

# Cottam Solar Project

## Environmental Statement: Chapter 14: Transport and Access

Prepared by: Transport Planning Associates  
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## Issue Sheet

**Report Prepared for: Cottam Solar Project Ltd.  
DCO Submission**

### **Environmental Statement Chapter 14: Transport and Access**

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## **14 Transport and Access**

### **14.1 Introduction**

- 14.1.1 This chapter of the Environmental Statement (ES) reports the findings of the likely significant effects on Transport and Access as a result of the Scheme.
- 14.1.2 The chapter has been prepared by Transport Planning Associates (TPA). TPA is a corporate partner of the Chartered Institution of Highways and Transportation (CIHT) (see Statement of Competence **[EN010133/APP/C6.3.1.1]**).
- 14.1.3 Solar farm developments do not generate significant traffic flows once operational. Typically, there will be only a handful of trips per month by Transit Van (or similar) for maintenance purposes (less than one vehicle trip per day on average). Therefore, all operational effects are negligible in significance. In addition, it is not anticipated that the effects associated with decommissioning will be worse than during the construction phase. Therefore, the focus of this chapter is on the construction phase.
- 14.1.4 This ES Chapter assesses the Transport and Access Effects of Cottam 1, 2, 3a and 3b and the Cable Route Corridor separately. The Cable Route Corridor is considered separately as the effects are more temporary in nature (just 90 working days per access). Further information is set out at Section 14.7.
- 14.1.5 This chapter is not intended to be read as a standalone assessment and, where relevant, cross references are included to other chapters within this ES chapter. In addition, this chapter should be read in conjunction with:
- The Transport Statement, shown in **Appendix 14.1 [EN010133/APP/C6.3.14.1]**; and
  - The Outline Construction Traffic Management Plan (CTMP) shown in **Appendix 14.2 [EN010133/APP/C6.3.14.2]**.
  - The Outline Public Right of Way Management Plan, **Appendix 14.3 [EN010133/APP/C6.3.14.3]**.

### **14.2 Consultation**

- 14.2.1 An Environmental Impact Assessment (EIA) Scoping Report was submitted to the Secretary of State for Business, Energy and Industrial Strategy in January 2022, with a Scoping Opinion adopted by the Planning Inspectorate on behalf of the Secretary of State in March 2022. In addition, a Preliminary Environmental Information Report (PEIR) was prepared and issued in conjunction with the Applicant's Section 42 statutory consultation undertaken in July 2022.
- 14.2.2 Separately, a Transport Scoping Note has been submitted to Lincolnshire County Council. A meeting was held with officers at Lincolnshire County Council to discuss the proposals on 22<sup>nd</sup> April 2022.
- 14.2.3 Section 42 consultation responses from local stakeholders have also been received.

14.2.4 Table 14.1 provides a summary of the transport and access related comments made by relevant stakeholders and how these responses have been addressed in this ES.

**Table 14.1: Summary of Consultation**

Consultee	Comments / Matters Raised	Response / Matters Addressed
<b>EIA Scoping Opinion</b>		
The Planning Inspectorate (1)	"The Applicant proposes to scope out effects during the operational phase as "there are anticipated to be only a handful of visits to the site per month by vehicle for maintenance". The number of movements required either for each solar array site or the Proposed Development as a whole are not quantified".	Operational phase movements are quantified in this ES Chapter. On average, there will be less than one visit per day per Site for the duration of the operational period.
The Planning Inspectorate (2)	"Scoping Report paragraph 14.4.2 states that further detail to support this will be provided in the ES. The Inspectorate agrees to scope this matter out subject to confirmation that the frequency and type of maintenance visits and vehicles, with reference to relevant thresholds (e.g. as set out in the Guidelines for Environmental Assessment of Road Traffic, 1993) would not give rise to a significant effect, taking account of any potential cumulative traffic effects".	Operational phase movements are quantified in this ES Chapter at paragraph 14.7.70. There will be less than one per day per Site, which will not give rise to any significant effects, in line with the relevant thresholds set out in Guidelines for Environmental Assessment of Road Traffic, 1993.
The Planning Inspectorate (3)	"The Scoping Report states that "the majority of the non-local workforce will stay at local accommodation and be transported to the site by minibuses to minimise the impact on the strategic and local highway network". No indication is given of the expected total workforce during construction, consequently it is unclear what the impact of the traffic	Information on the workforce is provided in this ES Chapter at paragraph 14.7.9.

Consultee	Comments / Matters Raised	Response / Matters Addressed
	<p>movements associated with the local workforce will be.</p> <p>The ES should quantify the number of construction workers and vehicle movements required and explain, with reference to relevant thresholds, whether this is likely to result in significant traffic effects”</p>	
The Planning Inspectorate (4)	<p>“The Proposed Development site will affect a number of PRoW but no surveys are proposed to understand the baseline use of these PROWs.</p> <p>Surveys should be undertaken to provide baseline data in relation to the use of the PROWs affected by the site, where appropriate, to define the change in characteristics of tourism and recreational use of PRoW as is required to define receptor sensitivity in Table 21.3 and the magnitude of change in Table 21.4”.</p>	<p>Information on the PRoWs that are affected by the Scheme is provided in this ES Chapter at paragraph 14.5.8. Surveys have been undertaken for a selection of PROWs. These are set out in Table 14.6</p>
The Planning Inspectorate (5)	<p>“The Inspectorate would expect to see a Decommissioning Plan, agreed with the Local Authority, secured through the inclusion of an Outline Decommissioning Plan or similar with the Application. The ES should clearly set out if and how decommissioning is to be assessed and any components which may remain following decommissioning”.</p>	<p>Decommissioning effects are considered in this assessment. The transport and access effects are likely to be equal, or less than the construction phase.</p> <p>The measures set out within the Outline CTMP are anticipated to be similar to that required for the decommissioning phase.</p> <p>An Outline Decommissioning Plan <b>[EN010133/APP/APP/C7.2]</b> has been submitted with the DCO application and will be secured through a Requirement in the DCO.</p>
The Planning Inspectorate (6)	<p>“Scoping Report Figures 14.1 and 14.2 demonstrate that accesses</p>	<p>Weight restrictions have been considered. Where weight</p>

Consultee	Comments / Matters Raised	Response / Matters Addressed
	to Cottam one are mostly off rural roads e.g. Stow Lane; many of which are subject to weight restrictions. The ES should take account of such restrictions in the baseline description and choice of construction traffic routes, assessing any significant impacts where relevant”.	restrictions are present, they allow for access.
Nottinghamshire County Council (1)	“The EIASR confirms that a Transport Assessment (TA), Construction Traffic Management Plan (CTMP), and a Construction Environment Management Plan will form part of the Environmental Impact Assessment to be submitted in support of the proposal. The scope of the TA and CTMP will include the GCC. The CTMP should also include a chapter on construction worker travel patterns and measures to encourage travel by alternative modes to single occupancy vehicle”.	Construction worker travel patterns are included with this ES Chapter at paragraph 14.7.9 and are within the TA.
Nottinghamshire County Council (2)	“The Transport Assessment (TA) methodology will be based on the Guidance for Transport Assessments (GTA), 2007. Although this has been archived, the methodology in the GTA complies with National Planning Practice Guidance and is therefore considered to be acceptable. The scope of the TA should include all main junctions within Nottinghamshire that would ‘that would be likely to experience an increase in traffic greater than 30 two-way peak hour movements (based on passenger car units (PCU))”.	There will not be an increase in traffic greater than 30 two-way peak hour movements at a single junction during the construction phase or the operational phase. Information on traffic flows associated with the construction phase are set out in this ES chapter at paragraph 14.7.4.

Consultee	Comments / Matters Raised	Response / Matters Addressed
Nottinghamshire County Council (3)	<p>“It is crucial that a full analysis of any affected public rights of ways is undertaken once the cabling routes are known. If temporary closures are necessary during the construction phase it is requested that these closures, wherever practicable, are employed sensitively to optimise the connectivity of the wider PROW network. In order to fully consider the PROW network and the impact of the proposal on the network, the applicant should undertake a full assessment of the PROW network and apply for a search of the Definitive Map for Public Rights of Way. The Nottinghamshire County Council Rights of Way team would welcome discussions regarding the enhancement and improvements to the Public Rights of Way network”.</p>	<p>Information on the PRoWs that are affected by the Scheme is provided in this ES Chapter at paragraph 14.5.8 and the Outline Public Rights of Way Management Plan in Appendix 14.3.</p>
Canal and River Trust (1)	<p>“The River Trent is a commercial waterway, where the transport of equipment may be possible which could help to minimise the need to utilise the Highway Network. We advise that the use of the Trent should be included within the Transport and Access chapter, so as to ensure that every possibility to reduce the impact on highway is considered”.</p>	<p>Use of the river will be considered where appropriate. However, in all cases, the ‘final leg’ of deliveries will be undertaken by the roads set out in the study area.</p> <p>For example, larger equipment, such as transformers, will be transported to Immingham Docks. The final leg of the delivery will be via the strategic and local highway network. This is set out in the Outline CTMP at Appendix 14.2.</p>
Network Rail (1)	<p>“With reference to the protection of the railway, the Environmental Statement should consider any impact of the scheme upon the railway infrastructure and upon operational railway safety. In</p>	<p>Glint and Glare assessment <b>[EN010133APP/C6.2.16]</b> has been included as part of the ES. The Transport Assessment at Appendix 14.1 identifies the haulage route, including any rail</p>



Consultee	Comments / Matters Raised	Response / Matters Addressed
	<p>particular, it should include a Glint and Glare study assessing the impact of the scheme upon train drivers (including distraction from glare and potential for conflict with railway signals). It should also include a Transport Assessment to identify any HGV traffic/haulage routes that may utilise railway assets such as bridges and level crossings during the construction and operation of the site”.</p>	<p>infrastructure that will be used. A small number of vehicles will travel over the A1500 level crossing, and a under the Station Road railway bridge. All restrictions will be complied with.</p>
<p>North Lincolnshire Council (1)</p>	<p>“Having considered Chapter 14 of the EIASR, it is noted that the likely residual effects would be negligible. The proposed site is located in Lincolnshire and as such NLC do not envisage the proposals have a significant impact on the highway network in North Lincolnshire. Therefore, NLC do not have any objections to the approach set out in the EIASR at this stage”.</p>	<p>Noted and Agreed</p>
<p>Sturton by Stow Parish Council</p>	<p>“Ingham Road has a weight limit of 7.5t therefore problems are likely with the road structure - the crane that went into the ditch caused many problems”.</p>	<p>Weight restriction state that the weight limit is 7.5t"except for access". Therefore, it is likely that this is an environmental weight limit rather than a structural weight limit. Vehicles over 7.5t are permitted to use Ingham Road for access to the Site.</p>
<p>Environmental Hazards and Emergencies Department</p>	<p>“It is noted that the IEMA GEART guidelines are to be used and as such the operational phase is to be scoped out. The remainder of the traffic and transport assessment should consider impacts on pedestrians, cyclists and any horse riding activities”.</p>	<p>Noted</p>

Consultee	Comments / Matters Raised	Response / Matters Addressed
West Lindsey District Council	"Cumulative impacts (14.7.24) should include the Gate Burton Solar Project".	Cumulative effects are set out in this ES Chapter at Section 14.9.
West Lindsey District Council	"We note the low movements that would be generated during the operational phase, and do not object to this being 'scoped out".	Noted
<b>Transport Scoping Report and Meetings</b>		
Lincolnshire County Council	<p>Meeting note (Email TPA to LCC – 22<sup>nd</sup> April 2022):</p> <p>"From your very initial review, it is understood that the construction vehicle routes and accesses that we are proposing are appropriate, and the construction vehicle trip generation is unlikely to cause any capacity issues. However, you would like the Construction Traffic Management Plan (CTMP) to include measures to prevent construction vehicle movements during the peak hours (08:00-09:00 and 17:00-18:00), which we will incorporate. You would also like to see a cumulative assessment that considers all proposals in the area. This is being undertaken, and will be included in the Environmental Statement and Transport Assessment".</p>	<p>Construction vehicle trips to be coordinated to avoid movement during the peak hours. This will be secured through the Outline CTMP, set out at Appendix 14.2;</p> <p>Cumulative assessment undertaken at Section 14.9 of this Chapter.</p>
<b>Section 42 Responses</b>		
Lincolnshire County Council	"Chapter 14 Transport and Access-the assessment included in this chapter is acceptable, it is based on reasonable assumptions of trip rates, construction duration and route assignment. The results show that the predicted	Noted

Consultee	Comments / Matters Raised	Response / Matters Addressed
	<p>construction traffic would not cause capacity problems on the local highway network, it is noted that some routes will experience large percentage increases in HGV movements (&gt;100%) however these are currently very low trafficked routes. Details of access arrangements, swept paths, parking, storage and plant areas and a Travel Plan for construction staff are proposed to be provided in a Construction Management Traffic Plan”.</p>	
<p>Network Rail</p>	<p>“In addition, the routing of construction traffic (including HGVs/abnormal loads) and subsequent operational site traffic will require further consideration and discussion with Network Rail if it such routes take in railway assets such as bridges (with low clearance/weight restrictions) and railway level crossings”</p>	<p>The Transport Assessment at Appendix 14.1 identifies the haulage route, including any rail infrastructure that will be used. A small number of vehicles will travel over the A1500 level crossing, and a under the Station Road railway bridge. All restrictions will be complied with</p>
<p>National Highways</p>	<p>“We would like to seek further clarification on the methodology used to inform the construction trip generation and trip distribution, specifically how construction traffic will be distributed across the SRN. Based on this information we will have a better understanding of the likely impacts of construction traffic on the SRN and whether further assessments (including a cumulative impact assessment to include other sites) will be required”.</p>	<p>Construction trip generation has been provided by the Applicant based on the equipment requirements and their experience. This is set out in detail in Table 14.13 and with the CTMP at Appendix 14.2.</p> <p>Construction traffic will be spread out throughout the day, and will be coordinated, where possible, to avoid the network peak hours. Therefore, the effect of construction traffic on the Strategic Road Network (SRN) within the local proximity of the Site will be limited.</p>

Consultee	Comments / Matters Raised	Response / Matters Addressed
National Highways	"As outlined in the PEIR, it is anticipated the operation of the Cottam site will not generate any significant vehicle flows, approximately less than one vehicle per day on average. We can accept these assumptions and agree that no additional assessment or mitigation is required with respect of the operational phase of the site".	Noted
Royal Mail	"Whilst Royal Mail does not consider that the proposed Solar Park itself will impact upon its operational interests, the cumulative impact of this development and those in the vicinity that are of concern. Every day, in exercising its statutory duties Royal Mail vehicles use all of the main roads that may potentially be affected by the proposed Cottam Solar Park and surrounding developments. These include: • West Burton Solar Park • Gate Burton Energy Park • EDF West Burton C • Decommissioning of West Burton A • Saxilby Heights • Development at Land off Sturton Road • Blyton Driving Centre • Wood Lane Solar Farm"	A cumulative assessment has been undertaken as part of this ES Chapter at Section 14.9
Royal Mail	"Royal Mail therefore requests that the forecasted traffic flows in the PEIR be updated to reflect up to date data of cumulative impacts of nearby developments. Royal Mail wishes to reserve its position to submit a consultation response/s later in the DCO consenting process when sufficient information is available".	Traffic flows associated with the Scheme, as well as a cumulative assessment are included in this ES Chapter at Section 14.7 and Section 14.9.

