FENWICK SOLAR FARM

Fenwick Solar Farm

EN010152

Environmental Statement

Volume III Appendix 13-4: Transport Assessment

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Prepared for:
Fenwick Solar Project Limited

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Executive Summary

ES1 This Transport Assessment has been prepared in support of the proposed Fenwick Solar Farm Development Consent Order Application. This Appendix should be read in conjunction with **ES Volume I Chapter 13: Transport and Access [EN010152/APP/6.1]**.

ES2 The purpose of this Transport Assessment is to demonstrate that the Scheme will be acceptable in transport and highway terms and it follows pre-application discussions held with City of Doncaster Council (as the local highway authority for the Local Road Network) and National Highways (as the highway authority for the Strategic Road Network), where the extent of the Study Area for assessment in terms of highway impact was agreed.

ES3 With respect to transport and access, the mitigation measures that will be implemented (car sharing and minibuses) align the Scheme with relevant national and local policy, ensuring that sustainable transport modes are available for workers.

ES4 This Transport Assessment provides a summary of the accessibility of the Study Area via the surrounding highway network, as well as by public transport, cycling and on foot. It also considers road accident data for the most recently available relevant 5-year period. It can be concluded that there are no collision clusters that would be exacerbated by the Scheme.

ES5 Automatic Traffic Counts were carried out during July and December 2023 at 23 locations expected to be affected by traffic associated with the Scheme.

ES6 The Transport Assessment provides details of the anticipated characteristics of journeys generated by the construction and operation of the Scheme including movements of staff, heavy goods vehicles (HGVs) and tractor-trailers.

ES7 Months 1–12 are anticipated to be the peak construction months, with up to 250 members of staff working at the Scheme daily. In terms of vehicle trips, in the worst case, there will be 140 construction worker vehicles (280 two-way) per day.

ES8 During the construction phase, it is anticipated that there will be up to 18 artic HGVs (36 two-way) delivering across the Solar PV Site daily between the peak construction months. These deliveries will be directed to the Solar PV Site and Grid Connection Corridor and distributed among them.

ES9 An overall daily total of 316 two-way vehicle movements are expected per day. All trips generated will be outside of the network AM and PM peaks.

ES10 The following assessment scenarios have been examined in detail as part of the highway assessment:

a. Existing Baseline (2023);

b. Future Baseline (2028);

c. Peak Construction Phase (2028); and

d. Future Baseline with Peak Construction Phase (2028).

ES11 The following scenarios have also been reviewed:

a. Operational Phase (2030–2070); and

b. Decommissioning Phase (not earlier than 2070).

ES12 There will be a negligible percentage increase in traffic on most roads in the surrounding area. However, roads such as Moss Road, which have a low baseline, will experience a relatively high percentage increase in traffic. The low baseline is the reason for the higher percentage increase in traffic and therefore the overall impact is deemed not significant.

ES13 Several measures have been included as embedded mitigation within the ES and will be implemented to minimise the traffic impacts of the Scheme on the highway network during the construction and decommissioning phases. These measures include start and finish times that ensure that trips are outside of the network peak, promoting car sharing, and minibus provision. The measures will be secured through the DCO Application documents, primarily by the **Framework Construction Traffic Management Plan (CTMP) [EN010152/APP/7.17]**, as well as the **Framework Construction Environmental Management Plan (CEMP) [EN010152/APP/7.7]** for the construction phase, and the **Framework Decommissioning Environmental Management Plan (DEMP) [EN010152/APP/7.9]** for the decommissioning phase. During the operational phase, the trip generation will be negligible.

1. Introduction

1.1 Context

1.1.1 This Transport Assessment (TA) has been prepared in support of the proposed Fenwick Solar Farm (the 'Scheme') Development Consent Order (DCO) Application.

1.1.2 The Scheme would comprise the construction, operation and maintenance, and decommissioning of a solar photovoltaic (PV) electricity generating facility, with a total capacity exceeding 50 megawatts (MW) together with a Battery Energy Storage System (BESS), export and import connection to the national grid via the Existing National Grid Thorpe Marsh Substation.

1.1.3 The Order limits, shown on **ES Volume II Figure 1-2: Site Boundary Plan [EN010152/APP/6.2]**, identify the maximum extent of land anticipated to be acquired or used for the construction, operation and maintenance, and decommissioning phases of the Scheme. The Order limits cover an area of approximately 509 hectares (ha) in size, located entirely within the City of Doncaster Council's administrative area on predominantly agricultural land.

1.1.4 The Order limits are described in Section 2, and the Scheme, including the anticipated traffic, is described in Section 5 of this TA. Further information on the Scheme and Site is provided in **ES Volume I Chapter 2: The Scheme, ES [EN010152/APP/6.1]**.

1.2 Purpose of Report

1.2.1 The purpose of this TA is to demonstrate that the Scheme will be acceptable in transport and highway terms and it follows pre-application discussions held with City of Doncaster Council (as the local highway authority for the Local Road Network (LRN)) and National Highways (as the highway authority for the Strategic Road Network [SRN]).

1.2.2 This appendix should be read in conjunction with **ES Volume ! Chapter 13: Transport and Access [EN010152/APP/6.1]** and the **Framework CTMP [EN010152/APP/7.17]** submitted as part of the DCO Application.

1.3 Statutory Consultation

1.3.1 The Applicant conducted a statutory consultation on the Scheme between April and May 2024. A summary of the comments relating to transport and access, as well as the Applicant's responses to demonstrate how these comments have been addressed, are provided in the **Consultation Report [EN010152/APP/5.1]** which is submitted with the DCO Application.

1.3.2 A summary of the key themes in relation to transport and access, including how these have been considered and addressed, is set out within Table 1.

Table 1: Key Themes for Consideration

Topic	Considerations
Construction vehicles	Vehicle routing has been carefully considered, including reference to Heavy Goods Vehicles (HGV) where there is a routing strategy in place, which has been agreed with City of

Topic	Considerations
	Doncaster Council. The number of HGV trips during the peak construction phase has been identified. A **Framework CTMP [EN010152/APP/7.17]** has been prepared to provide further details of management and mitigation.
Construction workforce	The majority of construction workers will travel to/from the Solar PV Site by car or shuttle service, with limited potential to travel by sustainable modes because of its generally rural location. Measures have been considered to reduce the impact of the construction workforce in terms of additional vehicle movements on the surrounding network. Details of the strategy in terms of local and non-local staff and how they would travel to/from the Scheme have been provided in this TA and within the **Framework CTMP [EN010152/APP/7.17].**
Vehicle access	Construction vehicles will be required to access the Order Limits which comprises the Solar PV Site and Grid Connection Corridor. These areas will be served by selected access points on the road network.
Vehicle routing	An appropriate routing and access strategy has been identified to restrict HGVs from using certain sections of the local road network.
Vehicle Distribution	HGVs will follow routing strategy agreed with City of Doncaster Council. A gravity model has been used to distribute the worker vehicle movements. Shuttle buses will travel to/from key settlements to transport workers.
Road safety	The collision record has been reviewed for the surrounding highway network.
Construction assessment	The construction assessment identifies any potential impacts and mitigation required in support of the Scheme, based on the forecast increase in trips on local roads and junctions.
Operational assessment	The Scheme is expected to generate considerably fewer vehicle trips during the operational phase (compared to construction) and is not expected to have a significant impact on the surrounding highway network.
Decommissioning	The decommissioning effects of the Scheme are expected to be of a similar magnitude to the construction effects. On this basis, the construction phase is considered to have the greatest change on the surrounding transport network and the construction phase has therefore been used to identify the likely impacts of the decommissioning phase including whether any mitigation will be required.
Consultation and EIA scoping	Consultation has been held with various stakeholders throughout the preparation of this TA, as well as the ES. Further details of the responses received during the consultation are

Topic	Considerations
	included in the **Consultation Report [EN010152/APP/5.1]** which is submitted with the DCO Application.

