throughout the study area between 12 March 2024 and 27 March 2024 at locations agreed with both highway authorities.

[15] Source: www.crashmap.co,uk (accessed December 2024)

12.4.29 Traffic counts were collected as two-way flows and are summarised into cars and LGV, HGV, and Total Traffic flows.

12.4.30 The locations of the ATC sites are illustrated **ES Volume 3, Appendix 12.2: Transport Assessment [EN010159/APP/6.21]**. The surveyed traffic data for 2024 has been summarised in **Table 12.4**.

Table** 12.4 **2024 Surveyed Vehicle Flows

Link	Car & LGV	HGV	Total Traffic
A57 west of Dunham	8152	865	9017
A57 Dunham	8152	865	9017
A57 east of Newton on Trent	8332	727	9059
A1133 north of North Clifton	3210	336	3547
A1133 south of South Clifton	2979	792	3771
Moor Lane	350	79	429
Roadwood Lane	187	33	220
Main Street south of Ragnall	936	83	1019
Polly Taylor's Road	319	21	340
Crabtree Lane	59	4	63

Future Baseline

12.4.31 Construction of the Proposed Development is assumed to commence in 2027 and is expected to be completed in 2029.

12.4.32 To assess the likely effects during the construction, base year traffic flows were determined by applying a National Road Traffic Forecast (NRTF) low growth factor to the surveyed traffic flows.

12.4.33 The NRTF low growth factor for 2024 to 2027 is 1.019. This factor was applied to the 2024 survey data to estimate the baseline traffic conditions within the peak period of construction traffic deliveries, calculated to be April 2027.

12.4.34 This growth factor has been applied to the survey data to estimate the 2027 Base traffic flows, as shown in **Table 12.5**. This will be used in the traffic impact assessment.

*Table 12.5 **2027 Future Baseline Vehicle Flows***

Link	Car & LGV	HGV	Total Traffic
A57 west of Dunham	8307	881	9188
A57 Dunham	8307	881	9188
A57 east of Newton on Trent	8490	741	9231
A1133 north of North Clifton	3271	343	3614
A1133 south of South Clifton	3036	807	3843
Moor Lane	357	81	437
Roadwood Lane	191	33	224
Main Street south of Ragnall	954	84	1038
Polly Taylor's Road	325	21	346
Crabtree Lane	60	4	64

Sensitive Receptors

12.4.35 A review of sensitive receptors has been undertaken within the study area. **Table 12.6** details the receptors and their sensitivities for use within the following assessment. A justification for the sensitivity has been provided, based upon the details contained in **Table 12.1**.

12.4.36

*Table 12.6 **Receptor Sensitivity***

Receptor	Sensitivity	Reason
Users of the A57	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.
Users of the A1133	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.
Users of Moor Lane	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
Users of Main Street	Low	Where the road has been constructed to accommodate significant HGV composition for the former power station.

Receptor	Sensitivity	Reason
Users of Roadwood Lane	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
Users of Polly Taylor's Road	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
Users of Crabtree Lane	High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs.
Residents along the A57	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Darlton Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.
Dunham Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Residents along the A1133	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents along Main Street	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Residents along Moor Lane	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Users of NCR 647	High – on Polly Taylor's Road and Crabtree Lane only	Minor paths used by walkers, cyclists and horse riders, not constructed to accommodate HGV traffic flows.
PRoW Users	High	Minor paths used by walkers, cyclists and horse riders, not constructed to accommodate HGV traffic flows.
River Users	Negligible	No new over river crossing is provided, so there is no potential impact on boat / vessel users on the River Trent

12.4.37 Based on the IEMA guidelines, the village of Dunham is classed as a sensitive receptor and would be subject to 'Rule 2' of the IEMA Guidelines which requires a full assessment of effects if the traffic count locations are anticipated to be subject to an increase in 10% of total traffic.

12.4.38 All other locations within the study area are subject to 'Rule 1' and are assessed if traffic flows (or HGV flows) on highway links are anticipated to increase by more than 30% as a result of the construction phase of the Proposed Development.