Consultee	Comments / Matters Raised	Response / Matters Addressed
Nottinghamshire County Council	"The Transport Team have no comments to make on the application as the site lies outside of the Nottinghamshire County boundary"	Noted
West Lindsey District Council	"The preliminary findings, and expected trip generation figures are noted. It is noted that a minor adverse effect on pedestrian amenity is expected, to be managed through a Construction Traffic Management Plan (CTMP)".	Minor adverse effect on pedestrian amenity is expected in localised areas around public rights of way. These will be managed through the CTMP, set out in Appendix 14.2.
Stow Parish Council	Use of the Green Lane from Ingham Road for construction traffic	Following feedback received during consultation, the use of this Green Lane for construction vehicles is no longer part of the Scheme.
Stow Parish Council	Use of local roads for construction traffic	Swept Path Analysis of the routes has been undertaken. This is shown in the Transport Assessment at Appendix 14.1. In addition, the proposals have been discussed with the local highway authority. All construction vehicle movement will be managed by the CTMP, shown in Appendix 14.2.  A noise and vibration assessment is included at Chapter 15 of this ES
Stow Parish Council	Use of Stow Lane for construction traffic	The weight limit on Stow Lane allows for access.  Passing bays are provided for within the narrower sections of Stow Lane.  The Applicant will undertake a road condition survey pre and post construction, and will commit to remediating any damage to the local highway that can be attributed to the

Consultee	Comments / Matters Raised	Response / Matters Addressed
		construction of the Scheme. This will be secured through the Outline CTMP, set out at Appendix 14.2;

### 14.3 Policy Context

14.3.1 This Chapter of the ES has been prepared with consideration to ‘Guidance on Transport Assessments’, prepared by the Department for Transport (DfT) in March 2007 (which is now archived but still considered relevant), ‘Guidelines for the Environmental Assessment for Road Traffic’, Institute of Environmental Management and Assessment (IEMA Guidelines) and the ‘Design Manual for Roads and Bridges (DMRB)’, National Highways.

14.3.2 The proposals have also been considered in the context of the following documents:

- National Policy Statement EN-1 (adopted);
- National Policy Statement EN-1 (emerging);
- National Policy Statement EN-3 (adopted);
- National Policy Statement EN-3 (emerging);
- National Policy Statement EN-5 (adopted);
- National Policy Statement EN-5 (emerging);
- National Planning Policy Framework; and
- Central Lincolnshire Local Plan (2017), which covers the West Lindsey District.

[National Policy Statement EN-1, EN-3 and EN-5 \(Adopted\)](#)

14.3.3 National Planning Policy Statement (NPS) EN-1 is the overarching policy statement for Energy. NPS EN-3 is focused on Renewable Energy and NPS EN-5 is focused on Electricity Network Infrastructure.

14.3.4 Section 5.13.2 of NPS EN-1 states that *“the consideration and mitigation of transport impacts is an essential part of Government’s wider policy objectives for sustainable development”*.

14.3.5 Paragraph 5.13.3 of NPS EN-1 states that *“if a project is likely to have significant transport implications, the applicant’s ES should include a transport assessment”*

[National Policy Statement EN-1 \(Emerging\)](#)

14.3.6 Section 5.14 of the emerging NPS EN-1 relates to the traffic and transport effects of Electricity Network Infrastructure. It states that, *“the transport of materials, goods and*

*personnel to and from a development during all project phases can have a variety of impacts on the surrounding transport infrastructure and potentially on connecting transport networks, for example through increased congestion. Impacts may include economic, social and environmental effects. Environmental impacts may result particularly from increases in noise and emissions from road transport. Disturbance caused by traffic and abnormal loads generated during the construction phase will depend on the scale and type of the proposal".*

14.3.7 For the Applicant's Assessment, the emerging NPS EN-1 states that, *"if a project is likely to have significant transport implications, the applicant's ES (see Section 4.2) should include a transport assessment, using the NATA/WebTAG127 methodology stipulated in Department for Transport DfT) guidance, or any successor to such methodology. Applicants should consult the Highways England and Highways Authorities as appropriate on the assessment and mitigation"*.

14.3.8 With regards to decisions, the emerging NPS EN-1 states that, *"The Secretary of State should only consider preventing or refusing development on highways grounds if there would be an unacceptable impact on highway safety, or residual cumulative impacts on the road network would be severe"*.

National Policy Statement EN-3 (Emerging)

14.3.9 Section 2.54 of the emerging NPS EN-3 relates to construction traffic impacts in relation to solar photovoltaic developments. It states that, *"many solar farms will be sited in areas served by a minor road network. Modern solar farms are large sites that are mainly comprised of small structures that can be transported separately and constructed on-site. It is likely that applicants will designate a construction compound on-site for the delivery and assemblage of the necessary components. Traffic is likely to involve smaller vehicles than typical onshore energy infrastructure but may be more voluminous. It is important that all sections of roads and bridges on the proposed delivery route can accommodate the weight and volume of the loads"*.

14.3.10 For the Applicant's Assessment, the emerging NPS EN-3 states that, *"the applicant should assess whether the access roads are suitable for the transportation of components which will include whether they are sufficiently wide for the proposed vehicles, or bridges sufficiently strong for the heavier components to be transported to the site. It is unlikely that sections of the route will require modification to allow for the transportation of components to the site, given the nature of solar developments, but any potential modifications should be identified, and potential effects assessed as part of the ES... Where a cumulative impact is likely then a cumulative transport assessment should form part of the ES to consider the impacts of abnormal traffic movements relating to the project in question in combination with those from any other relevant development. Consultation with the relevant local highways authorities is likely to be necessary"*.

14.3.11 In terms of mitigation, the emerging NPS EN-3 sets out the following points:

- *"In some cases, the local highways authority may request that the Secretary of State impose controls on the number of vehicle movements to and from the solar farm*

*site in a specified period during its construction and, possibly, on the routing of such movements particularly by heavy vehicles”;*

- *“Where cumulative effects on the local road network or residential amenity are predicted from multiple solar farm developments, it may be appropriate for applicants for various projects to work together to ensure that the number of abnormal loads and deliveries are minimised”;*
- *“Once consent for a scheme has been granted, applicants should liaise with the relevant local highway authority (or other coordinating body) regarding the start of construction and the broad timing of deliveries. It may be necessary for an applicant to agree a planning obligation to secure appropriate measures, including restoration of roads and verges”.*

14.3.12 With regards to decisions, the emerging NPS EN-3 states that:

- *“the Secretary of State should be satisfied, taking into account the views of the relevant local highway authorities, that if there are abnormal loads proposed, they can be safely transported in a way that minimises inconvenience to other road users and that the environmental effects of this and other construction traffic, after mitigation, are acceptable”;*
- *“Once solar farms are in operation, traffic movements to and from the site are generally very light, in some instances as little as a few visits each month by a light commercial vehicle or car... Therefore, it is very unlikely that traffic or transport impacts from the operational phase of a project would prevent it from being approved by the Secretary of State”.*

#### National Planning Policy Framework (2021)

14.3.13 Paragraph 111 of the National Planning Policy Framework states that, *“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe”.*

14.3.14 Paragraph 113 of the NPPF states, *“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 transport statement or transport assessment so that the likely impacts of the proposal can be assessed”.*

#### Central Lincolnshire Local Plan (2017)

14.3.15 Policy LP19 of the Central Lincolnshire Local Plan (2017) states that *“...Proposals for non-wind renewable technology will be assessed on their merits, with the impacts, both individual and cumulative, considered against the benefits of the scheme...”* The policy states that assessment should take account of *“safety, including ensuring no adverse highway impact”.*

## **14.4 Assessment Methodology and Significance Criteria**



14.4.1 This section sets out the assessment methodology. It includes the study area, the types of effects that will be assessed, the significance criteria and any limitations to the assessment.

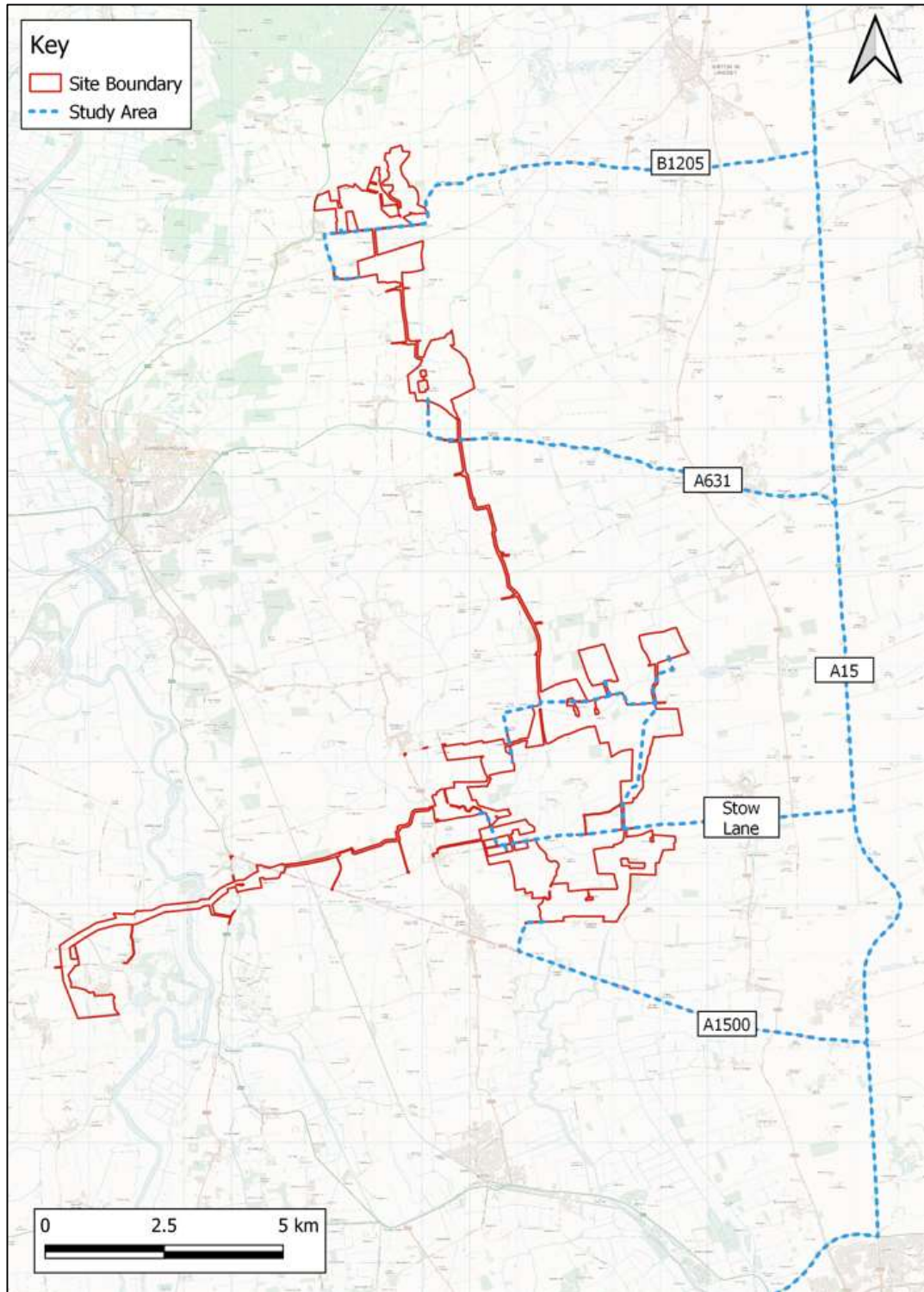
Study Area

14.4.2 The study area has been identified to cover the local roads which make up the construction vehicle routes to the Site. This is the area whereby transport and access significant effects could occur.

14.4.3 As stated the Transport and Access effects of the Cable Route Corridor are assessed separately within this Chapter. This is because use of each access on the Cable Route Corridor is expected to last just 90 days. Further information is set out at Section 14.7.

14.4.4 The study area, is shown in **Figure 14.1**.

**Figure 14.1: Study Area**



14.4.5 The roads included within the study area are as follows:

- A15;
- Till Bridge Lane (A1500);
- Thorpe Lane;
- Stow Lane;
- Ingham Road;
- Fleets Lane;
- Willingham Road;
- South Lane
- A631;
- Access Road north of A631;
- Kirton Road (B1205); and
- Station Road.

14.4.6 The local highway network surrounding the Cable Route Corridor is not included within the Study Area. The effects of the Cable Route Corridor are considered separately as the effects are more temporary in nature (just 90 working days per access). Further information is set out at Section 14.7.

#### Sources of Information

14.4.7 The following sources of information have been used in the assessment of transport and access effects:

- Automatic Traffic Count (ATC) Surveys;
- Public Rights of Way Surveys;
- Department for Transport (DfT) 'Road Traffic Statistics' Database;
- Personal injury accident data, obtained from Lincolnshire County Council;
- Highway boundary information obtained from Lincolnshire County Council;
- OS Mapping; and
- Topographical surveys.

#### Types of Effect

14.4.8 In accordance with the IEMA Guidelines for assessment of the environmental effects of road traffic, the following criteria has been considered in this assessment:

- Accidents and Safety;

- Severance;
- Driver Delay;
- Pedestrian Delay;
- Pedestrian Amenity (including Fear and Intimidation); and
- Hazardous Loads.

14.4.9 A description of each impact is provided below.

#### **Accidents and Safety**

14.4.10 The IEMA Guidelines do not include any definition in relation to the assessment of effects on accidents and safety. They advise that professional judgement should be used to assess the implications of local circumstance, or factors which may increase or decrease the risk of accidents.

#### **Severance**

14.4.11 The IEMA Guidelines define severance as *“the perceived division that can occur within a community when it becomes separated by a major traffic artery” (paragraph 4.27) that ‘separates people from places’*, for example, difficulties crossing existing roads or the physical barrier of the road itself.

14.4.12 There are no predictive formulae which give simple relationships between traffic factors and levels of significance. Nevertheless, there are a range of indicators for determining significance of the relief from severance. The IEMA Guidelines suggest that *“changes in traffic flow of 30%, 60% and 90% are regarded as producing slight, moderate and substantial changes in severance respectively” (paragraph 4.31)*. The guidance also suggests that *“marginal changes in traffic flows are, by themselves, unlikely to create or remove severance”*.

#### **Driver Delay**

14.4.13 The IEMA Guidelines state that *“delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system” (paragraph 4.34)*. As such, the impact of a Scheme on driver delay is typically considered in relation to background traffic. Junction assessment modelling can be used to estimate increased vehicle delays at junctions, if necessary.