1.4 Report Structure

1.4.1 The remainder of this TA is structured as follows:

a. **Section 2** sets out details relating to the Scheme location, existing use and surrounding area;

b. **Section 3** provides an overview of relevant national and local transport policies;

c. **Section 4** provides details of the Scheme accessibility by various travel modes including by vehicle, public transport, on foot and by bicycle;

d. **Section 5** provides details of the Scheme including the anticipated programme, vehicular access and pedestrian access arrangements;

e. **Section 6** sets out the forecast vehicular trip generation for the Scheme during construction, operation, and decommissioning;

f. **Section 7** sets out the forecast vehicular trip distribution for the Scheme during construction, operation, and decommissioning;

g. **Section 8** assigns the trips that will be generated onto the road network based on the expected vehicle distribution;

h. **Section 9** reviews other committed developments in the area including in terms of highway improvements and other schemes;

i. **Section 10** provides the highway impact assessment for the Scheme; and

j. **Section 11** provides a conclusion of the TA.

2. Site Location and Existing Use

2.1 Site Location

2.1.1 The Scheme lies within the administrative area of City of Doncaster Council, approximately 11 km from the city centre. It is located within areas of existing agricultural fields mostly under arable production, with some interspersed areas of pasture, trees hedgerows, woodland and farm access tracks.

2.1.2 The location of the Scheme is shown in **ES Volume II Figure 1-1: Scheme Location [EN010152/APP/6.2]** with the Order limits shown on **ES Volume II Figure 1-2: Site Boundary Plan [EN010152/APP/6.2]**. The different elements of the Order limits (Solar PV Site, Grid Connection Corridor, and the Existing National Grid Thorpe Marsh Substation) are shown in **ES Volume II Figure 1-3: Elements of the Site [EN010152/APP/6.2]**. In total all land within the Order limits, comprises approximately 509 hectares (ha) of land.

2.1.3 The Order limits also include a section of highway at the junction of the A19 and Station Road in the town of Askern to allow for abnormal indivisible load (AIL) vehicle access and escort.

2.1.4 Further information on the Scheme and Site is provided in **ES Volume I Chapter 2: The Scheme [EN010152/APP/6.1]**.

2.2 Surrounding Area

2.2.1 The landscape features immediately within the Study Area around the Scheme comprise several villages, including Fenwick, Moss and Sykehouse, as well as the hamlet of Topham.

2.2.2 To the west of the Order limits runs the A19, the M62 runs to the north and the M18 runs to the east of the Solar PV Site. Moss Road runs directly to the south of the Solar PV Site, in an east-west direction, providing access from the A19 to the access points.

2.2.3 There is an extensive network of Public Rights of Way (PRoW) both within the Solar PV Site and the surrounding area. Details of these are set out within Section 4 of this report and in the **Framework PRoW Management Plan [EN010152/APP/7.13]**.

2.3 Study Area

2.3.1 Due to the nature of the Scheme, the Study Area has been identified to cover a broad area within the surrounding highway network when considering the extent of the Solar PV Site itself, as well as the Grid Connection Corridor.

2.3.2 The Study Area includes areas of the highway network which, based on professional judgement and experience of other solar farm schemes of similar rural nature and size, are considered to be potentially at risk from possible direct and indirect impacts arising from the Scheme.

2.3.3 The extensive network of roads around the Solar PV Site is listed below and shown in **ES Volume II Figure 13-4: Study Area Road Network [EN010152/APP/6.2]**:

a. M62;
b. M18;
c. M180;
d. A19 Selby Road;
e. Moss Road;
f. Fenwick Common Lane;
g. Trumfleet Lane;
h. Marsh Road;
i. Thorpe Bank;
j. Fordstead Lane West;
k. Fordstead Lane East;
l. Kirkhouse Green Road;
m. West Lane;
n. Sykehouse Road;
o. A614;
p. Sour Lane; and
q. Fishlake Nab.

2.3.4 The extent of the Study Area for assessment in terms of highway impact has been agreed in consultation with National Highways as the highway authority, for the SRN and City of Doncaster Council as highway authority for the LRN.

2.3.5 Currently, no upcoming road network improvements are planned by City of Doncaster Council within the Study Area.

3. Policy Context

3.1 Introduction

3.1.1 A summary of the key transport policies and guidance relating to the Scheme is set out below. Further details are provided in **ES Volume III Appendix 13-1: Legislation, Policy and Guidance [EN010152/APP/6.3]**.

3.2 National Policy

National Policy Statements

3.2.1 The following National Policy Statements (NPS) have been considered in the context of transport and access, with further details provided in **ES Volume III Appendix 13-1: Legislation, Policy and Guidance [EN010152/APP/6.3]**:

a. Overarching National Policy Statement for Energy (EN-1) (November 2023) (Ref. 1);

b. National Policy Statement for Renewable Energy Infrastructure (EN-3) (November 2023) (Ref. 2); and

c. National Policy Statement for Electricity Networks Infrastructure (EN-5) (November 2023) (Ref. 3).

National Planning Policy Framework (December 2023)

3.2.2 The National Planning Policy Framework (NPPF) (December 2023) (Ref. 4) was originally published in March 2012 and later revised (the latest of which was in December 2023), outlining the Government's planning policies and how they will be applied.

3.2.3 This TA sets out the key guidance points of relevance to this application. The most relevant paragraphs in the context of transport are set out below:

3.2.4 Paragraph 108 outlines that *"…transport issues should be considered from the earliest of stages of plan-making and development proposals"*. This is to ensure that:

a. The potential impacts of development on transport networks can be addressed;

b. Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – e.g. in relation to the scale, location or density of development that can be accommodated;

c. Opportunities to promote walking, cycling and public transport use are identified and pursued;

d. The environmental impacts of traffic and transport infrastructure can be identified, assessed and considered – including appropriate opportunities for mitigation and for net gains in environmental quality; and

e. Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high-quality places.

3.2.5 Paragraph 109 states that significant development should focus on locations that can limit the need to travel and offer a genuine choice of transport modes, though this will vary between urban and rural areas which should be accounted for in both planning and decision-making.