12.4.39 The percentage impact that triggers either of the IEMA Guideline rules is based upon the increase in traffic on a road link, once the peak construction traffic for that road is included.

12.5 Environmental Measures

12.5.1 The following specific environmental measures have been identified and have been considered as part of the assessment. To ensure clarity as to how these Environmental Measures are secured, a Commitments Register has been included within the submission (see **Commitments Register [EN010159/APP/7.15]**).

Construction

12.5.2 Embedded mitigation measures to be used in the construction period will include the following measures:

- Basic construction traffic management measures, including the provision of "Construction Access Ahead" and "Slow Ahead" signage at each access junction;
- Access junctions into the Site, designed in accordance with LCC or NCC standards, depending upon which local authority boundary they are located in;
- The use of a Travel Plan for construction staff, to be included within the contracts to be let for the construction of the Proposed Development;
- The use of Police escorts in the transport of AIL components from the port of Entry, through to the development Site;
- A 'Wear & Tear' agreement to cover sensitive sections of the public road network and the areas around the proposed Site access junction locations; and
- Road cleaning, within 500 m of the proposed Site access junctions.

12.5.3 These measures are included in the outline CTMP (oCTMP) and will be secured by a requirement in the draft Development Consent Order, see **Outline Construction Traffic Management Plan [EN010159/APP/7.9]**.

Operational and Maintenance

12.5.4 Whilst this phase has been scoped out of the assessment, general maintenance of the junction surface and drainage features will be undertaken to ensure that the junction remains in a safe and serviceable condition throughout the lifetime of the Proposed Development.

Decommissioning

12.5.5 The decommissioning phase will need to occur within a maximum of sixty years of the completion of the Proposed Development, expected to be circa 2089. As such, it is not possible or realistic to estimate the baseline or what advances in decommissioning are likely to be available at this point in time.

12.5.6 To ensure a commitment that the transport and access matters will be properly addressed at decommissioning, a Decommissioning Traffic Management Plan (DTMP) will be required and should be secured in the DCO, via the Decommissioning Environmental Management Plan (DEMP).

12.5.7 It is proposed that the DTMP is based upon the measures contained in the oCTMP at present (see **Outline Construction Traffic Management Plan [EN010159/APP/7.9]**.

12.5.8 This document can then be developed to capture the future baseline and best practice measures for recycling redundant solar farm sites at that time. A refreshed traffic impact and additional future mitigation plan can then be developed and implemented, following review by future stakeholders and road authorities.

12.6 Assessment of Likely Significant Effects

Construction

12.6.1 **ES Volume 3, Appendix 12.2: Transport Assessment [EN010159/APP/6.21]**, details the traffic generation associated with the peak of construction associated with the Proposed Development. The resulting traffic flows are summarised in **Table 12.7**.

Table** 12.7 **Construction Peak Period Daily Traffic Flow

Link	Car & LGV	HGV	Total Traffic
A57 west of Dunham	92	289	381
A57 Dunham	37	13	50
A57 east of Newton on Trent	15	20	35
A1133 north of North Clifton	52	34	86
A1133 south of South Clifton	3	199	202
Moor Lane	3	9	12

Link	Car & LGV	HGV	Total Traffic
Roadwood Lane	3	9	12
Main Street south of Ragnall	17	23	40
Polly Taylor's Road	6	8	13
Crabtree Lane	6	8	13

12.6.2 The peak of construction in terms of vehicular movements will be 614 daily journeys (110 Car/Lights and 504 HGV journeys). The application of this data to the future baseline year of 2027 illustrates the likely impact of traffic on the study area network. The impact is summarised in **Table 12.8**.

12.6.3 As can be seen by the profile of construction traffic, presented in **ES Volume 3, Appendix 12.2: Transport Assessment [EN010159/APP/6.21]**, the peak of construction traffic is very pronounced. The average total traffic flow over the full 26 month period is 384 movements. As such, the impact assessment undertaken and presented in the assessment is overly robust.