#### **Pedestrian Delay (to include cyclists)**

14.4.14 The IEMA Guidelines state that *“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 increases in delay” (paragraph 4.35)*. There are a range of local factors that affect pedestrian (and cyclist) delay, including the level of pedestrian (and cyclist) activity, visibility and general physical conditions of the site. However, the IEMA Guidelines do not set out thresholds for judging the significance of changes in

levels of delay, and suggest that the assessor uses their judgement to determine whether pedestrian delay is a significant impact.

**Pedestrian Amenity (including Fear and Intimidation and amended to include cyclists)**

- 14.4.15 Pedestrian (and cyclist) amenity is broadly described in the IEMA Guidelines as *“the relative pleasantness of a journey”* (paragraph 4.39) and can be affected by traffic flow, composition and footway widths. This definition includes pedestrian (and cyclist) fear and intimidation and can be considered a much broader category when considering the overall relationship between pedestrians (and cyclists) and traffic. The IEMA Guidelines suggest that a threshold for judging this would be *“where the traffic flows (or its lorry component) is halved or doubled”* (paragraph 4.39).

**Hazardous Loads**

- 14.4.16 The IEMA Guidelines state that some developments include hazardous loads, and that this should be recognised by the assessment.
- 14.4.17 Some deliveries to the Site during the construction phase will be regarded as ‘hazardous loads’. These include the deliveries of lithium-ion batteries and transformer oil. All applicable regulations for the movement of hazardous loads will be followed, and the appropriate documentation will be obtained.
- 14.4.18 Whilst not hazardous, there will be abnormal loads to transport the transformers to the substations. An abnormal load is one where the vehicle exceeds 44 tonnes, the width is over 2.9m or the length is more than 18.65m.

Assessment of Significance

- 14.4.19 The assessment of the Scheme’s potentially significant effects has taken into account the construction phase and operational phase. The effects for the decommissioning phase are likely to be equivalent to, and no worse than, the construction phase. This is due to best-practice changing over time. Whilst the precise decommissioning methodology is not currently known, it will accord with the requirements of the local authority and will be in line with the Outline Decommissioning Plan **([EN010133/APP/APP/C7.2])**. The significance level attributed to each effect (set out above) has been assessed based on the sensitivity of the affected receptor to change, and the magnitude of change as a result of the Scheme.

**Sensitivity of Receptor and Magnitude of Change**

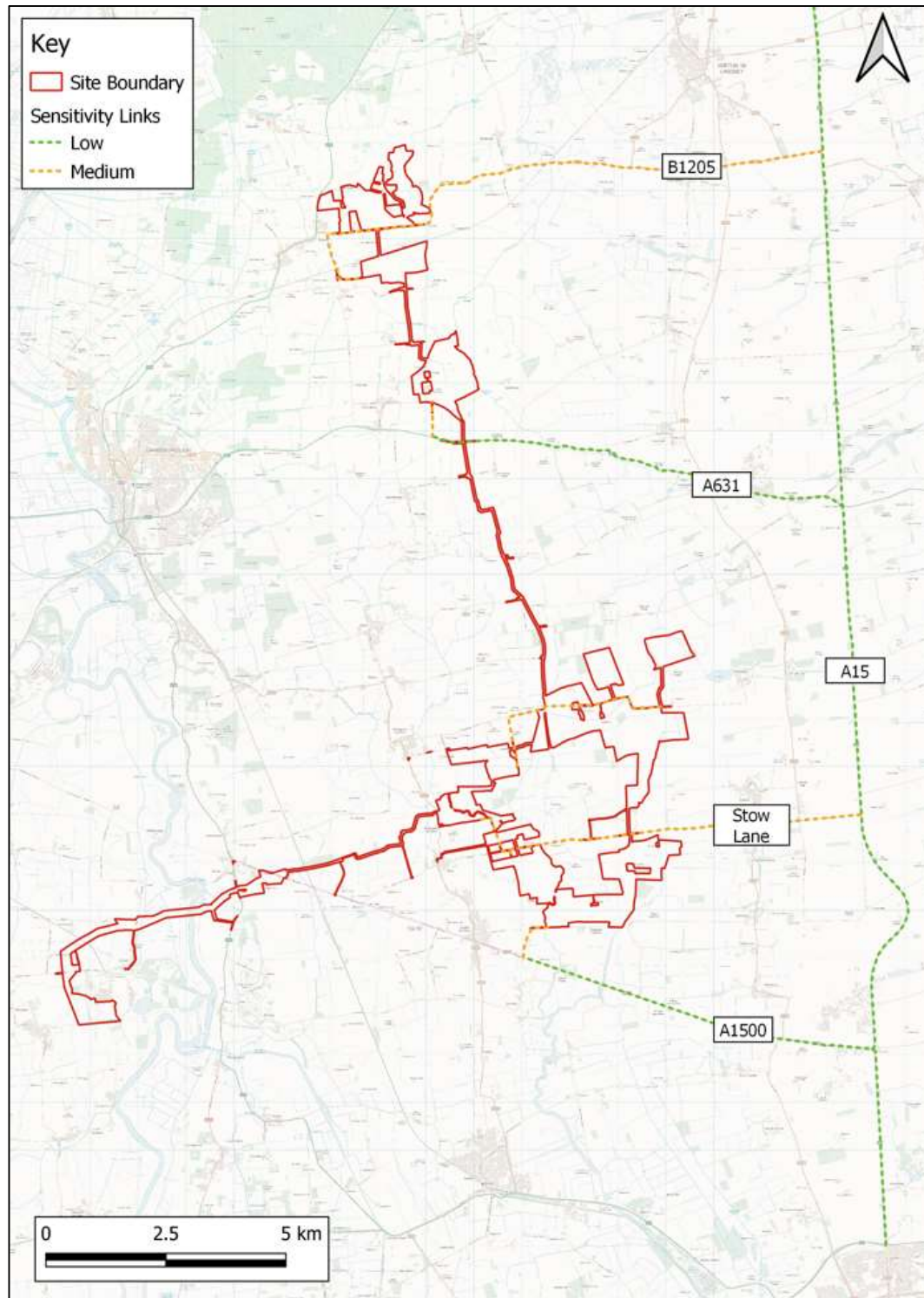
- 14.4.20 Table 14.2 provides definitions to determine the sensitivity of a receptor.

**Table 14.2: Sensitivity/Importance of Identified Receptor**

Sensitivity	Definition
High	Receptors of greatest sensitivity to traffic flows, such as schools, playgrounds, accident blackspots, retirement homes, areas with no footways with high pedestrian footfall, congested areas
Medium	Receptors with some sensitivity to traffic flow, such as conservation areas, listed buildings, tourist attractions, and residential areas
Low	Receptors with low sensitivity to traffic flows, and those distant from affected roads
Negligible	Receptors with no material sensitivity to traffic flows

- 14.4.21 The Study Area, as shown in Figure 14.1 encompasses A-class roads (A15, A1500 and A631) and more rural B and C-class roads (Ingham Lane, Stow Lane and Willingham Road). There are few receptors on the A-class roads (such as schools, retirement homes, high pedestrian footfall) which are considered to have a high sensitivity to changes in traffic flows. There are also few receptors along the more rural B and C-class roads beyond a small number of residential units. However, as the routes are more rural in nature, they are likely to have greater sensitivity to changes in traffic flow. Therefore, receptors in these locations are considered to have medium sensitivity.
- 14.4.22 The sensitivity of receptors along links within the study area are summarised in **Figure 14.2**.

Figure 14.2: Sensitivity of Links/Receptors within Study Area



- 14.4.23 The IEMA Guidelines set out two rules which will be used as threshold impacts to define the scale and extent of the assessment, as follows:
- Rule 1: Include highway links where traffic flows will increase by more than 30% (or where the number of HGVs will increase by more than 30%); and
  - Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10% or more.
- 14.4.24 It is notable that, on roads where baseline traffic flows are low, any increase in traffic flow may result in a predicted increase that would be higher than the two rules set out in the IEMA Guidelines. However, it is important to consider any overall increase in road traffic in relation to the capacity of the road.
- 14.4.25 The IEMA Guidelines state that *“For many effects there are no simple rules or formulae which define the thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor, backed up by data or quantified information wherever possible”, and “those preparing the Environmental Statement will need to make it clear how they have defined whether a change is considered significant or not”* (paragraph 4.5).
- 14.4.26 The IEMA Guidelines identify general thresholds for traffic flow increases of 10% and 30%. Where the predicted increase in traffic / HGV flow is lower than these thresholds, then the significance of the effects should be considered to be low or not significant and further detailed assessment is not required. However, to ensure a robust assessment of the increase in traffic flows in environmental terms, Table 14.3 will be used to help determine the magnitude of change.

**Table 14.3: Magnitude of Change**

Magnitude	Definition
High	Changes to peak / 24hr traffic within the Study Area by 30% or more
Medium	Changes to peak / 24hr traffic within the Study Area by between 10% and 30%
Low	Changes to peak / 24hr traffic within the Study Area by between 5% and 10%
Negligible	Changes to peak / 24hr traffic within the Study Area up to 5%
Neutral	No Change (+/- daily Variation)

### Significance of Effect

- 14.4.27 The magnitude of change and receptor sensitivity have been combined to determine the overall significance of effects. This is shown in **Table 14.4**.
- 14.4.28 There are four categories demonstrating the significance of the effect. These can be adverse or beneficial:
- Negligible – Very little change from baseline conditions;



- Minor – A minor shift away from baseline conditions;
- Moderate – A material shift away from the baseline conditions; and
- Major –Substantial alteration to baseline conditions.

**Table 14.4: Significance of Potential Effects**

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

- 14.4.29 Whilst this is a useful guideline, the effects do need to be reviewed in the context of baseline traffic flows. Within the study area, many roads are rural in nature with low baseline traffic flows. In these locations, the addition of any traffic could result in high percentage changes (over 100% in places). However, as the baseline traffic flows are low, the effects could still be considered minor or negligible.
- 14.4.30 Identified effects that are moderate or major in nature are considered to be 'significant' in EIA terms.
- 14.4.31 The effects can be temporary or permanent and short, medium or long term in duration. The duration of these effects are considered to be as follows:
- 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 or longer.

#### **Limitations and Assumptions**

- 14.4.32 A number of assumptions are made when forecasting the traffic generation of the Scheme, both during construction and operation. These forecasts have been developed by the Applicant and their consultants based on professional judgement and derived from experience with other developments similar in scale and nature to the Scheme. Therefore, they are considered to represent a realistic estimation of traffic generation.
- 14.4.33 In addition, there are some limitations to the data used. The COVID-19 pandemic and associated restrictions disrupted normal traffic flows on the network, although surveys were undertaken outside of lockdown periods.

- 14.4.34 Notwithstanding the limitations and assumptions referenced, it is considered that the methodology and conclusions to this chapter are robust.

## 14.5 Baseline Conditions

### The Scheme and Context

- 14.5.1 The Scheme consists of four separate Sites: Cottam 1, 2, 3a and 3b. Each area encompasses a number of separate fields. The Baseline Conditions focuses on the Study area for Cottam 1, 2, 3a and 3b, as set out in Figure 14.1.
- 14.5.2 The electricity generated by the Scheme will be connected to the National Grid at the existing substation at Cottam Power Station via new underground cables (within the 'Cable Route Corridor'). The local highway network surrounding the Cable Route Corridor is not included within the Study Area. The effects of the Cable Route Corridor are considered separately as the effects are more temporary in nature (just 90 working days per access). Further information is set out at Section 14.7.
- 14.5.3 Cottam 1 is the largest of the four areas and comprises of a number of individual land parcels. The area is located to the north of the A1500, a single carriageway road running in an east to west alignment, whereby the national speed limit applies. A number of more rural roads also operate throughout the Site, including the B1398, Stow Lane and Willingham Road.
- 14.5.4 Cottam 2 is located to the north of the A631. Again, this is a single carriageway road running in an east to west alignment, whereby the national speed limit applies.
- 14.5.5 Cottam 3a is located to the north of the B1205 Kirton Road and the east of Blyton village. The B1205 is also a single carriageway road running in an east to west alignment, whereby the national speed limit applies.
- 14.5.6 Cottam 3b is located to south of the B1205 and to the east of Station Road. Station Road is a single carriageway road where the national speed limit applies within the vicinity of the site access. The route passes under the railway line which has a posted height restriction of 4.1 metres.
- 14.5.7 Grid connection cables will connect the Sites to the main sub-station at Cottam 1 and subsequently to the grid connection at Cottam Power Station. In most places a 50m wide corridor has been set out for this to facilitate the works. A full description of the Sites and the Scheme are provided in the ES at Chapters 3 'The Order Limits' [EN010133/APP/C6.2.3] and Chapter 4 'Scheme Description' [EN010133/APP/C6.2.4].

### Walking and Cycling

#### **Walking**

14.5.8 Due to the rural nature of many of the access roads that make up the study area, there are limited pedestrian specific facilities. The pedestrian features are summarised below:

- Cottam 1 – There are no footways present on the A1500 Till Bridge Lane, Stow Lane, Ingham Road, Fillingham Lane, Willingham Road and South Lane. A footway is located on the east side of Thorpe Lane to the north of the A1500 junction.
- Cottam 2 – There are no footways present on the A631, nor on the access road that connects to the site.
- Cottam 3a and 3b – There are no footways present on the B1205. Station Road does have a footway on one side of the carriageway which continues for approximately 600m from the junction with the B1205 Kirton Road.

### Public Rights of Way

14.5.9 There are a number of public rights of way that run through or nearby each Site or within the vicinity of the Cable Route Corridor (or ‘Grid Connection Route’ as is used in this Chapter of the ES). These are summarised in **Table 14.5**.

**Table 14.5: Public Rights of Way**

Public Right of Way	Nearest Site	Route
Bridleway – TLFe/31/2	Cottam 1	Ingham Road south towards Thorpe Lane.
Bridleway – Fill/86/1	Cottam 1	Willingham Road to Long Lane by Ingham.
Bridleway Stow 83/1	Cottam 1	Ingham to Stow Pasture
Footpath – Pilh/20/1	Cottam 3b and Grid Connection Route	Station Road to the unnamed rural road west of Bonsdale.
Footpath – Pilh/20/1	Cottam 3b/Cable Route	Station Road to the unnamed rural road west of Bonsdale.
Footpath – Mton/66/1 and 4	Cable Route	A156 to Littleborough Lane
Footpath – Mton/68/1	Cable Route	South of Marton
NT Cottam FP1	Cable Route	Alongside River Trent
NT Cottam FP3	Cable Route	River Trent to Headsted Bank
NT Cottam RB4	Cable Route	Overcoat Lane

Public Right of Way	Nearest Site	Route
NT South Leverton BOAT16	Cable Route	Cow Pasture Lane
NT Rampton BOAT 13	Cable Route	Torskey Ferry Road
NT Rampton FP5/6	Cable Route	East of Cottam Power Station
NT Rampton FP20	Cable Route	South of Cottam Power Station
NT Treswell FP5	Cable Route	East of Cottam Power Station

14.5.10 Surveys were undertaken at the three identified Public Rights of Way that run through the Sites; these are Bridleways TLFe/312, Stow 83/1, and Pilh 20/1. Surveys recorded the number of pedestrians and cyclists to use the identified paths over the course of a seven-day period between 30<sup>th</sup> August 2022 and 5<sup>th</sup> September 2022. The results are summarised in **Table 14.6**.