3.2.6 Paragraph 114 outlines the key considerations when assessing sites to be allocated for development in plans or specific development applications. These are:

a. Appropriate opportunities to promote sustainable transport modes can be (or have been) taken up, given the type of development and its location;

b. Safe and suitable access can be achieved for all users;

c. The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance; and

d. Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost-effectively mitigated to an acceptable degree.

3.2.7 Paragraph 115 states that development should only be prevented or refused on highways grounds where there would be an unacceptable impact on highway safety or the residual cumulative impacts of development on the road network would be severe.

3.2.8 Within this context, Paragraph 116 states that development applications should:

a. Give priority first to pedestrian and cycle movements and then, as far as possible, facilitate access to high-quality public transport;

b. Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c. Create places that are safe, secure and attractive, which minimise the scope for conflicts between pedestrians, cyclists and vehicles;

d. Allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e. Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

3.2.9 As outlined in Paragraph 117, all developments that generate significant amounts of movement should be required to provide a Travel Plan, and the application should be supported by a Transport Statement or TA so that the likely impacts of the proposal can be assessed.

National Planning Practice Guidance

3.2.10 The Government's Planning Practice Guidance Travel Plans, TAs and Transport Statements in Decision Taking (2014) (Ref. 5) provides advice on when TAs and Transport Statements are required for planning applications,

and what they should contain. The most relevant paragraphs are set out below:

a. Paragraph 002 states that Travel Plans, TAs and Transport Statements are all ways of assessing and mitigating the negative transport impacts of development to promote sustainable development. They are required for all developments which generate significant amounts of movement.

b. Paragraphs 004 and 005 state that TAs primarily focus on evaluating the potential transport impacts of a development proposal and may propose mitigation measures to promote sustainable development and avoid unacceptable or 'severe' impacts where necessary.

c. Paragraph 006 states that TAs support national planning policy and can positively contribute to encouraging sustainable travel, reducing traffic generation and detrimental impacts, reducing carbon emissions and climate impacts, creating accessible, connected and inclusive communities, improving health outcomes and quality of life, improving road safety and reducing the need for new development to increase existing road capacity or provide new roads.

d. Paragraph 007 states that TAs should be established at an early stage and tailored to local circumstances, as well as proportionate to the size and scope of the proposed development. In addition, they should be brought forward through collaborative ongoing working between the local planning authority/transport authority, transport operators, rail network operators, as well as National Highways where there may be implications for the strategic road network and other relevant bodies.

e. Paragraphs 013 to 015 provide further details of when TAs are required, how the need and scope of a TA should be established and what information should be included.

3.3 Local Policy

Doncaster Local Plan 2015–2035

3.3.1 The Local Plan (Ref. 6) is based on the need to ensure sustainable development. It supports Doncaster's economic development by helping to meet the need for development within our Town and Borough. In doing so, it seeks to ensure that new development, and the necessary supporting infrastructure, are improved and/or delivered together.

3.3.2 In relation to transport, the Local Plan seeks to alleviate existing transport issues, implement new road infrastructure (where required to support economic objectives) and improve public transport access and options for walking and cycling to facilitate sustainable transport choices. Section 4 of this TA sets out the existing sustainable transport infrastructure surrounding the Scheme.

3.3.3 Several roads within the vicinity of the Scheme, including the M18 and M62 are identified as key routes that will be required to have effectively manage traffic, relieve congestion and ensure capacity to deliver future growth. The Scheme is not proposed to have any significant impact on these roads, as set out within Section 7 of this TA and within **ES Volume I Chapter 13: Transport and Access [EN010152/APP/6.1].**

3.3.4 Policy 13 states that new developments should make appropriate provisions for access by sustainable modes of transport to protect the highway network from residual vehicular impact. Although it is recognised that most trips to and from the Scheme will be made via vehicles, the **Framework CTMP [EN010152/APP/7.17]** and this TA set out the plans to encourage car sharing, alongside the provision of minibuses to and from the Solar PV Site, to minimise sole occupancy journeys and the associated impact on the highway network.

Doncaster Infrastructure Strategy 2019

3.3.5 The Doncaster Infrastructure Strategy (Ref. 7) outlines the investment requirements and funding mechanisms to support the delivery of growth set out in the Doncaster Local Plan. Types of infrastructure include highways, sustainable transport, and energy; all of which are recognised as critical or physical infrastructure.

3.3.6 According to the strategy, Section 106 agreements may be sought as a means of contribution between the local authorities and developers/land owners to mitigate the impact of a new development. Any planning obligation in relation to the Scheme must be:

a. Necessary to make the development acceptable in planning terms;

b. Directly related to the development; and

c. Fairly and reasonably related in scale and kind to the development.

3.4 Summary

3.4.1 With respect to transport and access, the overarching aims of national and local policy are to ensure that a development does not cause detriment to the operation of highway networks, and instead, provide opportunities for travel by sustainable modes.

3.4.2 This TA demonstrates that the Scheme aligns with relevant national and local policy, avoiding adverse impacts on highway safety or any severe residual cumulative mitigation on the road network. A **Framework CTMP [EN010152/APP/7.17]** has also been prepared.

4. Accessibility Appraisal and Existing Conditions

4.1 Overview

4.1.1 This section provides a summary of the accessibility of the Study Area via the surrounding highway network, as well as by public transport, cycling and on foot.

4.2 Highway Network

Strategic Highway Network

4.2.1 The M62 forms part of the SRN and is a 172 km motorway that connects Liverpool to Hull via Bradford and Leeds. The motorway generally has three lanes heading in each direction with the inclusion of a hard shoulder. The road is managed by National Highways and provides a link for onward strategic journeys in all directions.

4.2.2 The M18 is also located to the east of the Scheme which runs from Junction 35 of the M62 towards Doncaster towards the east of Sheffield in a southerly direction. The M18 is characterised by two lanes between the M18 Junction 5 and Junction 2 with three lanes on the remainder of the M18.

4.2.3 Furthermore, the M180 joins the M18 at Junction 5 near Stainforth which provides connections in an easterly direction towards the Humber Estuary and Scunthorpe, Grimsby, and Cleethorpes.

4.2.4 The M62 Junction 34 is approximately 11.5 km to the northwest of Fenwick, via the A18 and Moss Road. The M62 provides the nearest vehicular access from the SRN to the Scheme.

4.2.5 The M62 provides access from major urban areas such as Leeds to the northwest of the Scheme, as well as other small surrounding towns.

4.2.6 To the east the M62 meets the M18 at Junction 35, which provides access from areas to the north of the Humber Estuary such as Hull. This then leads to the M18 in which access to the Scheme is then achieved through the local road network which is described in the section below.

Local Highway Network

4.2.7 This section describes details surrounding the local highway network which is supported by the following figures from **ES Volume II Figure 13-4: Study Area Road Network [EN010152/APP/6.2]**.

4.2.8 The A19 runs for approximately 18 km between the M62 Junction 34 and St Mary's Roundabout in Doncaster to the west of the Scheme. The A19 passes through more built-up areas of Whitley to the north of the A19 and Askern, where it joins with Moss Road via a 3-arm signalised junction.