Table** 12.8 **Percentage Impact Summary

Link	Car & LGV	HGV	Total Traffic
A57 west of Dunham	1.1%	32.8%	4.1%
A57 Dunham	0.4%	1.5%	0.5%
A57 east of Newton on Trent	0.2%	2.7%	0.4%
A1133 north of North Clifton	1.6%	9.9%	2.4%
A1133 south of South Clifton	0.1%	24.7%	5.3%
Moor Lane	0.8%	11.3%	2.7%
Roadwood Lane	1.4%	27.2%	5.3%
Main Street south of Ragnall	1.7%	27.8%	3.8%
Polly Taylor's Road	1.7%	37.2%	3.8%
Crabtree Lane	9.2%	184.8%	20.7%

12.6.4 The highest expected total traffic movement increase occurs on Crabtree Lane, with an overall increase in traffic of 20.7%. This is expected, due to the relatively low baseline traffic flow on the road at present.

12.6.5 None of the other links within the study area experience traffic impacts in excess of 5.3%. This is well below the accepted industry standard estimate of daily traffic flow variation of 10%.

12.6.6 HGV traffic increases on the A57 and A1133 vary between an increase of 1.5% and 32.8%. An increase of HGV traffic on Crabtree Lane of 184.8% is predicted, whilst HGV flows on Polly Taylor's Road are predicted to increase by 37.2%.

12.6.7 It should be noted the construction phase is transitory in nature and the peak of construction activities is short lived, occurring over a relatively short timeframe when taking account of the whole construction programme.

12.6.8 A review of existing theoretical road capacity has been undertaken using "The NESA Manual" formerly part of the Design Manual for Roads and Bridges. The theoretical road capacity has been estimated for each of the road links that make up the study area. The results are summarised in **Table 12.9**.

Table** 12.9 **Theoretical Capacity Review

Link	2027 Total Traffic – Baseline (vehs)	2027 Total Base + Development Traffic (vehs)	Theoretical 12 hour Capacity (vehs)	Spare road Capacity
A57 west of Dunham	9188	9569	28800	66.77%
A57 Dunham	9188	9238	19200	51.89%
A57 east of Newton on Trent	9231	9266	28800	67.83%
A1133 north of North Clifton	3614	3700	21600	82.87%
A1133 south of South Clifton	3843	4045	21600	81.27%
Moor Lane	437	449	19200	97.66%
Roadwood Lane	224	236	19200	98.77%
Main Street south of Ragnall	1038	1078	19200	94.39%
Polly Taylor's Road	346	359	19200	98.13%

Link	2027 Total Traffic – Baseline (vehs)	2027 Total Base + Development Traffic (vehs)	Theoretical 12 hour Capacity (vehs)	Spare road Capacity
Crabtree Lane	64	77	3360	97.69%

12.6.9 There are no road link capacity issues noted in the study area.

12.6.10 In line with the IEMA guidelines, the following receptors are considered to trigger the requirement for a detailed assessment of likely significant effects. These are:

- Darlton Residents;
- Users of the A57 West of Dunham;
- Residents living along the A57 west of Dunham;
- Users of Polly Taylor's Road;
- Users of Crabtree Lane / Users of NCR 647 on Crabtree Lane; and
- PRoW Users.

12.6.11 PRoW users are automatically assumed to be impacted given that construction activities and traffic may affect current routes.

12.6.12 It should be noted that the likely effects relate solely to the peak month of construction activities and that the construction period is temporary and the effects transitory in nature.

12.6.13 The significance of the likely effects on the above receptors has been determined using the rules and thresholds previously outlined in the Assessing Significance section (see **Table 12.3**). **Table 12.10** summarises the significance on the receptors for the construction phase prior to additional mitigation measures being applied, but with the embedded measures (Para. 12.5.1 included).

Table** 12.10 **Construction Phase Effects Summary

Receptors	Potential Effect	Magnitude of Effect	Significance of Effect	Comment
Darlton Residents (Low Sensitivity)	Severance	Minor	Minor (Not Significant)	The potential increases in traffic (total flows and HGV flows) are unlikely to have a severance effect.