**Table 14.6: Public Rights of Way Usage**

Date	Two-Way Counts					
	TLFe/31/2		Stow 83/1		Pilh 20/1	
	Ped	Cycle	Ped	Cycle	Ped	Cycle
Tuesday 30/08/22	0	0	0	0	2	0
Wednesday 31/08/22	0	0	0	1	0	0
Thursday 01/09/22	3	1	4	0	0	0
Friday 02/09/22	0	0	0	0	0	0
Saturday 03/09/22	6	18	0	1	0	0
Sunday 04/09/22	0	0	0	0	0	0
Monday 05/09/22	0	0	4	0	0	0
<b>Total</b>	<b>9</b>	<b>19</b>	<b>8</b>	<b>2</b>	<b>2</b>	<b>0</b>

14.5.11 The results in Table 14.6 indicate the PRowS through the Sites have relatively low usage.

### Cycling

14.5.12 There is no dedicated cycling infrastructure surrounding the Sites and Study Area for Cottam 1, 2, 3a and 3b.

### Public Transport

## Bus

- 14.5.13 There are a number of bus services operating within the vicinity of the Cottam 1, 2, 3a and 3b. A summary of the existing bus services can be found in **Table 14.7**.

**Table 14.7: Summary of Existing Bus Services**

Route Number	Nearest Bus Stop	Nearest Site	Route
103	Post Office	Cottam 2	Lincoln – Kirton in Lindsey
354	Harpwell Grange	Cottam 2	Gainsborough - Lincoln
367	Old Station House	Cottam 3a	Gainsborough – Kirton in Lindsey
601	Monson Road	Cottam 3a	Scunthorpe - Gainsborough
906	Till Bridge Lane / Lane End	Cottam 1	Welton – Saxilby

- 14.5.14 Table 14.7 shows that there are a range of bus services located near to all areas of the Scheme.

## Rail

- 14.5.15 The nearest railway stations are Saxilby Train Station and Gainsborough Train Station. Saxilby Train Station is located approximately six miles west of Lincoln and is managed by Northern Rail. The station has services running approximately every 30 minutes to destinations such as Leeds, Peterborough and Lincoln.
- 14.5.16 Gainsborough Train Station is located approximately 14 miles south of Scunthorpe and is also managed by Northern Rail. The station has services running approximately every 30-60 minutes to destinations such as Lincoln, Retford and Leeds.

## [Local Highway Network](#)

- 14.5.17 An overview of the local highway network is provided below.

### **A15 (All Sites)**

- 14.5.18 The A15 is a single carriageway two-way road subject to the national speed limit which connects the M180 to the north with the A46 to the south. The road has a predominantly straight alignment throughout.

### **A1500 Till Bridge Lane (Cottam 1)**

- 14.5.19 The A1500 is subject to the national speed limit and generally has a straight alignment. It connects the A15 to the east to the village of Sturton by Stow to the west.

### **Thorpe Lane (Cottam 1)**

- 14.5.20 Thorpe Lane is a rural single lane road that has no central markings. It has a footway running along the eastern side of the road and is subject to the national speed limit.

### **Stow Lane (Cottam 1)**

- 14.5.21 Stow Lane is a rural single lane road that has no central markings and is subject to the national speed limit. Stow Lane connects Ingham Lane to the east to Ingham Road to the west.

### **Ingham Road (Cottam 1)**

- 14.5.22 Ingham Road, is a rural single lane road that has no central markings and is subject to the national speed limit. Ingham Road connects Stow Lane to the east to the village of Stow to the west.

- 14.5.23 Ingham Road is subject to a 7.5 tonne environmental weight restriction. However, access is permitted for vehicles over 7.5 tonnes.

### **Fleets Lane (Cottam 1)**

- 14.5.24 Fleets Lane, is a narrow rural single lane road that has no central markings and is subject to the national speed limit. Fleets Lane connects Ingham Road to the north to Fleets Road to the south.

### **Willingham Road (Cottam 1)**

- 14.5.25 Willingham Road is a rural single lane road that generally has a straight alignment. The road has no central markings and is subject to the national speed limit. Willingham Road connects the village of Fillingham to the east to Fillingham Lane to the west.

### **South Lane (Cottam 1)**

- 14.5.26 South Lane is a rural narrow single lane road that has no central markings and is subject to the national speed limit.

### **Fillingham Lane (Cottam 1)**

14.5.27 Fillingham Lane connects to Willingham Road and is a rural single lane road that generally has a straight alignment. The road has no central markings and is subject to the national speed limit.

**A631 (Cottam 2)**

14.5.28 The A631, is a single carriageway where the national speed limit applies. The A631, connects the A157 to the east, to the A630 to the west.

**Access Road north of A631 (Access to Cottam 2)**

14.5.29 The access road that lies north of the A631, is a narrow road with no central markings where the national speed limit applies.

**B1205 Kirton Road (Cottam 3a and 3b)**

14.5.30 The B1205 is a single carriageway where the national speed limit applies. The B1205 connects the A15 to the east to the village of Blyton to the west.

**Station Road (Cottam 3b)**

14.5.31 Station Road is a single lane road that has a footway located on the eastern side. It connects Pilham Lane to the south to Kirton Road to the north.

Traffic Flows

14.5.32 Automatic Traffic Count Surveys have been undertaken for all roads within the Study Area. These were undertaken between 2nd November 2021 and 8th November 2021. At the time, there were no Covid-19 restrictions in place. In addition, DfT data has been reviewed for the strategic road network, including the A15 and A631. The average weekday two-way traffic count for the main roads within the vicinity of the Site is set out in **Table 14.8**. A plan showing the location of the counting points is shown in **Figure 14.3**

**Table 14.8: Baseline Traffic Flows – Average Weekday (24 hr), Two-Way**

Ref	Link	Sensitivity	Total Vehicles	%HGV*
<b>Cottam 1, 2 and 3a and 3b</b>				
1	A15	Low	12,661	17%
<b>Cottam 1</b>				
2	Till Bridge Lane (A1500)	Low	4,521	17%
3	Thorpe Lane	Medium	83	37%
4	Stow Lane	Medium	688	25%
5	Ingham Road	Medium	759	20%
6	Fleets Lane	Medium	63	25%

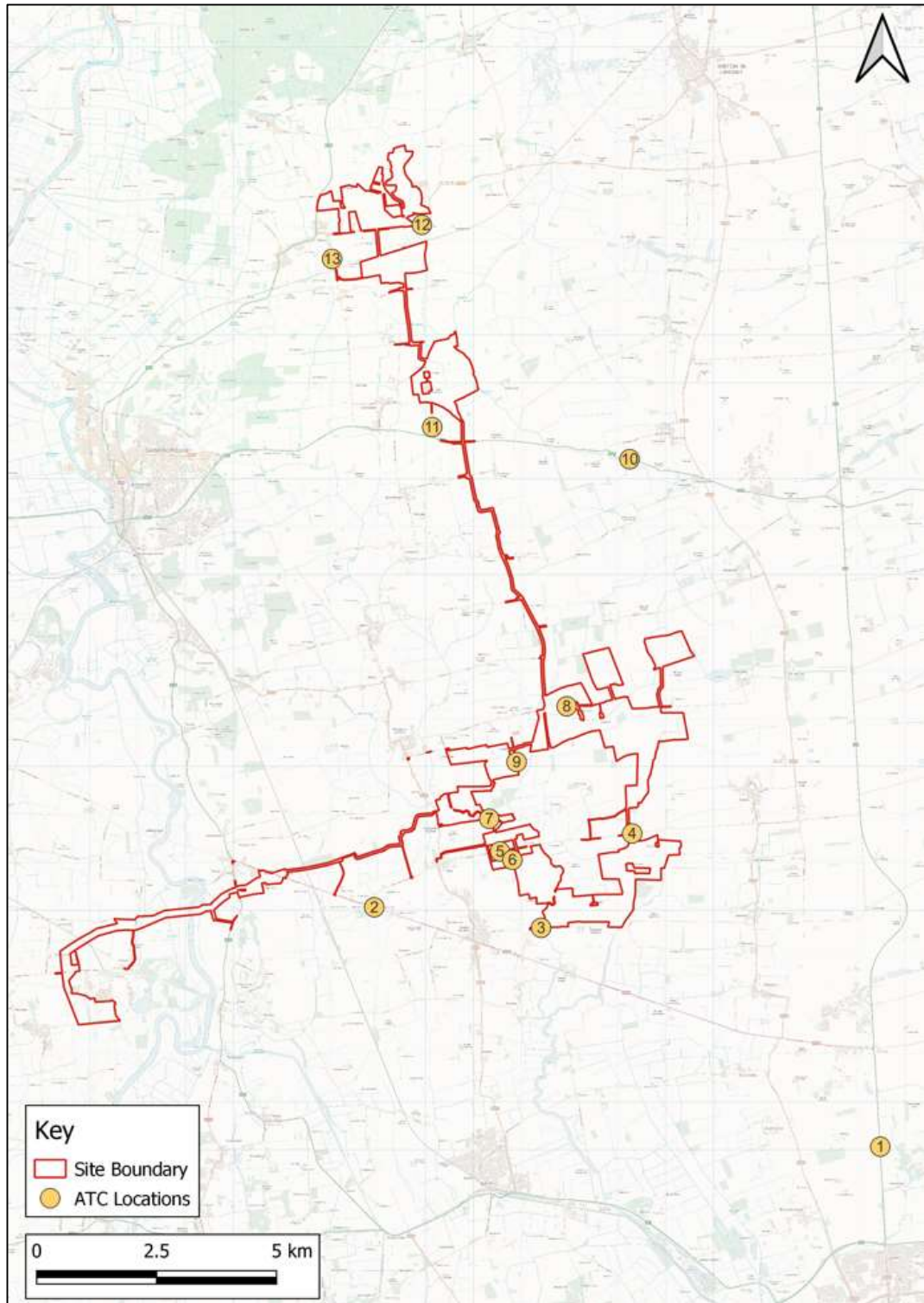
7	Coates Lane (East of Normanby-by-Stow)	Medium	5	13%
8	Willingham Road	Medium	122	25%
9	South Lane**	Medium	122	25%
<b>Cottam 2</b>				
10	A631	Low	6,310	6%
11	Access Road (North of A631)	Medium	70	3%
<b>Cottam 3a and 3b</b>				
12	Kirton Road (B1205)	Medium	1,606	19%
13	Station Road	Medium	2,159	18%

\*HGV refers to vehicles above 3.5 tonnes split into Ordinary Goods Vehicle (OGV) 1 and 2

\*\*Flows based on Willingham Road ATC to create a baseline as no data was available for South Lane. Flows likely to be lower in reality.

**Figure 14.3: Traffic Count Locations**





14.5.33 The traffic flows in **Table 14.8** show that HGVs<sup>1</sup> are already present on all local roads, which demonstrates a precedent for HGV use. Many of these vehicles are likely to be agricultural in nature.

Road Safety

14.5.34 Statistics showing Personal Injury Collisions on the local road network have been obtained from Lincolnshire County Council for the most recent five-year period up to and including 2021.

14.5.35 A breakdown of the accidents is shown in **Table 14.9**.

**Table 14.9: Personal Injury Accident Data (2016-2021)**

Ref	Link	Slight	Serious	Fatal	Total
<b>Cottam 1, 2, 3a and 3b</b>					
1	A15	4	3	0	7
<b>Cottam 1</b>					
2	Till Bridge Lane (A1500)	7	2	0	9
3	Thorpe Lane	0	0	0	0
4	Stow Lane	2	0	1	3
5	Ingham Road	0	0	0	0
6	Fleets Lane	0	0	0	0
7	Coates Lane (East of Normanby-by-Stow)	0	0	0	0
8	Willingham Road	0	0	0	0
9	South Lane	0	0	0	0
<b>Cottam 2</b>					
10	A631	16	6	1	23
11	Access Road (North of A631)	0	0	0	0
<b>Cottam 3 and 3b</b>					
12	Kirton Road (B1205)	14	4	2	20
13	Station Road	0	1	0	1

14.5.36 Table 14.9 indicates a total of 63 accidents within the study area. Of these 43 resulted in slight injuries, 16 in serious injuries and four with fatal injuries.

<sup>1</sup> An HGV refers to any Heavy Goods Vehicle that has a gross weight over 3.5 tonnes. 'A Simplified Guide to Lorry Types and Weights' Department for Transport, October 2003.

14.5.37 Generally, accidents are spread out throughout the study area. However, one accident hotspot is identified, on the B1205/B1398 crossroad. There has been a total of 10 accidents here, including two that resulted in fatal injuries.

Future Baseline

14.5.38 There are currently no planned highway works within the study area beyond routine maintenance

14.5.39 Traffic flows may change slightly as a result of cumulative developments in the area. This is discussed further in the 'Cumulative Effects' section of this chapter.

14.5.40 To pick up background traffic growth, industry standards TEMPro growth factors, which have been adjusted in line with the National Traffic Model (NTM), have been applied to the observed traffic flows. A baseline year of 2025 has been assumed, as a reasonable start date from construction.