4.2.9 The A19 is characterised as a primary route with a single carriageway with a variable speed limit ranging between 60 mph in the areas with limited urban build-up and 30 mph within Askern itself with areas along the link also 40 mph. A level crossing is also present to the north of Askern adjacent to the Aldi store approximately 650 m from the A19/Station Road junction.

4.2.10 Moss Road is a single-carriageway road that runs west to east from the A19 through Askern and the village of Moss before changing to Kirkhouse Green Road just before the New Junction Canal near Kirkhouse Green.

4.2.11 Moss Road has a speed limit of 30 mph within Askern before changing to 50 mph on the eastern edge of the village which then continues until approximately 650 m to the west of the level crossing near the 3-arm priority with Fenwick Common Lane, where it changes to 40 mph. There are two separate HGV haulage businesses currently using Moss Road, one on Moss Road itself and one on West Lane. This indicates that HGVs are already using this road and that the route is likely suitable for these types of movements.

4.2.12 Fenwick Common Lane runs north from Moss Road for approximately 2 km before entering the village of Fenwick which then forms a junction with Lawn Lane and Fenwick Lane.

4.2.13 Fenwick Common Lane is characterised by a single-lane carriageway with no lane markings and no footways present on either side of the carriageway. The link is also subject to the national speed limit for much of the link before changing to 30 mph before entering Fenwick approximately 225 m on from the priority junction with Shaw Lane. During the construction phase, it is proposed that Fenwick Common Lane will provide access for inbound construction staff only. Other construction vehicles will use the main access off Moss Road. Main operational access to the Solar PV Site will be via Lawn Lane; the BESS Area and the On-Site Substation will also be accessible off Moss Road during operation.

4.2.14 Approximately 1 km along Fenwick Common Lane, Haggs Lane forms a priority junction that is used as an access to fields. A temporary blockade (heavy tyres/concrete blocks) has been placed across Haggs Lane to prevent vehicles other than those used by farmers from entering the fields. The Scheme proposals would include gating this entrance with a secure gate allowing vehicular access for the Scheme, the local farmers and the Internal Drainage Board (IDB) maintenance staff only.

4.2.15 PRoW Fenwick 16 exists on the northern side of Haggs Lane and separation between vehicles and the PRoW will be managed through the measures described in the **Framework PRoW Management Plan [EN010152/APP/7.13]** and secured within the **Framework CTMP [EN010152/APP/7.17].**

4.2.16 From the east, access towards the Scheme is achieved via the A614/Between Rivers Lane priority junction. The A614 runs in a north/south direction in which it forms a roundabout with the A1041 near the village of East Cowick before continuing into the village of Snaith.

4.2.17 The A1041 then continues north towards the A63 near Selby. From here the A63 links to both the A1(M) towards Leeds and north towards York along the A19. To the south, the A614 meets the SRN at M18 Junction 6 which then provides further access to the wider area as described in the SRN section above.

4.2.18 Between Rivers Lane is located approximately 1 km south of the A1041/A614 roundabout and is accessed from the east of the A614 via a large priority Bellmouth junction. Between Rivers Lane is characterised as a

rural single-carriageway with verges on either side subject to the national speed limit. Between Rivers Lane leads onto Oak Road near the PD Tattersall trucking depot.

4.2.19 Oak Road continues in an east/west direction onto Pincheon Green Lane, Marsh Hill Lane, Sykehouse Road, Broad Lane, West Lane, and then Flashley Carr Lane before forming into Moss Road in which the link then continues through Moss before meeting Fenwick Common Lane

4.3 Traffic Flows

Peak Hours

4.3.1 The following time periods have been reviewed to inform the assessment, based on the weekday summer construction working hours of 07:00–19:00. It should be noted that working hours will also include Saturdays from 07:00–13:00. There will be no work on Sundays or bank Holidays, unless crucial to construction (for example for Horizontal Directional Drilling (HDD) which must be a continuous activity) or in an emergency.

a. 06:00–07:00 – the arrival of construction staff in the morning (referred to as the AM development peak hour);

b. 08:00–09:00 – network AM peak hour;

c. 17:00–18:00 – network PM peak hour;

d. 19:00–20:00 – the departure of construction staff in the evening (referred to as the PM development peak hour); and

e. Daily (24 hours).

4.3.2 Winter working hours are expected to be shorter and worker numbers will fluctuate and may be reduced in winter depending on project timing by the chosen contractor. However, the worst-case scenario for traffic impacts is still expected to be within the 06:00–07:00 and 19:00–20:00 periods during summer months.

Baseline Data (2023)

4.3.3 To understand baseline traffic levels, ATC surveys were carried out at the following 23 locations with 13 of these surveyed during the week of Friday 14 to Thursday 20 July 2023 and the remainder conducted between Wednesday 6 to Tuesday 12 December 2023. The surveys carried out in December were undertaken to cover the roads potentially affected by traffic accessing the Grid Connection Corridor construction accesses. The surveys on the SRN were extracted from the National Highways WEBTRIS portal, which represents ATCs 1 to 6.

a. M62 West of J34;

b. M62 between J34 and J35;

c. M62 East of J35;

d. M18 between M62 J35 and M18 J6;

e. M180;

f. M18 between M18 J4 and J5;

g. A19 Selby Road – South of Station Road A19;
h. A19 Selby Road North of Station Road A19;
i. Moss Road – Askern Village;
j. Moss Road – East of Askern;
k. Fenwick Common Lane;
l. Trumfleet Lane – South of Moss;
m. Marsh Road;
n. Thorpe Bank;
o. Fordstead Lane West;
p. Fordstead Lane East;
q. Moss Road – East of Moss;
r. Kirkhouse Green Road;
s. West Lane – West of Sykehouse;
t. Sykehouse Road – East of Sykehouse;
u. A614;
v. Sour Lane; and
w. Fishlake Nab.

4.3.4 These locations provide a comprehensive set of traffic flows within the Study Area. The locations of these traffic counts are shown in **ES Volume II Figure 13-2: Traffic Survey Locations [EN010152/APP/6.2]**.

4.3.5 A summary of the baseline traffic data which has been utilised in support of this TA is set out in Table 2. This has been presented for the traditional weekday peak hours as well as the anticipated Scheme construction peak hours and across the day.