Receptors	Potential Effect	Magnitude of Effect	Significance of Effect	Comment
	Driver Delay	Minor	Minor (Not Significant)	There is spare capacity along the existing link road, therefore the effect on driver delay is considered minor.
	Pedestrian Delay	Minor	Minor (Not Significant)	The potential increases in traffic will not have a noticeable effect.
	Non-motorised User (NMU) Amenity	Minor	Minor (Not Significant)	The potential increase in HGV traffic is insufficient to result in significant effects.
	Fear & Intimidation	Minor	Minor (Not Significant)	The total increase in traffic flow is minor.
	Road Safety	Minor	Minor (Not Significant)	There are no existing clusters of accidents in Darlton and the increase in traffic is low.
	Large Loads	Minor	Minor (Not Significant)	Whilst AIL traffic will pass through the village, this is restricted to effects on up to three days only, with traffic not requiring any specific measures to pass through.
Users of the A57 West of Dunham (Low Sensitivity)	Severance	Minor	Minor (Not Significant)	The potential increases in traffic (total flows and HGV flows) are unlikely to have a severance effect.
	Driver Delay	Minor	Minor (Not Significant)	There is spare capacity along the existing link road, therefore the effect on driver delay is considered minor.
	Pedestrian Delay	Minor	Minor (Not Significant)	There are no continuous pedestrian facilities located along the road within the Study area (outwith the settlements), therefore the effect on pedestrian delay is considered minor.
	Non-motorised User (NMU) Amenity	Minor	Minor (Not Significant)	The potential increase in HGV traffic is insufficient to result in significant effects.

Receptors	Potential Effect	Magnitude of Effect	Significance of Effect	Comment
	Fear & Intimidation	Minor	Minor (Not Significant)	The total increase in traffic flow is minor.
	Road Safety	Minor	Minor (Not Significant)	There are no existing clusters of accidents and the increase in traffic is low.
	Large Loads	Minor	Minor (Not Significant)	Whilst AIL traffic will pass through the village, this is restricted to effects on up to three days only, with traffic not requiring any specific measures to pass through.
Residents living along the A57 west of Dunham (Negligible Sensitivity)	Severance	Minor	Negligible (Not Significant)	The potential increases in traffic (total flows and HGV flows) are unlikely to have a severance effect.
	Driver Delay	Minor	Negligible (Not Significant)	There is spare capacity along the existing link road, therefore the effect on driver delay is considered minor.
	Pedestrian Delay	Minor	Negligible (Not Significant)	There are no continuous pedestrian facilities located along the road within the Study area (outwith the settlements), therefore the effect on pedestrian delay is considered minor.
	Non-motorised User (NMU) Amenity	Minor	Minor (Not Significant)	The potential increase in HGV traffic is insufficient to result in significant effects.
	Fear & Intimidation	Minor	Negligible (Not Significant)	The total increase in traffic flow is minor.
	Road Safety	Minor	Minor (Not Significant)	There are no existing clusters of accidents and the increase in traffic is low.
	Large Loads	Minor	Minor (Not Significant)	Whilst AIL traffic will pass through the village, this is restricted to effects on up to three days only, with traffic not requiring any specific measures to pass through.

Receptors	Potential Effect	Magnitude of Effect	Significance of Effect	Comment
Users of Polly Taylor's Road / Users of NCR 647 (High Sensitivity)	Severance	Negligible	Negligible (Not Significant)	The road is minor in mature and the proposed traffic volume would not sever links.
	Driver Delay	Minor	Minor (Not Significant)	There is spare capacity along the existing link road, therefore the effect on driver delay is considered minor.
	Pedestrian Delay	Minor	Minor (Not Significant)	There are no pedestrian facilities located along the road within the Study area, therefore the effect on pedestrian delay is considered minor.
	Non-motorised User (NMU) Amenity	Minor	Moderate (Significant)	The total increase in traffic flow is minor, however an increase in HGV traffic is predicted which can be intimidating for NMU.
	Fear & Intimidation	Moderate	Moderate (Significant)	The total increase in traffic flow is minor, however an increase in HGV traffic is predicted.
	Road Safety	Minor	Moderate (Significant)	There is potential to impact the safety of the users of the NCR interacting with construction delivery vehicles. The effect is therefore considered moderate.
	Large Loads	Negligible	Negligible	No AIL are using this section of the network.
Users of Crabtree Lane / Users of NCR 647 on Crabtree Lane (High Sensitivity)	Severance	Negligible	Negligible (Not Significant)	The road is minor and the proposed traffic volume would not sever links.
	Driver Delay	Minor	Minor (Not Significant)	There is spare capacity along the existing link road, therefore the effect on driver delay is considered minor.