14.5.41 The TEMPro growth factor for the West Lindsey District is shown in **Table 14.10**.

**Table 14.10: TEMPro Growth Factors (2021-2025)**

Year	Growth Factor
2021-2025	1.0555

14.5.42 The 2025 future baseline traffic flows are shown in **Table 14.11**.

**Table 14.11: Future Baseline (2025) Traffic Flows – Average Weekday (24 hr), Two-Way**

Ref	Link	Sensitivity	Total Vehicles	%HGV
<b>Cottam 1, 2 and 3</b>				
1	A15	Low	13,364	17%
<b>Cottam 1</b>				
2	Till Bridge Lane (A1500)	Low	4,772	17%
3	Thorpe Lane	Medium	87	37%
4	Stow Lane	Medium	727	25%
5	Ingham Road	Medium	802	20%
6	Fleets Lane	Medium	67	25%
7	Coates Lane (East of Normanby-by-Stow)	Medium	5	13%
8	Willingham Road	Medium	129	25%
9	South Lane	Medium	129	25%

<b>Cottam 2</b>				
10	A631	Low	6,660	6%
11	Access Road (North of A631)	Medium	74	3%
<b>Cottam 3a and 3b</b>				
12	Kirton Road (B1205)	Medium	1,695	19%
13	Station Road	Medium	2,279	18%

## 14.6 Embedded Mitigation

### Construction Phase

- 14.6.1 Embedded mitigation measures will be implemented during the construction period.
- 14.6.2 An outline Construction Traffic Management Plan (CTMP) has been prepared and will be secured through a DCO Requirement. The outline CTMP is located in **Appendix 14.2** of the ES.
- 14.6.3 The outline CTMP provides a framework for the management of construction vehicle movements to and from the Scheme, to ensure that the effects of the temporary construction phase on the local highway network are minimised. The outline CTMP sets out construction access arrangements, construction vehicle routing, construction vehicle trip generation, and the management/mitigation measures. It also summarises the requirements for vehicles to transport abnormal loads (for elements such as transformers), based on a report undertaken by Wynns Limited, which is appended to the outline CTMP.
- 14.6.4 A number of embedded mitigation/management measures are set out within the outline CTMP for the control of vehicles associated with the construction phase. These will include, but will not be limited to the following:
- Signs to direct construction vehicles associated with the development will be installed along the agreed construction traffic route. Delivery drivers, contractors and visitors will be provided with a route plan in advance of delivering to Site to ensure that vehicles follow the identified route;
  - Advisory signs informing contractors and visitors that parking is not permitted on-street in the vicinity of the Site or on the Site access road;
  - All signage on the designated route will be inspected twice daily by the Site Manager (once in the morning and once at lunchtime), to ensure they are kept in a well maintained condition and located in safe and appropriate locations;
  - A compound area for contractors will be set up on-Site including appropriate parking spaces. Contractors and visitors will be advised that parking facilities will be provided on-Site in advance of visiting the Site and that they should not park on-street;

- A wheel wash facility will be provided ahead of exiting the Site allowing vehicles to be hosed down so that no construction vehicles will take mud or debris onto the local highway network;
- A road sweeper will be provided for surrounding local roads along the designated route to alleviate any residual debris generated during the construction phase, as required;
- The Site will be secured at all times with Heras fencing;
- A requirement for engines to be switched off on-Site when not in use;
- Spraying of areas with water supplied as and when conditions dictate to prevent the spread of dust;
- Vehicles carrying waste material off-Site to be sheeted;
- Banksmen will be provided at the Site access junctions to indicate to construction traffic when it is safe for them to enter and exit the Site;
- All residents in the vicinity of the Site along the designated route will be provided with contact details of the Site Manager, which will also be provided on a Site-board at the Site access and egress junctions;
- Agreement to a Road Condition Survey with the local highway authority; and
- Works to enable abnormal load deliveries.

#### Operational Phase

14.6.5 The following embedded mitigation measures will be implemented during the operational phase:

- Maintaining access to all existing PRow within the order limits, with no diversions or closures;
- Providing suitable points of access for operations vehicles; and
- The planting of landscaping and screening to conceal any reflections from the panels, which could affect drivers on the local highway network and rail network.

#### Decommissioning Phase

14.6.6 A requirement for a Decommissioning Traffic Management Plan (DTMP) to be agreed with the local highway authority prior to Decommissioning will be secured through the DCO as part of the Outline Decommissioning Plan **[EN010133/APP/APP/C7.2]**. This will follow the principles of the outline CTMP. It is not anticipated that the effects associated with decommissioning will be worse than during the construction phase.

### **14.7 Identification and Evaluation of Likely Effects**

#### Temporary Construction Phase: Cottam 1, 2, 3a and 3b

14.7.1 This section summarises the likely effects associated with the movement of vehicles during the construction phase for the Sites (Cottam 1, 2, 3a and 3b). The assessment of the effects of the Cable Route Corridor is discussed later in this Section.

### Construction Programme

14.7.2 The construction programme for the entire Scheme is anticipated to be 24 months. The anticipated construction programme (and the basis for the assessment of effects in the ES) is broken down for each Site below. More information can be found in Chapter 4 of the ES [EN010133/APP/C6.2.4].

- Cottam 1:
  - North – 529 working days (Month 1 – 24)
  - South – 440 working days (Month 1 – 20)
  - West – 337 working days (Month 1 – 15)
- Cottam 2: 251 working days (Month 1-11)
- Cottam 3a: 242 working days (Month 9-20);
- Cottam 3b: 178 working days (Month 11-19)

### Construction Vehicle Accesses

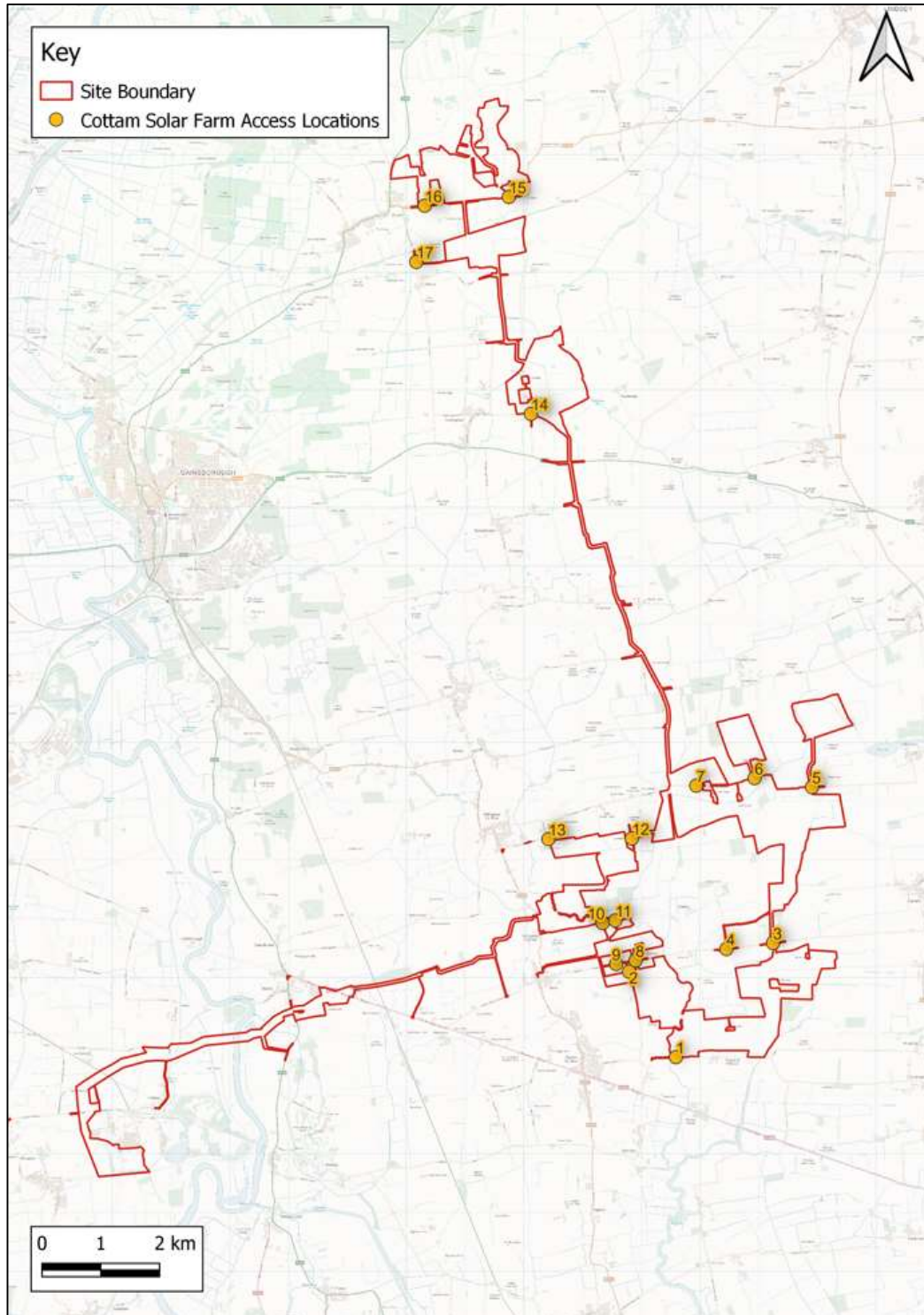
14.7.3 There will be a total of 17 access points across Cottam 1, 2, 3a and 3b. Of these 16 will be used for the construction phase. The access locations are summarised in **Table 14.12** and shown in **Figure 14.4**. The majority of access points will be improved existing field accesses.

**Table 14.12: Access Locations**

Ref	Location	Description	Use
<b>Cottam 1 (South)</b>			
1	Thorpe Lane, at Thorpe Bridge	Improved existing field access	Construction Operational
2	Fleets Lane, 200m south of Ingham Road	Improved existing field access	Construction Operational
<b>Cottam 1 (North)</b>			
3	Stow Lane (North), between Blackthorn Hill and Furze Hill	Improved existing field access	Construction
4	Stow Lane, Grange Farm access	Existing field access	Operational
5	Willingham Road, Fillingham Grange track (North and South)	Improved existing access	Construction Operational

Ref	Location	Description	Use
6	Willingham Road, Adj. North Farm	Improved existing access	Construction Operational
7	Willingham Road, West of Turpins Farm	Improved existing access	Construction Operational
<b>Cottam 1 (West)</b>			
8	Ingham Road, 100m east of 31 Ingham Road	Improved existing field access	Construction
9	Green lane Track from Coates Lane to Ingham Road, 400m north of Ingham Road	Existing green lane access	Operational
10	Coates Lane, at River Till bridge	Improved existing field access	Construction Operational
11	Coates Lane, 200m east of River Till bridge	Improved existing field access	Construction Operational
12	South Lane	Improved existing field access	Construction Operational
13	Stone Pit Lane, at Cot Garth Lane	Improved existing field access	Construction (abnormal loads) Operational
<b>Cottam 2</b>			
14	Access road from East Lane to A631, adj. Corringham Grange	Improved existing field access	Construction Operational
<b>Cottam 3a</b>			
15	B1205 Kirton Road, adj. Blyton Park Driving Centre	Existing access	Construction Operational
16	B1205 Kirton Road, 150m west of JG Pears	Existing access	Construction Operational
<b>Cottam 3b</b>			
17	Station Road/Pilham Lane, adj. Glebe Farm	Improved existing field access	Construction Operational

Figure 14.4: Construction and Operational Access Locations





### Construction Traffic Flows: Heavy Goods Vehicles (HGVs)

- 14.7.4 The construction period will include the use of HGVs to bring the equipment onto the Site and this will be strictly managed to ensure that vehicle movement is controlled and kept to a minimum. On a day-to-day basis, the largest vehicle that will be used to deliver equipment to the Site will be a 16.5m articulated vehicle, although a significant proportion of movements will be by smaller vehicles. A summary of the construction activity that requires HGV movements is as follows:
- Delivery of solar modules and mounting structures – this makes up the majority of deliveries. The largest vehicle used in these deliveries will be a 16.5m articulated vehicles;
  - Delivery of Inverters and Transformers;
  - Delivery of Substation equipment;
  - Delivery of material for the access track construction;
  - Other deliveries for items such as waste, fencing, sand and gravel.
- 14.7.5 There will be a small number of abnormal load movements to transport large transformers. Wynns, a specialist haulage company, has been appointed to coordinate the movement of these loads. Additional information on the movement of abnormal loads is set out within the CTMP at **Appendix 14.2**.
- 14.7.6 Construction vehicles will avoid travel during the network peak hours where possible. Therefore, deliveries will be scheduled for between 09:30 and 16:30 where possible.
- 14.7.7 **Table 14.13** summarises the number of HGVs expected at each Site during the construction phase. It is expected that there will be a relatively flat profile of deliveries throughout the construction period, Therefore, an average number of deliveries per day has been calculated based on the length of the construction period
- 14.7.8 Whilst an average day is presented, it is acknowledged that there will be small peaks throughout the construction period, especially during each Site set up. To account for this, a 50% uplift has been applied for the purposes of assessment to provide a reasonable worst case scenario.

**Table 14.13: Construction Traffic Flows/HGV – Cottam 1, 2, 3a and 3b**

Construction Activity	Vehicle Size (Max)	Cottam 1			Cottam 2	Cottam 3		Total
		North	South	West		A	B	
Construction Period (Working Days)		529	440	337	251	242	178	529
Ground Mounted PV Modules	16.5m Articulated	1,490	990	310	530	660	340	4,320
Conversion Units	16.5m Articulated	30	20	10	10	10	10	90
Access Track	10m Tipper	670	440	140	200	250	100	1,800
General (Fencing, Landscaping, etc.)	10m Rigid	1,280	850	260	480	580	350	3,800
Energy Storage Facility*	16.5m Articulated	0	0	3,000	0	0	0	3,000
<b>Total</b>		<b>3,470</b>	<b>2,300</b>	<b>3,720</b>	<b>1,220</b>	<b>1,500</b>	<b>800</b>	<b>13,010</b>
Total Movements (Arrivals + Departures)		6,940	4,600	7,440	2,440	3,000	1,600	26,020
Average Arrivals per Day		7	5	11	5	6	4	38
Average Movements per Day		14	10	22	10	12	8	76
Average Arrivals per Day (Peak Period – Plus 50%)		10	8	17	7	9	7	58
Average Movements per Day (Peak Period – Plus 50%)		20	16	34	14	18	14	116

\* sometimes referred to as 'BESS'

- Average HGV Arrivals and Departures per Day – 38 (76 Trips)
- Peak HGV Arrivals and Departures Day – 58 (116 Trips)

### Construction Traffic Flows: Car/Light Goods Vehicle (LGV) Movements

- 14.7.9 On an average day, there is expected to be 450 workers spread across the Sites. To account for peak periods at the different Sites, 600 construction workers has been taken forward for assessment as a reasonable worst case. For the assessment, construction workers have been spread across the Sites on a proportional basis.
- 14.7.10 In addition, there will be approximately 50 workers positioned at the Energy Storage Facility in Cottam 1 (West).
- 14.7.11 Construction worker shifts will be scheduled so that workers are not traveling during the network peak hours of 08:00-09:00 and 17:00-18:00.
- 14.7.12 As part of the Outline CTMP at **Appendix 14.2**, an Outline Construction Worker Travel Plan has been prepared. This includes a measure for the provision of shuttle buses to transport construction workers to and from the Sites. This is particularly important for non-local workers, who will stay in local accommodation and be transported to the Sites. It can also be utilised by other workers as appropriate. It is expected that a mixture of coaches and minibuses will be used. On average, it is expected that a shuttle bus will be able to accommodate 20 workers. In addition, workers who drive will be encouraged to car share where possible.
- 14.7.13 With this in mind, it is assumed that 50% of workers will arrive by shuttle bus. This is a similar proportion to other DCO applications. For example Longfield Solar Farm (PINS reference EN010118) assumed that 55% of the workforce would arrive by shuttle bus based on the proportion of the workforce that would be non-local to the Site and would stay in local accommodation.
- 14.7.14 The remaining workers will arrive by car with an assumed 1.5 construction workers per car, based on the national car occupancy average.
- 14.7.15 Based on a total of 650 construction workers (including 50 at the Energy Storage Facility), the forecast number of cars/LGVs are set out in **Table 14.14**.