Table 2: Baseline Traffic Data 2023

ATC	Link Description	06:00-07:00	08:00-09:00	17:00-18:00	19:00-20:00	24 Hour AADT
1	M62 West of J34	2,763	4,017	4,761	2,001	59,494
2	M62 between J34 and J35	2,606	3,540	4,039	1,650	51,544
3	M62 East of J35	2,069	2,893	3,335	1,412	42,909
4	M18 between M62 J35 and M18 J6	2,326	3,098	3,569	1,573	46,686
5	M180	1,793	2,700	2,988	1,307	39,985
6	M18 between M18 J4 and J5	2,419	3,598	4,376	1,915	55,862
7	A19 Selby Road – South of Station Road A19	441	614	647	328	9,200

ATC	Link Description	06:00-07:00	08:00-09:00	17:00-18:00	19:00-20:00	24 Hour AADT
8	A19 Selby Road North of Station Road A19	501	908	908	558	13,802
9	Moss Road – Askern Village	154	358	326	212	5,129
10	Moss Road – East of Askern	106	229	207	132	3,302
11	Fenwick Common Lane	11	18	23	22	363
12	Trumfleet Lane – South of Moss	28	91	93	26	1,042
13	Marsh Road	39	117	98	26	1,240
14	Thorpe Bank	51	191	134	33	1,719
15	Fordstead Lane West	161	380	458	154	5,277
16	Fordstead Lane East	119	285	372	140	4,757
17	Moss Road – East of Moss	71	131	167	77	1,949
18	Kirkhouse Green Road	62	112	100	66	1,674
19	West Lane – West of Sykehouse	10	37	30	30	611
20	Sykehouse Road – East of Sykehouse	8	39	33	13	458
21	A614	196	305	91	179	4,915
22	Sour Lane	62	114	24	73	1,769
23	Fishlake Nab	45	111	14	93	1,842

** AADT = Average Annual Daily Traffic*

4.3.6 The 2023 traffic flows are also shown in the traffic flow diagrams within **ES Volume III Appendix 13-2: Traffic Flow Diagrams [EN010152/APP/6.3]**.

4.4 Collision Review

4.4.1 Personal Injury Collision (PIC) data has been obtained from City of Doncaster Council between January 2018 to March 2023. The data shows the number of collisions on relevant roads in the area.

4.4.2 A total of 51 collisions occurred over the five years within the accident Study Area, categorised as slight, severe, or fatal accidents. A slight collision is one in which at least one person has been slightly injured. A serious collision is one in which at least one person has been seriously injured and a fatal collision is one in which at least one person has been killed.

4.4.3 None of the collisions were recorded as fatal collisions. Table 3 provides a summary of collision by severity and year. This shows that the greatest number of collisions within the PIC Study Area occurred in 2020 with a total of 14 collisions recorded.

Table 3: Summary of PIC Data (2018–2023)

Year	Slight	Serious	Fatal	Total
2018	6	2	0	8
2019	6	6	0	12
2020	10	4	0	14
2021	3	2	0	5
2022	4	5	0	9
2023[1]	1	2	0	3
Total Number of Collisions	**30**	**21**	**0**	**51**

4.4.4 The data has been split to show collisions on road links, as shown in Table 4, and collisions that occurred at or near junctions, as shown in Table 5. The highest number of collisions (12) were recorded on the A19 Doncaster Road and Moss Road with the remaining links having significantly fewer recorded incidents.

Table 4: Summary of PIC Data by Road

Link	Slight	Serious	Fatal	Total
Broad Lane	1	0	0	1
Doncaster Road	3	1	0	4
Doncaster Road (A19)	6	6	0	12
Heyworth Lane	1	0	0	1
High Street (A19)	2	0	0	2
Instone Terrace	0	1	0	1
Market Place (A19)	2	1	0	3
Moss Road	6	6	0	12
Rushey Moor Lane	1	0	0	1
Selby Road	1	1	0	2
Selby Road (A19)	2	2	0	4
Selby Road (A614)	0	1	0	1
Sykehouse Road	0	1	0	1
Station Road	2	0	0	2
Sutton Road	1	0	0	1

[1] It should be noted that accident data for 2023 is only available up to March.

Link	Slight	Serious	Fatal	Total
Trumfleet Lane	1	1	0	2
West Lane	1	0	0	1
Total	**30**	**21**	**0**	**51**

4.4.5 As described previously, Table 5 shows the collisions that occurred at or close to junctions.

Table 5: Summary of PIC Data by Junction

Link	Slight	Serious	Fatal	Total
Broad Lane/Whispering Meadows	1	0	0	1
Doncaster Road (A19)/Manor Way	1	0	0	1
Doncaster Road (A19)/Rockley Lane	1	1	0	2
Doncaster Road (A19)/Rockley Road	0	1	0	1
Doncaster Road (A19)/Sutton Road	1	3	0	4
Doncaster Road/Sutton Road	1	0	0	1
High Street (A19)/Lakeside Rise	1	0	0	1
High Street (A19)/Station Road	1	0	0	1
Market Place (A19)/Station Road	2	0	0	2
Moss Road/Doncaster Road	3	0	0	3
Moss Road/Flashley Carr Lane	1	0	0	1
Moss Road/Kings Road	0	1	0	1
Moss Road/Old Green Lane	0	1	0	1
Moss Road/Sunnymede Avenue	0	1	0	1
Moss Road/Thompson Terrace	1	0	0	1
Rushy Moor Lane/Moss Road	1	0	0	1
Selby Road (A19)/Norton Common Road	2	0	0	2
Selby Road (A19)/Private Drive	0	1	0	1
Selby Road (A19)/Private Entrance	0	1	0	1
Selby Road/Campsall Road	1	0	0	1
Station Road/High Street (A19)	1	0	0	1
Station Road/Pool Avenue	1	0	0	1
Sutton Road/Doncaster Road (A19)	1	0	0	1

Link	Slight	Serious	Fatal	Total
Trumfleet Lane/Private Drive	0	1	0	1
Total	**21**	**11**	**0**	**32**

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

4.5 Public Transport

Bus

4.5.1 The area surrounding the Order limits is predominately rural in nature with only one bus route (51 Doncaster to Norton) within relative proximity of the Scheme, which runs through Askern off the A19 through a residential estate within Askern and then back onto the A19. However, this bus stop is approximately 4.3 km from the proposed site access into the Scheme.

4.5.2 There are bus stops along Moss Road and within Fenwick, however, these are designated as being school bus services and as such operate once in the morning and once in the afternoon. Therefore, these services would not be usable by the Scheme's staff.

4.5.3 The relative distance, the lack of sufficient safe footways and the lack of bus services within the area indicate that the existing public transport services will not be a viable option for workers seeking to use the bus to access the Solar PV Site.

Rail

4.5.4 The nearest rail facilities to the Order limits include Adwick (10 km), Hatfield and Stainforth (10.6 km) and Thorne North (14.7 km), to the west, south, and east respectively. As such, based on these distances and the lack of other public transport facilities alongside insufficient footway provision, using the train from these locations would likely be unviable for the Scheme's workers.

4.6 Walking, Cycling and Equestrian

4.6.1 The Scheme generally falls within a rural setting with local country lanes making up the predominant road type. As a result, there are limited footways and other pedestrian/cycle facilities in the area apart from in towns and villages such as Askern where there are footways present to facilitate pedestrian movements. These are generally located in the centre of the village providing access to shops and other community amenities.

4.6.2 There are no segregated footways present along Fenwick Common Lane with only grass verge present on both sides of the carriageway. To the south on Moss Road there are also no footways present meaning a continuous journey by foot would likely be undesirable to the Solar PV Site from the surrounding area.

4.6.3 There are no specific cycle facilities on local roads within the Study Area, such as advisory cycle lanes. The nearest section of the National Cycle Network is part of Route 62 and lies approximately 4 km to the east and

south of the Solar PV Site. It is therefore possible that some construction workers would cycle to the Solar PV Site, however due to proximity to population centres numbers are likely to be small (if any).