Receptors	Potential Effect	Magnitude of Effect	Significance of Effect	Comment
	Pedestrian Delay	Minor	Minor (Not Significant)	There are no pedestrian facilities located along the road within the Study area, therefore the effect on pedestrian delay is considered minor.
	Non-motorised User (NMU) Amenity	Minor	Moderate (Significant)	The total increase in traffic flow is minor, however an increase in HGV traffic is predicted which can be intimidating for NMU.
	Fear & Intimidation	Moderate	Moderate (Significant)	The total increase in traffic flow is minor, however an increase in HGV traffic is predicted.
	Road Safety	Minor	Moderate (Significant)	There is potential to impact the safety of the users of the NCR interacting with construction delivery vehicles. The effect is therefore considered moderate.
	Large Loads	Negligible	Negligible	No AIL are using this section of the network.
PRoW Users (High Sensitivity)	Severance	Major	Major (Significant)	The presence of construction traffic within the Order Limits where there was previously no traffic will lead to severance of some of the PRoW network.
	Driver Delay	Negligible	Negligible (Not Significant)	Negligible
	Pedestrian Delay	Moderate	Major / Moderate (Significant)	Pedestrians could experience delays if their movements interact with construction traffic along the PRoW network which would not be experienced prior to the construction period.

Receptors	Potential Effect	Magnitude of Effect	Significance of Effect	Comment
	Non-motorised User Amenity	Moderate	Major / Moderate (Significant)	NMU could experience delays if their movements interact with construction traffic along the PRoW network which would not be experienced prior to the construction period.
	Fear & Intimidation	Major	Major (Significant)	The presence of traffic flows along a location, where there would have been no traffic prior to the construction phase could cause fear and intimidation of the PRoW network for users.
	Road Safety	Moderate	Major / Moderate (Significant)	There is potential to impact the safety of the PRoW users interacting with construction delivery vehicles.
	Large Loads	Major	Major / Moderate (Significant)	There is some potential to impact the safety of the PRoW users interacting with AIL delivery vehicles near the proposed substations locations only.

12.6.14 The effects have been undertaken on the basis that the embedded mitigation measures (Paragraph 12.5.1) have been included.

12.6.15 It should be noted that the effects relate solely to the peak of construction activities and that the construction period is short lived and the effects transitory in nature. Significant effects are predicted on Users of Crabtree Lane, Polly Taylor's Road and Main Street (south of Ragnall) as well as for PRoW users. Additional mitigation will therefore be required and for the avoidance of doubt, these measures will also apply to the wider Study area to provide betterment to all users and residents affected by construction traffic.

Additional Mitigation

12.6.16 To address the potential impact on these users, mitigation is proposed. These measures are detailed in the outline CTMP (oCTMP – the finalised CTMP to be agreed with all stakeholders prior to works commencing on Site and secured through the Development Consent Order), appended to the Transport Assessment contained in the **Outline Construction Traffic Management Plan [EN010159/APP/7.9]**.

12.6.17 The oCTMP includes a variety of measures to address traffic management, including:

- Approved construction access routes;
- Routes barred for construction traffic;
- Timing for construction traffic on the network;
- The creation of a Traffic Management Group to act as a liaison between the developer and local community;
- Contractor Selection including the requirements to adhere to the Considerate Constructors Scheme (CCS) and Construction Logistics and Community Safety (CLOCS) best practice guidance;
- General traffic management requirements;
- Road signage measures;
- HGV vehicle requirements including identify requirements and data logging;
- A Wear & Tear Agreement with both local highway authorities;
- Staff Travel Plan;
- AIL Traffic Management Plan;
- Onsite Access Management Plan;
- CTMP management protocol and complaints process, including response times and commitments; and
- A liaison process with other future consented projects that may share the access routes.