**Table 14.14: Cars and LGVs**

	<b>Cottam 1, 2, 3a and 3b</b>
Construction Workers	650
Shuttle Bus (20 Workers per Bus)	16*
Car (1.5 Workers per Car)	217*
Total Car/LGV (Arrivals)	233
Total Car/LGV Movements (Arrivals + Departures)	466

\*Rounded to nearest number

### Construction Traffic Flows: Total Peak Day

14.7.16 The total traffic flows, based on the information above, is set out in **Table 14.15**.

**Table 14.15: Construction Phase Traffic Flows: Peak Day**

	Cottam 1			Cottam 2	Cottam 3A	Cottam 3B	Total
	North	South	West				
HGV	10	8	17	7	9	7	58
Car/LGV	74	49	33	26	33	17	233
Total	84	57	50	34	42	24	291
Total (Two-Way)	168	114	100	68	84	48	582

14.7.17 Table 14.15 shows that there could be 291 arrivals and departures during a peak day during the construction phase. This is a reasonable worst case assessment, and on a typical day, traffic flows will be lower than this.

### Construction Traffic Routes

14.7.18 The designated routes for all vehicles associated with the construction phase forms the basis for the study area for this ES Chapter. The routes are shown in Figure 14.1.

14.7.19 Delivery drivers, contractors and visitors will be advised of the route in advance of driving to the Site. The route has been designed to utilise the most appropriate roads available, avoid designated or protected areas, height and weight restrictions and residential area.

14.7.20 A summary of the construction vehicle route for each area is set out below:

- Cottam 1 (South):
  - A15 → A1500 Till Bridge Lane → Thorpe Lane; or
  - A15 → Stow Lane → Fleets Lane
- Cottam 1 (North):
  - A15 → Stow Lane → Internal Access Road; or
  - A15 → Stow Lane → Internal Access Road → Willingham Road;
- Cottam 1 (West):
  - A15 → Stow Lane → Ingham Road; or
  - A15 → Stow Lane → Internal Access Road → Willingham Road → South Lane; or
  - A15 → A1500 Till Bridge Lane → Sturton Road (less than one trip per day)

- Cottam 2: A15 → A631 → unclassified road;
- Cottam 3a: A15 → B1205;
- Cottam 3b: A15 → B1205 and Station Road.

14.7.21 Further information on the construction traffic routes is set out in the Outline CTMP, contained at **Appendix 14.2**.

14.7.22 As set out, in order to access the land parcel that makes up Cottam West, a small number of vehicles will have to travel on Sturton Road, through Sturton-by-Stow and Stow. In terms of HGV movements, there is expected to be around one HGV using this route on an average day. Therefore, it is not taken forward for assessment in line with the two rules set out in the IEMA Guidelines.

14.7.23 Further information on the construction traffic routes is set out in the Outline CTMP, contained at **Appendix 14.2**.

#### Construction Traffic Flows

14.7.24 Table 14.16 sets out the construction traffic flows for the links within the study area on a peak day.

**Table 14.16: Construction Traffic Flows (Total Daily Movements)**

Ref	Link	Sensitivity	Total Vehicles	HGV
<b>Cottam 1, 2, 3a and 3b</b>				
1	A15	Low	581	115
<b>Cottam 1</b>				
2	Till Bridge Lane	Low	96	15
3	Thorpe Lane	Medium	86	12
4	Stow Lane	Medium	286	53
5	Ingham Road	Medium	39	7
6	Fleets Lane	Medium	29	4
7	Coates Lane (East of Normanby-by-Stow)	Medium	10	3
8	Willingham Road	Medium	147	34
9	South Lane	Medium	80	26
<b>Cottam 2</b>				
10	A631	Low	67	15
11	Access Road	Medium	67	15
<b>Cottam 3a and 3b</b>				

12	Kirton Road (B1205)	Medium	132	32
13	Station Road	Medium	48	13

### Base 2025 plus Construction Traffic Flows

14.7.25 The construction traffic flows set out in **Table 14.16** have been added to the Future Base 2025 traffic flows set out in **Table 14.11**. This is summarised in **Table 14.17** for all vehicles, and **Table 14.18** for HGVs.

**Table 14.17: Future Baseline (2025) Traffic plus Construction Traffic (Total)**

Ref	Link	Sensitivity	Base 2025	Base 2025 plus Con	% Change
<b>Cottam 1, 2, 3a and 3b</b>					
1	A15	Low	13,364	13,945	4%
<b>Cottam 1</b>					
2	Till Bridge Lane	Low	4,772	4,868	2%
3	Thorpe Lane	Medium	87	173	98%
4	Stow Lane	Medium	727	1,013	39%
5	Ingham Road	Medium	802	840	5%
6	Fleets Lane	Medium	67	95	43%
7	Coates Lane (East of Normanby-by-Stow)	Medium	5	15	196%
8	Willingham Road	Medium	129	276	114%
9	South Lane	Medium	129	209	62%
<b>Cottam 2</b>					
10	A631	Low	6,660	6,727	1%
11	Access Road	Medium	74	142	90%
<b>Cottam 3a and 3b</b>					
12	Kirton Road (B1205)	Medium	1,695	1,827	8%
13	Station Road	Medium	2,279	2,326	2%

**Table 14.18: Future Baseline (2025) Traffic plus Construction Traffic (HGVs)**

Ref	Link	Sensitivity	Base	Base plus Con	% Change
<b>Cottam 1, 2, 3a and 3b</b>					
1	A15	Low	2,233	2,349	5%
<b>Cottam 1</b>					
2	Till Bridge Lane	Low	826	841	2%
3	Thorpe Lane	Medium	33	44	36%
4	Stow Lane	Medium	180	233	30%
5	Ingham Road	Medium	161	169	4%
6	Fleets Lane	Medium	17	21	23%
7	Coates Lane (East of Normanby-by-Stow)	Medium	1	4	523%
8	Willingham Road	Medium	32	66	107%
9	South Lane	Medium	32	59	83%
<b>Cottam 2</b>					
10	A631	Low	691	706	2%
11	Access Road	Medium	2	17	628%
<b>Cottam 3 and 3b</b>					
12	Kirton Road (B1205)	Medium	318	350	10%
13	Station Road	Medium	412	426	3%

### Further Assessment

14.7.26 As set out earlier within this Chapter, the IEMA Guidelines set out two rules which will be used as threshold impacts to define the scale and extent of the assessment, as follows:

- Rule 1: Include highway links where traffic flows will increase by more than 30% (or where the number of HGVs will increase by more than 30%); and
- Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10% or more.

14.7.27 Based on these 'Rules' **Table 14.19** sets out which links will be taken forward for assessment, on the basis of the percentage change in traffic flows and HGVs. Low sensitivity links will be assessed against Rule 1, medium sensitivity links will be assessed against Rule 2.

**Table 14.19: Percentage Change and Total Vehicles and HGVs - Further Assessment**

Ref	Link	Sensitivity	Total Vehicles	HGVs	Further Assessment Required
<b>Cottam 1, 2, 3a and 3b</b>					
1	A15	Low	4%	5%	No
<b>Cottam 1</b>					
2	Till Bridge Lane	Low	2%	2%	No
3	Thorpe Lane	Medium	98%	36%	Yes
4	Stow Lane	Medium	39%	30%	Yes
5	Ingham Road	Medium	5%	2%	No
6	Fleets Lane	Medium	43%	23%	Yes
7	Coates Lane (East of Normanby-by-Stow)	Medium	196%	523%	Yes
8	Willingham Road	Medium	114%	107%	Yes
9	South Lane	Medium	62%	83%	Yes
<b>Cottam 2</b>					
10	A631	Low	1%	2%	No
11	Access Road	Medium	90%	628%	Yes
<b>Cottam 3a and 3b</b>					
12	Kirton Road (B1205)	Medium	8%	10%	Yes
13	Station Road	Medium	2%	3%	No

14.7.28 Table 14.19 shows the links that have over a 30% increase in total vehicles or HGVs on low sensitive road, or over a 10% increase in total vehicles of HGVs on medium sensitive roads. It should be noted that high percentage changes are more to do with low baseline traffic flows rather than the intensity of the construction traffic flows. For example, on link 7, to the east of Normanby-by-Stow, the baseline traffic flows consist of just five vehicles per day, including one HGV. Any change in traffic flow on this link will result in a large percentage change.



- 14.7.29 Whilst five of the links set out in Table 14.19 do not require further assessment, they have been commented on in the 'Likely Effects' section.
- 14.7.30 A review of the likely significant environmental effects in relation to transport and access during the Development's construction phase is set out below.

### Likely Effects: Accidents and Safety

- 14.7.31 As set out in Table 14.9, there have been a total of 63 accidents within the study area during the most recent five year period (up to and including 2021). Of these 43 resulted in slight injuries, 16 in serious injuries and four with fatal injuries.
- 14.7.32 The IEMA Guidelines states that professional judgement should be used to assess the implications of local circumstance, or factors which may increase or decrease the risk of accidents.
- 14.7.33 Generally, accidents appear to be spread throughout the study area. Whilst the addition of any amount of traffic can increase a risk of accidents, it is considered that the low level of construction traffic associated with the Scheme is unlikely to materially affect safety on the links in the study area, irrespective of percentage changes in traffic flows. Therefore, the effects on accidents and safety will be negligible for the most part.
- 14.7.34 One accident hotspot is identified, on the B1205/B1398 crossroad. There has been a total of 10 accidents here, including two that resulted in fatal injuries. Given the nature of this junction, it is considered that the effect on accidents and safety on the B1205 will be minor.
- 14.7.35 Another crossroad is located at the interchange of Stow Lane and Lincoln Road. Whilst this does not have an accident record, the effect on accidents and safety here is considered to be minor due to the inherent nature and safety of crossroad junctions.
- 14.7.36 In light of this, the likely effects on accidents and safety during the construction phase is set out in Table 14.20. All effects are temporary. In conclusion, the effects on accidents and safety are not considered to be significant.

**Table 14.20: Effects on Accidents and Safety**

Ref	Link	Sensitivity	Nature of Effect	Significance of Effects
<b>Cottam 1, 2, 3a and 3b</b>				
1	A15	Low	Temporary	Negligible
<b>Cottam 1</b>				
2	Till Bridge Lane	Low	Temporary	Negligible

3	Thorpe Lane	Medium	Temporary	Negligible
4	Stow Lane	Medium	Temporary	Minor
5	Ingham Road	Medium	Temporary	Negligible
6	Fleets Lane	Medium	Temporary	Negligible
7	Coates Lane (East of Normanby-by-Stow)	Medium	Temporary	Negligible
8	Willingham Road	Medium	Temporary	Negligible
9	South Lane	Medium	Temporary	Negligible
<b>Cottam 2</b>				
10	A631	Low	Temporary	Negligible
11	Access Road	Medium	Temporary	Negligible
<b>Cottam 3a and 3b</b>				
12	Kirton Road (B1205)	Medium	Temporary	Minor
13	Station Road	Medium	Temporary	Negligible

### Likely Effects: Severance

- 14.7.37 As stated, the IEMA Guidelines define severance as *“the perceived division that can occur within a community when it becomes separated by a major traffic artery”* (paragraph 4.27) that *“separates people from places”*, for example, difficulties crossing existing roads or the physical barrier of the road itself. The IEMA Guidelines go on to suggest that *“changes in traffic flow of 30%, 60% and 90% are regarded as producing slight, moderate and substantial changes in severance respectively”* (paragraph 4.31).
- 14.7.38 Whilst this is a useful guide, when baseline traffic flows are low, as is the case for many of the local roads within the study area, applying a percentage change in traffic to determine the effects for severance is not considered appropriate. For example, on Fleets Lane there is a 43% increase in traffic flows during construction. However, this only relates to 28 movements over a 24 hour period. This will result in just a negligible effect on severance. Therefore, professional judgement is also applied to judge the effects on severance.
- 14.7.39 None of the roads used are considered to act as a barrier that separates communities. The addition of construction traffic will not change this.
- 14.7.40 Where links within the study area connected to public rights of way, it could be argued that an increase in traffic as a result of the construction phase could make it more difficult to cross the road. On Stow Lane, for example, there is forecast to be an additional 286 two-way movements over the course of day during the construction phase. This is a 39% increase compared to the base. However, over the course of a 10 hour working day, this relates to less than one vehicle every two

minutes, which will not make it significantly harder to cross the road. Therefore, the effects on severance in these locations will be minor.

- 14.7.41 Therefore, the likely effects on severance during the construction phase is set out in **Table 14.21**. Where links connect to Public Rights of Way, the effects are considered to be minor and temporary. Elsewhere in the study area, the effects are considered to be negligible and temporary. In conclusion, the effects on severance are not considered to be significant.

**Table 14.21: Likely Effects on Severance**

Ref	Link	Sensitivity	Nature of Effect	Significance of Effects
<b>Cottam 1, 2, 3a and 3b</b>				
1	A15	Low	Temporary	Negligible
<b>Cottam 1</b>				
2	Till Bridge Lane	Low	Temporary	Minor
3	Thorpe Lane	Medium	Temporary	Minor
4	Stow Lane	Medium	Temporary	Minor
5	Ingham Road	Medium	Temporary	Minor
6	Fleets Lane	Medium	Temporary	Negligible
7	Coates Lane (East of Normanby-by-Stow)	Medium	Temporary	Negligible
8	Willingham Road	Medium	Temporary	Negligible
9	South Lane	Medium	Temporary	Negligible
<b>Cottam 2</b>				
10	A631	Low	Temporary	Negligible
11	Access Road	Medium	Temporary	Negligible
<b>Cottam 3a and 3b</b>				
12	Kirton Road (B1205)	Medium	Temporary	Negligible
13	Station Road	Medium	Temporary	Negligible

**Likely Effects: Driver Delay**

- 14.7.42 The IEMA Guidelines state that ‘delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system’.
- 14.7.43 Capacity assessments on local junctions have not been undertaken for the assessment. As stated, through the CTMP, construction vehicles will be coordinated to avoid peak hour travel, the period where capacity constraints may occur, and, where possible, there will be no construction traffic on roads within the study area between 08:00-09:00 or 17:00-18:00.
- 14.7.44 As with severance, applying a percentage change in traffic to determine the effects for driver delay is not considered appropriate when the baseline traffic flows are low. Whilst many of the rural links in the network have high percentage changes in traffic flows during the construction phase, they start from a low baseline. For example, Fleets Lane shows an 43% increase in traffic flows during the construction period. However, the baseline 2025 traffic flows are just 67 two way movements per day. This will increase to 95 two-way movements per day during the construction phase. In this instance, whilst the percentage change in traffic flows is high, there will not be any significant driver delay associated with 95 two-way movements per day.
- 14.7.45 As such, the likely effect of construction traffic on driver delay within the study area is considered to be negligible and temporary, which is not significant.