4.6.4 In terms of PRoW there are a variety of routes that cross the Solar PV Site (**ES Volume II Figure 2-2: Public Rights of Way [EN010152/APP/6.2]**). These include Footpath Fenwick 16 which continues along Haggs Lane in an east-west direction (the location of the access point) into the fields beyond. At the end of Haggs Lane, Footpath Fenwick 11 runs in a north-south direction towards the village of Fenwick to the north and into the fields to the south. Other PRoW continue off Footpath Fenwick 11 and Fenwick 16 within the Solar PV Site. PRoW Sykehouse 29 is also partly within the Solar PV Site.

4.6.5 Footpath Fenwick 10 runs in an east-west direction to the north of Haggs Lane and connects into the village of Fenwick to the west and into the fields towards Bunfold Shaw surrounding the Scheme to the east. Footpath Fenwick 14 runs from the terminus of Footpath Fenwick 16 in a north-south direction between Fenwick Footpath 10 to the north before terminating at the Ell Wood and Fenwick Grange Drain and continuing south from there towards Moss via the Footpath Moss 6. Footpath Fenwick 15 also runs through the Solar PV Site in an east-west direction just to the north of Fenwick Footpath 16 which then meets Footpath Fenwick 13. This runs in a north-south direction from Bunfold Shaw in the north before also terminating in the south at Ell Wood and Fenwick Grange Drain to the south before continuing onto the outskirts of Moss via Footpath Moss 7. Observations on site indicated that the routes are infrequently used, and generally used by people for dog walking and leisure purposes. In addition, it has been observed that several footpath bridges were showing vegetation growing completely across them indicating there had been no recent usage at all.

4.6.6 A number of PRoW also interact with the Grid Connection Corridor, as follows: Moss 6, 20 and 21, Thorpe in Balne 6, 7, 8, 11 and 13.

4.6.7 At this stage of the assessment, it is understood that these PRoW are the only ones that will be affected directly by the Scheme proposals. It should be noted that the routes as per the definitive map are also not necessarily used on the ground. **A Framework PRoW Management Plan [EN010152/APP/7.13]** has been produced as part of the DCO Application to establish any potential impacts on these PRoW and how these will be mitigated.

4.6.8 It is unlikely that construction workers would walk to the Solar PV Site or other areas of construction, due to distance to population centres, therefore numbers are likely to be small (if any).

4.6.9 Due to the presence of Fir Tree Farm Equestrian Centre and the Orchard Equine College and Equestrian Centre, which lie close to the Order limits, there is some equestrian usage of local roads, which will be managed through the **Framework CTMP [EN010152/APP/7.17]**.

4.7 Summary

4.7.1 In summary, it can be concluded that opportunities to support sustainable travel are mostly related to car sharing and the potential for the contractor to operate a worker minibus. People wishing to cycle will also be encouraged

and accommodated, but not relied on in terms of trip assessment. These opportunities have been further covered within the **Framework Construction Traffic Management Plan [EN010152/APP/7.17].**

4.7.2 Therefore, it has been assumed for assessment purposes that all staff working on-site in the Solar PV Site or at locations on the Grid Connection Corridor, will predominantly travel by private vehicles (sole occupancy or car sharing) or minibus (dependent on location).

5. The Scheme

5.1 Overview

5.1.1 This section of the TA provides further details of the Scheme including a summary of the Scheme and access arrangements, proposed construction programme, the construction, operational and decommissioning phases, vehicle types, routing, and parking arrangements, as well as pedestrian and cycle access.

5.1.2 The Design Principles for the Scheme have been assessed, as presented in **ES Volume I Chapter 2: The Scheme [EN010152/APP/6.1]**. These are the maximum parameters for the Scheme, and there are not expected to be any new, different or worse effects than what has been assessed for any scheme built within the Design Principles. The transport impact assessment is therefore based on the worst-case parameters in terms of daily construction staff and HGVs during the peak phase of construction (based on the Design Principles).

5.2 Scheme Summary

5.2.1 The Scheme will comprise the construction, operation (including maintenance), and decommissioning of a solar PV electricity generating facility with BESS where the 400 kV Grid Connection Cables would connect to the national grid, at the Existing National Grid Thorpe Marsh Substation.

5.2.2 The Scheme comprises the following components:

a. Solar PV Site – the total area covered by the ground-mounted Solar PV Panels, planting and mitigation areas, Field Stations, Battery Energy Storage System (BESS), On-Site Substation, and associated infrastructure;

b. Grid Connection Corridor – the area outside the Solar PV Site in which the 400 kilovolt (kV) and associated cables (the Grid Connection Cables) would be installed between the On-Site Substation to the Existing National Grid Thorpe Marsh Substation (approximately 6 km south of the Solar PV Site);

c. Existing National Grid Thorpe Marsh Substation – the Existing Thorpe Marsh substation (owned and operated by National Grid) where the 400 kV Grid Connection Cables would connect to the National Electricity Transmission System (NETS); and

d. A section of highway at the junction of the A19 and Station Road in the town of Askern to allow for Abnormal Indivisible Load (AIL) vehicle access and escort.

5.2.3 The feasibility of connecting the On-Site Substation via a line drop from existing overhead power lines running north-south across the east of the Solar PV Site is also being explored instead of the Grid Connection Corridor. The determination of this option's viability by National Grid will only be possible after the DCO consent has been granted.

5.2.4 Should the Grid Connection Line Drop option be feasible, this would supersede the requirement for Grid Connection Cables exiting the Solar PV Site, and the Grid Connection Line Drop Cables would be confined to the

Solar PV Site; in this event, the associated working areas within the Grid Connection Corridor would no longer form part of the Solar PV Site or Scheme. If the Grid Connection Corridor does not proceed, the impacts associated with this element of the Scheme will not be applicable.

Solar PV Site

5.2.5 The Solar PV Site area is approximately 407.3 ha comprised predominantly of agricultural fields.

5.2.6 At the closest point, the Solar PV Site Boundary is located immediately adjacent to the east of the village of Fenwick and approximately 1 km west and 1 km north of the villages of Sykehouse and Moss respectively. The closest residential properties are located within 10 m of the Order limits, however, due to the provision of buffers and land for landscaping and habitat creation/enhancement, the actual distance of separation between residential properties and Solar PV Panels, Field Stations, the On-Site Substation and the BESS Area would be considerably greater, as shown in the indicative layout presented in **ES Volume II Figure 2-3: Indicative Site Layout Plan [EN010152/APP/6.2]**.

5.2.7 Any affected PRoW will be temporarily diverted around each works area during the Solar PV panel installation, with the exception of PRoW Sykehouse 29, Fenwick 14 and Moss 6 which will be permanently diverted (Fenwick 14 during operational phase only) as shown in **ES Volume II Figure 2-2: Public Rights of Way [EN010152/APP/6.2]**. Temporary Traffic Management will also be implemented where roads are affected. Details are outlined further in the **Framework PRoW Management Plan [EN010152/APP/7.13].**

Grid Connection Corridor

5.2.8 The Grid Connection Corridor runs for approximately 6.3 km from the Solar PV Site to the Existing National Grid Thorpe Marsh Substation.