12.6.18 A framework Onsite Access Management Plan (OAMP) is also proposed and included in the oCTMP and will be secured thorough the DCO. During construction it will be necessary to temporarily divert PRoW. Within the OAMP, consideration will be given to pedestrians, cyclists and horse riders alike due to potential interactions between construction traffic and users of the PRoW, bridleway and path network during the construction phase. Appropriate measures will be formulated into an Onsite Access Management Plan, incorporated into the oCTMP.

12.6.19 The Principal Contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important at crossing points. Advisory speed limit signage will also be installed on approaches to areas where path users may interact with construction traffic.

12.6.20 Signage will be installed across the Order Limits that makes drivers aware of local speed limits and reminding drivers of the potential presence of pedestrians,

cyclists and equestrians. This will also be emphasised in weekly toolbox talks for construction staff and delivery drivers.

12.6.21 Users of the PRoW will be separated from construction traffic using barriers (where permitted and appropriate) which will ensure that safe access to the Order Limits for recreational purposes will be maintained. Crossing points will be provided where required, with path users having right of way and diversions will be provided where necessary.

12.6.22 Appropriate and compliant temporary road signage would be provided to assist at these crossings for the benefit of all users.

12.6.23 The British Horse Society generally recommends in the interactions between HGV traffic and horses state that horses are normally nervous of large vehicles, particularly when they do not often meet them. Horses are flighty animals and will run away in panic if really frightened. Riders will do all they can to prevent this but, should it happen, it could cause a serious accident for other road users, as well as for the horse and rider.

12.6.24 The main factors causing fear in horses in this situation are:

- something approaching them, which is unfamiliar and intimidating;
- a large moving object, especially if it is noisy;
- lack of space between the horse and the vehicle;
- the sound of air brakes; and
- anxiety on the part of the rider.

12.6.25 The British Horse Society generally notes the following actions that will be included in the CTMP training for all HGV staff:

- On seeing riders approaching, drivers must slow down and stop, minimising the sound of air brakes, if possible.
- If the horse still shows signs of nervousness while approaching the vehicle, the engine should be shut down (if it is safe to do so).
- The vehicle should not move off until the riders are well clear of the back of the HGV.
- If drivers are wishing to overtake riders, please approach slowly or even stop to give riders time to find a gateway or lay by where they can take refuge and create sufficient space between the horse and the vehicle. Because of the position of their eyes, horses are very aware of things coming up behind them.

- All drivers delivering to the Order Limits must be patient. Riders will be doing their best to reassure their horses while often feeling a high degree of anxiety themselves.

12.6.26 Discussions with local equestrian groups can be held during the construction period to keep riders informed of works and activities. These discussions will also allow the contractors to tailor their toolbox talks to specific equestrian issues.

12.6.27 For decommissioning, a Decommissioning Traffic Management Plan (DTMP) will be developed. This document will be similar to the oCTMP but will cater for the future road network conditions (see **Outline Construction Traffic Management Plan [EN010159/APP/7.9]**).

12.6.28 The oCTMP and DTMP would be secured via the DCO.

12.6.29 Upon the application of the proposed mitigation (embedded and additional measures) measures described above, it is predicted that the transport effects associated during the construction phase would be as noted in **Table 12.11**.

Table 12.11 Effects Summary following Construction Phase Mitigation

Receptor	Effects Prior to Mitigation	Residual Significance	Effect Duration
Users of Main Street (South of Ragnall) - section of NCR 647 (Low Sensitivity)	Significant: Non-motorised User (NMU) Amenity and Fear & Intimidation	Negligible, not significant	Temporary during construction
Users of Polly Taylor's Road / Users of NCR 647 (High Sensitivity)	Significant: Non-motorised User (NMU) Amenity, Fear & Intimidation and Road Safety	Negligible, not significant	Temporary during construction
Users of Crabtree Lane / Users of NCR 647 on Crabtree Lane (High Sensitivity)	Significant: Non-motorised User (NMU) Amenity, Fear & Intimidation and Road Safety	Negligible, not significant	Temporary during construction
PRoW Users (High Sensitivity)	Significant: Severance, Pedestrian Delay, Non-motorised User Amenity, Fear & Intimidation, Road Safety and Large Loads	Negligible, not significant	Temporary during construction

Operational and Maintenance

12.6.30 No assessment of operational effects has been undertaken, given the low level of traffic associated with this phase.