**Likely Effects: Pedestrian Delay (to include Cyclists)**

- 14.7.46 The IEMA Guidelines do not set out thresholds for judging the significance of changes in levels of pedestrian delay, and suggest that the assessor uses their judgement to determine whether pedestrian delay is a significant impact.
- 14.7.47 The level of pedestrian and cyclist activity on the roads and public rights of way surrounding the Site is low. The intention is for public rights of way to remain open during the construction phase. There may be some slight delay to pedestrian and cyclist movement if a construction vehicle is crossing the public right of way, but this is not likely to be material, and only in isolated locations. If temporary stopping up and diversions of public rights of way are required, they will be appropriately managed.
- 14.7.48 The likely effects on pedestrian delay during the construction phase are set out in **Table 14.22**. Where links connect to Public Rights of Way, the effects are considered to be minor and temporary. Elsewhere in the study area, the effects are considered to be negligible and temporary. In conclusion, the effects on pedestrian delay (to include cyclists) are not considered to be significant.

**Table 14.22: Effects on Pedestrian Delay (to include Cyclists)**

Ref	Link	Sensitivity	Nature of Effect	Significance of Effects –
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				Pedestrian Delay
<b>Cottam 1, 2, 3a and 3b</b>				
1	A15	Low	Temporary	Negligible
<b>Cottam 1</b>				
2	Till Bridge Lane	Low	Temporary	Minor
3	Thorpe Lane	Medium	Temporary	Minor
4	Stow Lane	Medium	Temporary	Minor
5	Ingham Road	Medium	Temporary	Minor
6	Fleets Lane	Medium	Temporary	Negligible
7	Coates Lane (East of Normanby-by-Stow)	Medium	Temporary	Negligible
8	Willingham Road	Medium	Temporary	Negligible
9	South Lane	Medium	Temporary	Negligible
<b>Cottam 2</b>				
10	A631	Low	Temporary	Negligible
11	Access Road	Medium	Temporary	Negligible
<b>Cottam 3a and 3b</b>				
12	Kirton Road (B1205)	Medium	Temporary	Negligible
13	Station Road	Medium	Temporary	Negligible

**Likely Effects: Pedestrian Amenity (including Fear and Intimidation and to include Cyclists)**

- 14.7.49 The IEMA Guidelines suggest that a threshold for judging Pedestrian Amenity would be “where the traffic flows (or its lorry component) is halved or doubled” (paragraph 4.39). As with other categories, applying a percentage change in traffic to determine the effects is not considered appropriate when the baseline traffic flows are low.
- 14.7.50 As stated, the level of pedestrian and cyclist activity on the roads surrounding the Site is very low meaning that the sensitivity receptor is low. However, it is acknowledged that the addition of HGVs to the network will affect the relative pleasantness of any pedestrian and cyclist journeys in the area. It is also acknowledged that a number of Public Rights of Way operate through the Site, although, as identified in Table 14.6, usage is relatively low. Notwithstanding this, there will be some effect on the relevant pleasantness of pedestrian journeys in these locations.

14.7.51 The likely effects on pedestrian (and cyclist) amenity during the construction phase is set out in **Table 14.23**. Where links connect to Public Rights of Way, the effects are considered to be minor and temporary. Elsewhere in the study area, the effects are considered to be negligible and temporary. In conclusion, the effects on pedestrian amenity (to include cyclists) are not considered to be significant.

**Table 14.23: Effects on Pedestrian Amenity (to include Cyclists)**

Ref	Link	Sensitivity	Nature of Effect	Significance of Effects - Pedestrian Delay
<b>Cottam 1, 2 and 3</b>				
1	A15	Low	Temporary	Negligible
<b>Cottam 1</b>				
2	Till Bridge Lane	Low	Temporary	Minor
3	Thorpe Lane	Medium	Temporary	Minor
4	Stow Lane	Medium	Temporary	Minor
5	Ingham Road	Medium	Temporary	Minor
6	Fleets Lane	Medium	Temporary	Negligible
7	Coates Lane (East of Normanby-by-Stow)	Medium	Temporary	Negligible
8	Willingham Road	Medium	Temporary	Negligible
9	South Lane	Medium	Temporary	Negligible
<b>Cottam 2</b>				
10	A631	Low	Temporary	Negligible
11	Access Road	Medium	Temporary	Negligible
<b>Cottam 3a and b</b>				
12	Kirton Road (B1205)	Medium	Temporary	Negligible
13	Station Road	Medium	Temporary	Negligible

**Likely Effects: Hazardous Loads**

14.7.52 Some deliveries to the Site during the construction phase will be regarded as 'hazardous loads'. These include the deliveries of lithium-ion batteries and transformer oil. All regulations for the movement of hazardous loads will be followed, and the appropriate documentation will be obtained.

14.7.53 There will be some abnormal loads to transport the transformers for the 132kV and 400kV substations. An abnormal load is one where the vehicle exceeds 44 tonnes, the width is over 2.9m or the length is more than 18.65m. These movements will be managed so that the potential effects are mitigated appropriately. Additional details are set out in the CTMP at **Appendix 14.2**.

14.7.54 Overall, it is considered that the likely effects of the construction traffic on hazardous loads will be negligible and temporary and therefore not significant.

Temporary Construction Phase: Cable Route Corridor / Grid Connection Route

14.7.55 This section summarises the likely effects associated with the movement of vehicles during the construction phase for the Grid Connection Route.

14.7.56 The Grid Connection Route will be approximately 27.5km in length, and is directed across open countryside. It will require crossings of railways, watercourses, various utilities, Public Rights of Way (PRoW) and roads. The Cable Route Corridor as indicated on the Works Plans is at least 50m in width in order to accommodate working areas, construction laydown areas, haul roads, open cut digging of trenches and horizontal directional drilling (HDD) where it may be required.

14.7.57 The final Grid Connection Route within the Cable Route Corridor, is subject to an iterative design process and detail design. For assessment purposes, the placing of the cable anywhere within the Cable Route Corridor has been considered, including the avoidance of environmentally sensitive locations.

14.7.58 The construction of the Grid Connection Route includes the following elements:

- Construction of Haul Road and Laydown Areas;
- Open Cut Excavation;
- Construction of Joint Bays; and
- Cabling/Joining.

**Construction Programme: Cable Route Corridor / Grid Connection Route**

14.7.59 The construction programme for the Scheme is set out in Chapter 4 of the ES. This forecasts that the construction period for the Grid Connection Route will be approximately 24 months. The Route will be construction in sections of approximately 4km at a time. Each section will take approximately 90 working days.

**Construction Vehicle Access: Cable Route Corridor / Grid Connection Route**

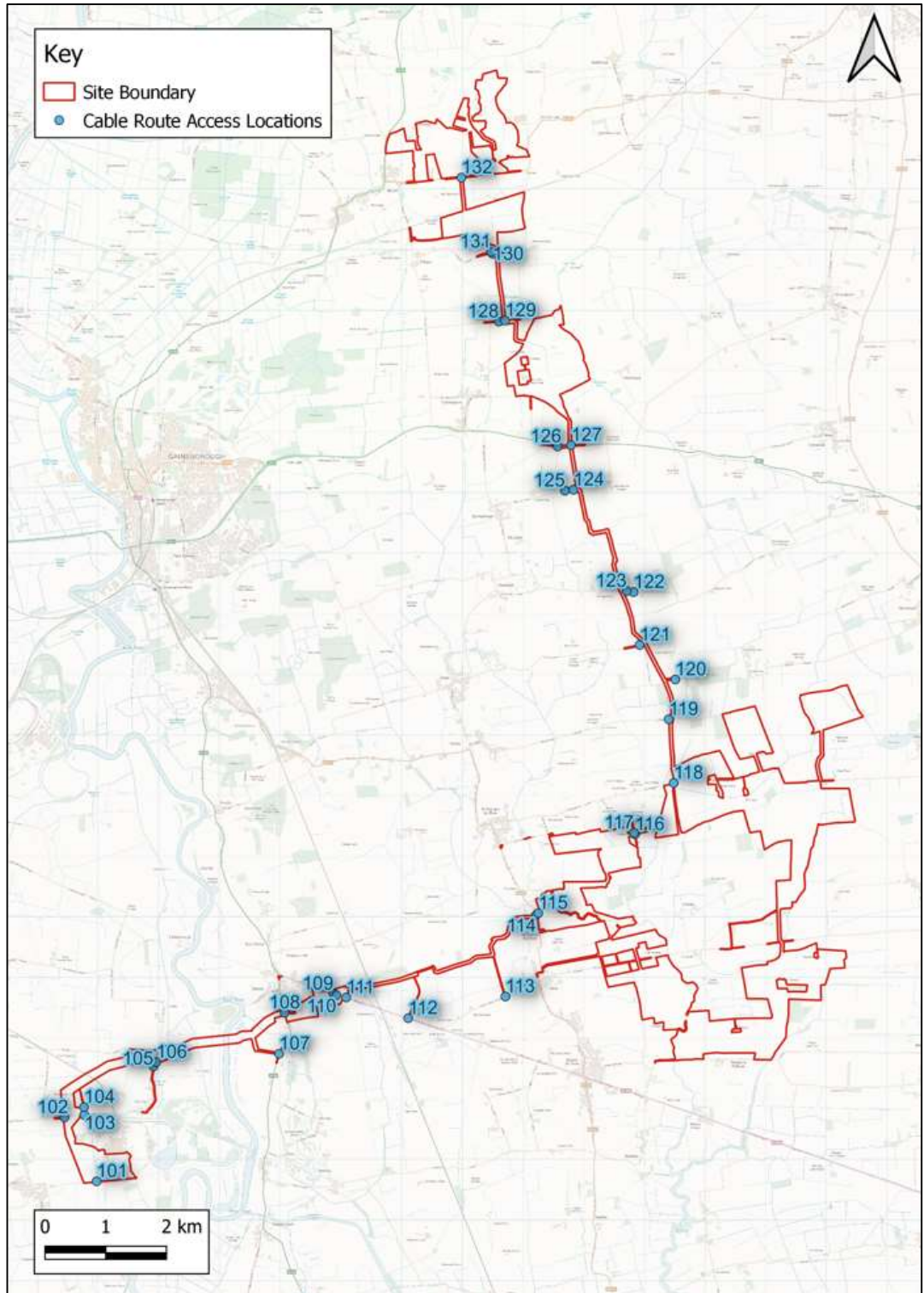
14.7.60 For the construction of the Grid Connection Route, 32 temporary accesses are required, approximately one every kilometer. The locations of these accesses are shown in **Figure 14.5**, and are on the following roads:

- Grid Connection Access 101 – Torksey Ferry Road (Nottinghamshire)
- Grid Connection Access 102, 103 and 104 – Cottam Road (Nottinghamshire);
- Grid Connection Access 105 and 106 – Headsted Bank (Nottinghamshire);

- Grid Connection Access 107 and 108 – A156 High Street south of Marton (Lincolnshire);
- Grid Connection Access 109, 110, 111 and 112 – A1500 Till Bridge Lane (Lincolnshire);
- Grid Connection Access 113 – Stow Park Road (Lincolnshire);
- Grid Connection Access 114 and 115 – B1241 Normanby Road (Lincolnshire);
- Grid Connection Access 116 and 117 – South Lane (Lincolnshire);
- Grid Connection Access 118 – Willingham Road (Lincolnshire);
- Grid Connection Access 119 – Glentworth Road (Lincolnshire);
- Grid Connection Access 120 – Kexby Road (Lincolnshire);
- Grid Connection Access 121 – Cow Lane (Lincolnshire);
- Grid Connection Access 122 and 123 – B1241 Common Lane (Lincolnshire);
- Grid Connection Access 124 and 125 – School Lane (Lincolnshire);
- Grid Connection Access 126 and 127 – A631 (Lincolnshire);
- Grid Connection Access 128 and 129 – Pilham Lane (Lincolnshire);
- Grid Connection Access 130 and 131 – Pilham Lane (Lincolnshire);
- Grid Connection Access 132 – B1205 Kirton Road (Lincolnshire);



Figure 14.5: Cable Route Corridor Access Locations



14.7.61 As stated, the Grid Connection Route will be built out in phases. Each access will be used for approximately 90 days during the construction phase. It is likely that around four or five accesses will be in use concurrently.

**Construction Traffic Flows: Cable Route Corridor / Grid Connection Route**

14.7.62 It is forecast that each access will generate up to eight arrivals and eight departures per day for the delivery of material and equipment. Around half of these will be HGV trips and half LGV trips. There will also be around 10 construction workers per access, arriving by car and shuttle bus.

14.7.63 HGV trips will largely consist of 10m tipper trucks. However, there will be a small number of abnormal load movements associated with cable drum deliveries as noted in the Outline CTMP.

14.7.64 As mentioned, each access will only be used for approximately 90 days during the construction phase.

**Construction Traffic Routes: Cable Route Corridor / Grid Connection Route**

14.7.65 A summary of the construction vehicle route for each access is set out below:

- Grid Connection Access 1 – A57 → Laneham Road → Retford Road → Torksey Ferry Road;
- Grid Connection Access 2, 3 and 4 – A57 → Laneham Road → Cottam Road
- Grid Connection Access 5 and 6 – A57 → Laneham Road → Cottam Road Headsted Bank;
- Grid Connection Access 7 and 8 – A57 → A156 High Street south of Marton;
- Grid Connection Access 9, 10, 11 and 12 – A15 → A1500 Till Bridge Lane;
- Grid Connection Access 13 – A1500 Till Bridge Lane → Stow Park Road;
- Grid Connection Access 14 and 15 – A1500 Till Bridge Lane → B1241;
- Grid Connection Access 16 and 17 – Through Cottam 1 Site → South Lane;
- Grid Connection Access 18 – Through Cottam 1 Site → Willingham Road;
- Grid Connection Access 19 – B1241 → Glentworth Road;
- Grid Connection Access 20 and 21 – A631 → Middle Street → Kexby Road;
- Grid Connection Access 22 and 23 – A631 → Common Lane;
- Grid Connection Access 24 and 25 – A631 → School Lane;
- Grid Connection Access 26 and 27 – A631 (Lincolnshire);
- Grid Connection Access 28 and 29 – A631 → Pilham Lane (Lincolnshire);
- Grid Connection Access 30 and 31 – B1205 → Station Road → Pilham Lane;
- Grid Connection Access 32 – B1205 Kirton Road;

14.7.66 Further information on the construction traffic routes is set out in the Outline CTMP, contained at **Appendix 14.2**.

**Further Assessment: Cable Route Corridor / Grid Connection Route**

14.7.67 As there will only be around 18 arrivals and departures per access per day over a short, 90-day period, a detailed assessment has not been undertaken. It is unlikely that the addition of these trips will trigger the need for further assessment in line with the IEMA guidelines (10% change in traffic flows on sensitive road or a 30% on non-sensitive road). If the thresholds are breached, it would mean that baseline traffic flows are very low. This, in itself, would mean that the effects of traffic flows in relation to the construction of the Grid Connection Route would not be significant.