5.2.9 The Grid Connection Corridor has an average width of 60 m. It incorporates several wider areas, for example, to allow additional working areas for HDD and temporary construction compounds, or narrows to avoid sensitive receptors such as habitat designations, residential and commercial properties, and cultural heritage assets. The width of the Grid Connection Corridor allows for a degree of flexibility as the Scheme design develops; in practice, the working width required for cable installation would be narrower (30 m).

5.2.10 The Grid Connection Corridor is shown in **ES Volume II Figure 1-2: Site Boundary Plan [EN010152/APP/6.2].** The land within the Grid Connection Corridor is predominantly agricultural in nature and, where practicable, cable routing would be to the edge of fields to minimise impacts. All cables would be buried. There is no requirement for overhead electricity cables to be used or constructed as part of the Scheme.

5.2.11 The Grid Connection Corridor crosses several PRoW as shown on **ES Volume II Figure 2-2: Public Rights of Way [EN010152/APP/6.2]**. It should be noted that not all PRoW that cross the Grid Connection Corridor will need to be diverted, where construction methods including Horizontal Directional Drilling can be utilised. Temporary Traffic Management will also be

implemented where roads are affected. Details are outlined further in the **Framework PRoW Management Plan [EN010152/APP/7.13]**.

5.2.12 However, as previously mentioned, the feasibility of connecting the On-Site Substation via a line drop from existing overhead power lines running north-south across the east of the Solar PV Site is also being explored instead of the Grid Connection Corridor. If the Grid Connection Line Drop is used, the traffic impacts associated with the Grid Connection Corridor will be removed.

5.3 Programme

5.3.1 The anticipated construction, operational, and decommissioning phases are as follows:

a. Construction (not earlier than 2028);

b. Operational (not earlier than 2030–2070); and

c. Decommissioning (not earlier than 2070).

5.3.2 The design life of the Scheme is 40 years with decommissioning to commence 40 years after final commissioning.

Construction

5.3.3 The nature of the Scheme is such that the greatest impact is likely to occur during the construction and decommissioning phases. Subject to the DCO for the Scheme being granted, the earliest construction could start is in 2028, being built over an estimated 24 months. The construction programme is contained within the **Framework CTMP [EN010152/APP/7.17]**.

5.3.4 It is not considered that a short delay in construction would result in a change to the conclusions of this TA. Should there be a delay of up to 5 years to the start of construction, cumulative developments may have been completed by the time the construction phase begins, which would elevate the trips on the local road network in the future baseline. A higher baseline flow would reduce the proportional impact that the Scheme has on the road network, and this would reduce or maintain the levels of effect presented in this TA.

Operation

5.3.5 Subject to the DCO being granted, the earliest the Scheme is expected to be operational is by 2030. A minimal level of activity is expected across the Solar PV Site during the operational phase up until decommissioning.

5.3.6 During operation and maintenance, activity on the Solar PV Site would be restricted principally to vegetation management, equipment maintenance and servicing, ad hoc replacement of any components that fail or reach the end of their lifespan, periodic fence inspection, monitoring to ensure the continued effective operation and maintenance of the Scheme and other ancillary activities.

5.3.7 Along the route of the Grid Connection Cables, operation and maintenance activity would consist of routine inspections and any reactive maintenance such as where a cable has been damaged.

5.3.8 There should be no requirement for regular HGV movements during the operation and maintenance of the Scheme. Limited use of HGVs will be required for the replacement of batteries, inverters and transformers associated with the Field Stations and the BESS Area. It has been assumed that during the replacement activity up to five pieces of equipment will be replaced per day (equating to 10 two-way HGV movements) over a period of several months, every ten years during operation.

5.3.9 AIL movements during the operation and maintenance phase are not anticipated due to the delivery of spare transformer phases during construction.

5.3.10 It is anticipated there will be up to two permanent staff on-site at any one time during the operation and maintenance phase, based at the Operations and Maintenance Hub. Additional staffing/visitors, such as maintenance workers and deliveries, would be ad hoc as needed. It is assumed this would equate to an average of four additional workers per month.

5.3.11 It is anticipated that any components which are removed (replaced), other than larger equipment such as batteries and inverters, would be transported to the Scheme's storage facilities in the existing barn in Field NW08 (by transit van or similar LGV). Once a sufficient volume of waste has been accumulated to make a 'load' for transport offsite, it is anticipated that these movements would also be undertaken by LGV (not by HGV).

5.3.12 Currently existing field accesses are proposed for the operational access where this is practicable and would reuse construction accesses. Main operational access to the Solar PV Site will be via Lawn Lane. Any BESS Container replacements will be delivered via the Moss Road access. Emergency access to the BESS Area and the On-Site Substation will be provided via Fenwick Common Lane/Haggs Lane and from Moss Road; at the Fenwick Common Lane/Haggs Lane access point emergency vehicles will be able to enter the Solar PV Site however all egress would be via Moss Road. Access to the Solar PV Site off West Lane will be for emergency use only. **ES Volume II Figure 2-3: Indicative Site Layout Plan [EN010152/APP/6.2]** illustrates the existing and proposed accesses.

5.3.13 These low levels of operation and maintenance traffic would remain for the operational lifetime of the Scheme which is 40 years with decommissioning to commence 40 years after final commissioning. Therefore, the predicted impacts would not be influenced by the operation and maintenance phase extending beyond 2070 (i.e. the predicted start of decommissioning) if the start of the construction phase was delayed.

5.3.14 The impact of additional development-generated traffic on the surrounding road network during the construction and decommissioning phases is anticipated to be the most significant stage of the Scheme, with the operation and maintenance phase anticipated to create much less traffic.

5.3.15 Therefore, as predicted traffic levels owing to the operation and maintenance phase are minimal, operation and maintenance effects are therefore expected to be negligible.

Decommissioning

5.3.16 For the purposes of the EIA, the decommissioning assessment year is assumed to be 2070 or later, as described in **ES Volume I Chapter 5: EIA Methodology [EN010152/APP/6.1]**. The decommissioning phase is expected to be similar in duration and nature to the construction phase and could be phased. It is expected that fewer road trips will be required, particularly if cables are left in situ which will be determined in accordance with good industry practice at the time.

5.3.17 Therefore, as the decommissioning phase is planned to commence 40 years after final commissioning, leading to significant levels of uncertainty in forecasting traffic that far into the future and as it is likely to result in no more traffic than the construction phase, decommissioning is expected to lead to effects that are no worse than during construction. The decommissioning phase has therefore not been specifically quantified and the effects and mitigation for construction are considered applicable for decommissioning and represent a worst-case scenario.

5.4 Vehicle Types, Plan Requirements and Abnormal Loads

5.4.1 It is expected that construction vehicles accessing the Solar PV Site will consist of the following:

a. Cars;
b. Small vans;
c. 10 m rigid vehicles;
d. Max articulated lorries (HGVs);
e. Tractor-trailer vehicle (up to 12 m in length) (for internal or ad-hoc movements of materials on the road network);
f. Mobile cranes; and
g. AILs.