Decommissioning

12.6.31 The decommissioning phase will result in fewer traffic movements than the construction phase, as the majority of underground elements, mitigation planting, footpath improvements and other elements of infrastructure are likely to remain at the Site, following the demolition of the Proposed Development.

12.6.32 The growth of background traffic created through wider development in the area in future years, will increase the baseline traffic flows. With a larger baseline and smaller development traffic generation, the potential traffic impact is therefore considered to be below that reported for the construction phase.

12.6.33 No assessment of the decommissioning phase has been undertaken, given the uncertainty of the future baseline and the reduced traffic generation associated with this phase. The effects however are expected to be similar or less to those associated with the construction phase and these are suggested as a suitable proxy, assuming that there is no significant change in traffic flows, infrastructure or decommissioning processes.

12.7 Summary

12.7.1 Baseline traffic data has been collected to establish a base point for determining the impact during the construction phase of the Proposed Development and has been factored to future levels to help determine the effect of construction traffic on the local road network.

12.7.2 The construction traffic would result in a temporary increase in traffic flows on the road network surrounding the Proposed Development. The peak of construction in terms of vehicular movements will be 614 daily journeys (120 Car/Lights and 504 HGV journeys).

12.7.3 The profile of construction traffic illustrates that the peak in traffic flows is very pronounced. The average total traffic flow over the full 26 month period is 384 movements. As such, the impact assessment undertaken and presented in the TA is overly robust.

12.7.4 A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of the construction, operational and decommissioning phase traffic flows. It is proposed that these can be secured by the DCO.

12.7.5 No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Development. The effects of construction traffic are temporary in nature and are transitory.

12.7.6 **Table 12.12** sets out a summary of the likely significant environmental effects considered.

Table** 12.12 **Summary of Significant Environmental Effects

Receptor	Mitigation Measures	Description of the Effect	Direct / Indirect	Duration	Geographic Scale	Nature of Effect	Significant / Not Significant	Mechanism
Construction								
Users of Polly Taylor's Road / Users of NCR 647 (High Sensitivity)	oCTMP, AIL Transport Management Plan	Non-motorised User (NMU) Amenity, Fear & Intimidation and Road Safety	Direct	Short Term	Local	Negligible	Not Significant	Approval of CTMP and AIL Transport Management Plan with local authorities
Users of Crabtree Lane / Users of NCR 647 on Crabtree Lane (High Sensitivity)	oCTMP, AIL Transport Management Plan	Non-motorised User (NMU) Amenity, Fear & Intimidation and Road Safety	Direct	Short Term	Local	Negligible	Not Significant	Approval of CTMP and AIL Transport Management Plan with local authorities
PRoW Users	oCTMP, AIL Transport Management Plan	Severance, Pedestrian Delay, Non-motorised User Amenity, Fear & Intimidation, Road Safety and Large Loads	Direct	Short Term	Local	Negligible	Not Significant	Approval of CTMP and AIL Transport Management Plan with local authorities
Operation								
None	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Receptor	Mitigation Measures	Description of the Effect	Direct / Indirect	Duration	Geographic Scale	Nature of Effect	Significant / Not Significant	Mechanism
Decommissioning								
Future Road Users	DTMP, AIL Transport Management Plan	Non-motorised User (NMU) Amenity, Fear & Intimidation and Road Safety	Direct	Short Term	Local	Negligible	Not Significant	Approval of DTMP and AIL Transport Management Plan with local authorities
Future PRoW Users	DTMP, AIL Transport Management Plan	Severance, Pedestrian Delay, Non-motorised User Amenity, Fear & Intimidation, Road Safety and Large Loads	Direct	Short Term	Local	Negligible	Not Significant	Approval of DTMP and AIL Transport Management Plan with local authorities

one earth

solar farm