14.7.68 Notwithstanding this, a summary of the likely effects is described below.

- **Accidents and Safety** – The low number of additional vehicle movements on the network associated with the construction of the Grid Connection Route will not result in any material effect on accidents and safety. Therefore the likely effect of the construction traffic associated with the Grid Connection Route on accidents and safety will be negligible and temporary and not significant;
- **Severance** – The low number of additional vehicle movements on the network associated with the construction of the Grid Connection Route will not result in any material effect on severance. Therefore the likely effect of the construction traffic associated with the Grid Connection Route on severance will be negligible and temporary and not significant;
- **Driver Delay** – For the most part, the low number of additional vehicle movements on the network associated with the construction of the Grid Connection Route will not result in any material effect on Driver Delay. However, where the Route crosses roads, there will be traffic management and temporary road closures which could result in some minor driver delay. Therefore the likely effect of the construction traffic associated with the Grid Connection Route on Driver Delay will be minor and temporary and not significant;
- **Pedestrian (and Cyclist) Delay** – For the most part, the low number of additional vehicle movements on the network associated with the construction of the Grid Connection Route will not result in any material effect on pedestrian delay. However, where the Route crosses public rights of way, pedestrian movement will have to be managed (and potentially diverted) for a short period. Therefore the likely effect of the construction traffic associated with the Grid Connection Route on Pedestrian Delay (and Cyclist) Delay will be minor and temporary and not significant;
- **Pedestrian (and Cyclist) Amenity** – For the most part, the low number of additional vehicle movements on the network associated with the construction of the Grid Connection Route will not result in any material effect on pedestrian amenity. However, where the Route crosses public rights of way, pedestrian

movement will have to be managed (and potentially diverted) for a short period. Therefore the likely effect of the construction traffic associated with the Grid Connection Route on Pedestrian Amenity (and Cyclist) Delay will be minor and temporary and not significant;

- **Hazardous Loads** – Whilst not hazardous, there will be abnormal loads to transport the cable drums to the Grid Connection Route construction areas. An abnormal load is one where the vehicle exceeds 44 tonnes, the width is over 2.9m or the length is more than 18.65m. These movements will be managed so that the potential effects are mitigated appropriately. Additional details are set out in the CTMP at **Appendix 14.2**. Therefore the likely effect of the construction traffic associated with the Grid Connection Route on Hazardous Loads will be negligible and temporary and not significant;

#### Summary of Effects during Construction

- 14.7.69 The likely effects of the Scheme during the construction phase, are summarised in **Table 14.24**.

**Table 14.24: Summary of Effects during Construction**

Ref	Link	Sensitivity	Nature of Effect	Accidents	Severance	Driver Delay	Pedestrian Delay	Pedestrian Amenity	Hazardous Loads
<b>Cottam 1, 2, 3a and 3b</b>									
1	A15	Low	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
<b>Cottam 1</b>									
2	Till Bridge Lane	Low	Temporary	Negligible	Minor	Negligible	Minor	Minor	Negligible
3	Thorpe Lane	Medium	Temporary	Negligible	Minor	Negligible	Minor	Minor	Negligible
4	Stow Lane	Medium	Temporary	Minor	Minor	Negligible	Minor	Minor	Negligible
5	Ingham Road	Medium	Temporary	Negligible	Minor	Negligible	Minor	Minor	Negligible
6	Fleets Lane	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
7	Coates Lane (East of Normanby)	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
8	Willingham Road	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
9	South Lane	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
<b>Cottam 2</b>									
10	A631	Low	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
11	Access Road	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
<b>Cottam 3a and 3b</b>									

12	Kirton Road (B1205)	Medium	Temporary	Minor	Negligible	Negligible	Negligible	Negligible	Negligible
13	Station Road	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
<b>Cable Route Corridor (grid connection)</b>		Low	Temporary	Negligible	Negligible	Minor	Minor	Minor	Negligible

### Operational Phase

- 14.7.70 During the Scheme's operational phase, there are anticipated to be around five visits to each Site per month for maintenance purposes. These would typically be made by light van or 4x4 type vehicles. Whilst each Site construction compound will have been removed at the end of the construction phase, space will remain within each Site on the access tracks for such a vehicle to turn around to ensure that reversing will not occur onto the highway. The access locations are set out in Table 14.12 and shown in Figure 14.4.
- 14.7.71 There will be no transport operational effects associated with the installed grid connection cables (within the Cable Route Corridor) as they will be located underground. Access may be required for maintenance, but this is only likely once or twice a year.
- 14.7.72 In light of this, effects on accidents and safety, severance, driver delay, pedestrian delay and amenity and hazardous loads during the operational phase of the Development are considered to be negligible or not significant. The effects will be long-term, as the design life of the Scheme is anticipated to be 40 years.

### Decommissioning Phase

- 14.7.73 The Scheme is anticipated to have a design life of approximately 40 years. At the end of the Scheme's operational life it will be decommissioned. The number of vehicles associated with the decommissioning phase are not anticipated to exceed the number set out for the construction phase, as set out in Table 14.16. An Outline Decommissioning Plan [EN010133/APP/APP/C7.2] has been prepared and a final Decommissioning Plan will be submitted to the local planning authority for approval prior to decommissioning. This will be secured by a requirement of the DCO.
- 14.7.74 In light of this, effects on accidents and safety, severance, driver delay, pedestrian delay and amenity and hazardous loads are considered to be the same as shown in Table 14.24, as a reasonable worst-case assessment. The effects will also be short term and temporary.

### Management/Mitigation Measures

#### **Construction and Decommissioning Phases**

- 14.7.75 Whilst no significant effects have been identified within this chapter, the following additional measures will be implemented:
- Public Right of Way Management Plan for the construction phase;
  - Traffic Management Measures, including signage at the B1205/B1398 crossroad and Stow Lane/Lincoln Road crossroad. This will warn drivers of the presence of construction traffic during the construction phase. Traffic marshals could also be utilised to ensure the safe passage of construction vehicles at these locations;

- Conduct a Stage 1 Road Safety Audit at all access junctions to recommend additional safety measures at the access points.

### **Operational**

- 14.7.76 No additional mitigation measures are proposed for the operation phase, above the embedded mitigation measures already set out in this chapter and given that there are not expected to be any significant effects as a result of the Scheme.

## **14.8 Residual Effects**

- 14.8.1 This section summarises the residual effects of the Scheme on Transport and Access after management and mitigation measures have been applied.

### **Construction Phase**

- 14.8.2 The likely residual effects of the Scheme during the construction phase, are summarised in **Table 14.25**. Table 14.25 shows that there are not expected to be any significant residual effects in relation to Transport and Access as a result of the construction of the Scheme.



**Table 14.25: Summary of Residual Effects during Construction**

Ref	Link	Sensitivity	Nature of Effect	Accidents	Severance	Driver Delay	Pedestrian Delay	Pedestrian Amenity	Hazardous Loads
<b>Cottam 1, 2, 3a and 3b</b>									
1	A15	Low	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
<b>Cottam 1</b>									
2	Till Bridge Lane	Low	Temporary	Negligible	Minor	Negligible	Minor	Minor	Negligible
3	Thorpe Lane	Medium	Temporary	Negligible	Minor	Negligible	Minor	Minor	Negligible
4	Stow Lane	Medium	Temporary	Negligible	Minor	Negligible	Minor	Minor	Negligible
5	Ingham Road	Medium	Temporary	Negligible	Minor	Negligible	Minor	Minor	Negligible
6	Fleets Lane	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
7	Coates Lane (East of Normanby-by-Stow)	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
8	Willingham Road	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
9	South Lane	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
<b>Cottam 2</b>									
10	A631	Low	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
11	Access Road	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
<b>Cottam 3a and 3b</b>									

12	Kirton Road (B1205)	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
13	Station Road	Medium	Temporary	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
<b>Cable Route Corridor (grid connection)</b>		Low	Temporary	Negligible	Negligible	Minor	Minor	Minor	Negligible

### **Operational Phase**

- 14.8.3 During the operational phase, the residual effects on accidents and safety, severance, driver delay, pedestrian delay and amenity and hazardous loads will remain negligible. Therefore, there are not expected to be any significant residual effects in relation to Transport and Access as a result of the operation of the Scheme.

### **Decommissioning Phase**

- 14.8.4 The Scheme is anticipated to have a design life of approximately 40 years. At the end of the Scheme's operational life it will be decommissioned. The number of vehicles associated with the decommissioning phase are not anticipated to exceed the number set out for the construction phase, as set out in Table 14.16. An Outline Decommissioning Plan [EN010133/APP/APP/C7.2] has been prepared and a final Decommissioning Plan will be submitted to the local planning authority for approval prior to decommissioning. This will be secured by a requirement of the DCO.
- 14.8.5 In light of this, effects on accidents and safety, severance, driver delay, pedestrian delay and amenity and hazardous loads for the decommissioning phase are considered to be the same as shown in Table 14.25, as a reasonable worst-case assessment. Therefore, there are not expected to be any significant residual effects in relation to Transport and Access as a result of the decommissioning of the Scheme.

## **14.9 Cumulative Effects**

### Construction Phase

- 14.9.1 A number of cumulative schemes are proposed in the local area. These have been identified through reviewing planning applications from the host authorities, and Nationally Significant Infrastructure Projects (NSIP). The following developments are considered to potentially have a transport and access effect on the Study Area in combination with the Scheme:
- **West Burton Solar Project** - A Solar NSIP broken down into three areas. West Burton 1 and 3 are located the south of the A1500 Till Bridge Lane with West Burton 2 located to the north of the A57;
  - **EDF West Burton C** – A gas fired power project at West Burton Power Station. Vehicles will access via the A631 and Saundby Road;
  - **Wood Lane Solar Farm** – A 49.9MW solar power project, located to the south of West Burton Power Station. Vehicles will access via the A631 and Saundby Road;
  - **Gate Burton Energy Park** – A solar NSIP scheme on land near Gate Burton. Accesses are located on the A156, away from the Cottam Site. However, 24% of construction traffic is expected to use the A1500 Till Bridge Lane; and

- **Tillbridge Solar** – A solar NSIP scheme on land to the south, east and south east of Gainsborough. All three accesses are located on the A631.

14.9.2 Table 14.26 sets out the additional traffic flows associated with these schemes.

**Table 14.26: Traffic Flows Associated with Cumulative Schemes**

Link	West Burton <sup>1</sup>	EDF West Burton C <sup>2</sup>	Wood Lane Solar Farm <sup>3</sup>	Gate Burton <sup>4</sup>	Tillbridge Solar <sup>5</sup>	Total
<b>Cottam 1, 2, 3a and 3b</b>						
A15	363	-	-	182	578	1,501
<b>Cottam 1</b>						
Till Bridge Lane	363	-	-	118	-	481
Thorpe Lane	-	-	-	-	-	-
Stow Lane	-	-	-	-	-	-
Ingham Road	-	-	-	-	-	-
Fleets Lane	-	-	-	-	-	-
Coates Lane (East of Normanby-by-Stow)	-	-	-	-	-	-
Willingham Road	-	-	-	-	-	-
South Lane	-	-	-	-	-	-
<b>Cottam 2</b>						
A631	-	226	40	90	578	1,020
Access Road	-	-	-	-	-	-
<b>Cottam 3a and 3b</b>						
Kirton Road	-	-	-	-	-	-
Station Road	-	-	-	-	-	-

- 1.Taken from West Burton PEIR. Only flows on the A15 and A1500 follow the same route as the Cottam Scheme;
- 2.Taken from West Burton C Transport and Access ES Table 7.3 – 226 worker movements plus 112 HGV movements all on A631;
- 3.Taken from Wood Lane Solar Farm Transport Assessment;
- 4.Taken from Gate Burton PEIR – 24% of 488 vehicle movements on A1500 and 13% on A631;
- 5.Taken from Tillbridge Solar ES Scoping Opinion – Peak of 64 HGVs stated (128 total). No information on construction worker vehicles. Assumed to be 450 in line with the Cottam Scheme

14.9.3 **Table 14.27** sets out the development flows within the study including the cumulative schemes.

**Table 14.27: Future Baseline (2025) Traffic plus Cumulative Schemes**

Ref	Link	Sensitivity	Base	Base plus Con	Base plus Cumulative	% Change*
<b>Cottam 1, 2, 3a and 3b</b>						
1	A15	Low	13,364	13,945	15,446	11%
<b>Cottam 1</b>						
2	Till Bridge Lane	Low	4,772	4,868	5,349	10%
3	Thorpe Lane	Medium	87	173	173	0%
4	Stow Lane	Medium	727	1,013	1,013	0%
5	Ingham Road	Medium	802	840	840	0%
6	Fleets Lane	Medium	67	95	95	0%
7	Coates Lane (East of Normanby-by-Stow)	Medium	5	15	15	0%
8	Willingham Road	Medium	129	276	276	0%
9	South Lane	Medium	129	209	209	0%
<b>Cottam 2</b>						
10	A631	Low	6,660	6,727	7,747	15%
11	Access Road	Medium	74	142	142	0%
<b>Cottam 3a and 3b</b>						
12	B1205 Kirton Road	Medium	1,695	1,827	1,827	0%
13	Station Road	Medium	2,279	2,326	2,326	0%

\*Compared to Base plus Development

14.9.4 Table 14.27 shows that traffic flows associated with the cumulative schemes will only affect links in the study area that have a low sensitivity. These roads are less sensitive to change compared to the more local/rural roads within the network, which will not be affected by the cumulative schemes. The percentage change on these roads is low. It should also be noted that it is incredibly unlikely that a scenario will occur whereby all cumulative schemes are constructed at the same time.

14.9.5 The cumulative effects on the local highway network surrounding the Grid Connection Route will also be low, as the cumulative Schemes will not use the same routes. It should be noted that sections of the Grid Connection Route for the Scheme

will be shared with Gate Burton and West Burton, although the residual effects will not change as a result of this.

- 14.9.6 Therefore, the cumulative effects will not change compared to the residual effects, that are set out in Table 14.25.

### **Operational Phase**

- 14.9.7 During the operational phase, the cumulative effects on accidents and safety, severance, driver delay, pedestrian delay and amenity and hazardous loads will remain negligible. Therefore, there are not expected to be any significant cumulative effects in relation to Transport and Access as a result of the operation of the Scheme.

### **Decommissioning Phase**

- 14.9.8 The cumulative effects on accidents and safety, severance, driver delay, pedestrian delay and amenity and hazardous loads for the decommissioning phase are considered to be the same as shown in Table 14.25, as a worst-case assessment. Therefore, there are not expected to be any significant cumulative effects in relation to Transport and Access as a result of the decommissioning of the Scheme.

### **Conclusions**

- 14.9.9 This chapter has set out and assessed the likely effects of the Scheme in relation to transport and access. Likely effects have been assessed for the construction, operation and decommissioning phases of the Scheme. The Scheme is not likely to result in any significant Transport and Access effects during the construction, operational and decommissioning phases. An Outline Construction Traffic Management Plan has been prepared to manage construction vehicle movement during the construction phase. This is shown in **Appendix 14.2** of the ES.