5.4.2 AILs will be associated with the implementation of the On-Site Substation, with up to five AILs anticipated to be delivered during the period of construction.

5.4.3 Swept Path Analysis has been carried out at potential pinch points identified along key roads on the local road network, to ascertain whether HGVs and other vehicles are able to safely access the Solar PV Site. This analysis has subsequently informed the routing of vehicles.

5.4.4 All large vehicles and other AILs will be required to follow routing strategy agreed with City of Doncaster Council when travelling to/from the Solar PV Site.

5.4.5 As previously mentioned, a **Framework CTMP [EN010152/APP/7.17]** has been prepared in support of the DCO Application which provides further details of the construction phase of the Scheme in terms of how construction vehicles will be managed. This also includes the swept path drawings along with further details of traffic routing.

5.5 Vehicle Access Arrangements and Routing

5.5.1 Access to the Solar PV Site will be taken from either Fenwick Common Lane/Haggs Lane (Access Point 4) or from Moss Road (east of Moss Village) (Access Point 1). Fenwick Common Lane/Haggs Lane will only be used for a proportion of inbound car/minibus movements (e.g. one-way traffic movement).

5.5.2 Further details of access points, including the location of the access point references are provided in **ES Volume II Figure 2-4: Location of Temporary Construction Compounds and Indicative HDD Areas [EN010152/APP/6.2]**.

5.5.3 The access proposals are described further below:

a. Staff vehicle movements:
    i. 75% of all staff movements enter via Fenwick Common Lane/Haggs Lane access;
    ii. 25% of all staff movements enter via Moss Road access;
    iii. 100% of all staff movements exit via Moss Road access;
b. HGV and AIL movements:
    i. 100% of all HGV and AIL movements will enter/exit via Moss Lane access.

5.5.4 The access arrangements to the Grid Connection Corridor are as follows:

a. Staff and HGV vehicle movements:
    i. 100% of all staff and HGV movements will enter/exit via Trumfleet Lane (South of Moss)/Marsh Road/Thorpe Bank.

5.5.5 Worker vehicles and minibuses will all turn onto Station Road from the A19 (High Street/Market Place), continuing onto Moss Road. Access to the Solar PV site for a proportion of the vehicles will then be sought by turning left onto Fenwick Common Lane, then accessing at Access Point 4 (shown on **ES Volume II Figure 2-4: Location of Temporary Construction Compounds and Indicative HDD Areas [EN010152/APP/6.2]**).

5.5.6 HGVs will also travel onto Station Road from the A19 (High Street/Market Place) and then continue onto Moss Road and turn into the Solar PV Site access at Access Point 1 (shown on **ES Volume II Figure 2-4: Location of Temporary Construction Compounds and Indicative HDD Areas [EN010152/APP/6.2]**), avoiding travelling through local villages and more unsuitable roads to the east of the Solar PV Site.

5.5.7 It is not considered feasible for any deliveries to be made using waterways or railways, as the Scheme is not located near a suitable waterway or railway to facilitate access.

5.6 Car and Cycle Parking

5.6.1 During the construction and decommissioning phases, parking will be provided at the Solar PV Site, as well as at temporary construction compounds for the Grid Connection Corridor.

6. Trip Generation

6.1.1 This section provides details of the anticipated travel characteristics of trips generated by the Scheme during the construction, operational and decommissioning phases. It should be noted that there is very limited information within the TRICS trip generation database for solar farms and a first principles approach has therefore been adopted to derive the anticipated vehicle trip attraction, as agreed with City of Doncaster Council. This methodology is based on professional judgement and information received from the project team.

6.1.2 The forecast vehicle trips associated with each phase based on the peak level of activity expected throughout the 24-month construction phase, during the peak hours and across the day has been identified. The peak of construction in terms of generated trips is anticipated to be between Months 1–12 of the construction programme.

6.1.3 As stated, the peak year of construction is expected to be 2028 and as such this has been adopted as part of this assessment.

6.2 Construction Staff

6.2.1 The current estimate is that a peak of 250 Full Time Equivalent (FTE) workers will be on-site per day split between the Solar PV Site and Grid Connection Corridor. These numbers include workers associated with the construction of the Solar PV Site and the Grid Connection Cables.

6.2.2 During construction, there is expected to be a total of up to five AIL movements associated with the delivery of transformers to the On-Site Substation.

6.2.3 To minimise the number of vehicle trips generated, the contractor will be expected to use minibuses to transport workers during the peak stages of construction. For the purposes of the assessment, it is assumed that the contractor will use minibuses to transport some construction workers to/from key towns/cities where significant numbers of people could originate. Based on the population weighting exercise carried out to inform traffic distribution (see Table 8), proportions of construction workers that could be expected to use the minibuses have been assumed. This indicated a proportion of 40% (estimated 100 out of 250 workers) that could be expected to use the proposed minibus services.

6.2.4 Minibuses (e.g. a 25-seater has been assumed) would be allocated where needed, with double the required amount assumed. This has been done to reflect inefficiencies and to ensure a robust assessment.

6.2.5 This equates to a requirement of 8 minibuses per day to transport an estimated 100 workers out of the 250 total workforce.

6.2.6 Of the remaining 150 workers not expected to use the minibus services, approximately 55% (84) of workers will be targeted for car-sharing measures. This percentage has been assumed based on the general uptake of car sharing and propensity to car share at other solar developments such as Longfield and Gate Burton, which are both Nationally Significant Infrastructure Projects (NSIPs) that were granted development consent in 2023.

6.2.7 Based on a realistic car share assumption of an average of 1.5 workers per car (based on the experience of car usage at other solar farm construction sites), this would result in 56 one-way car movements in the AM and PM. This number can then be added to the remaining 45% (68) of workers using their own car to travel to the Scheme and the 8 movements (16 two-way) associated with the minibuses, totalling 140 staff movements in the AM and PM (124 cars one-way and 16 minibuses two-way).

6.2.8 Therefore, for the purposes of the assessment there would be a total of 140 arrival vehicle trips during the morning development peak hour (06:00-07:00) and 140 departure vehicle trips during the evening development peak hour (19:00-20:00) in the summer months.

6.2.9 During the winter months, worker numbers may be reduced, with the workers possibly arriving at the Solar PV Site later and departing the Solar PV Site earlier and working shorter hours. These traffic movements would still occur outside the network peak hours, so these key periods would not be impacted. In addition, the percentage increase in traffic would likely be lower in this situation due to higher traffic baseline in later hours in the AM period and earlier hours in the PM period. The assessment of worker traffic during the summer months therefore represents a robust worst-case scenario.

6.3 Construction HGVs

6.3.1 In terms of HGVs, it is estimated there would be a peak of up to 18 HGV deliveries (including waste removal) per day (18 movements in and 18 movements out). These numbers include HGVs associated with the construction of the Solar PV Site and the Grid Connection Cables.

6.3.2 Table 6 provides an overview of the trip generation by vehicle type within each of the time periods.

Table 6: Trip Generation by Time Period

Time Period	**Cars**	**Minibuses**	**HGVs**	**Total**	Total (Two-Way)
	In/Out	In/Out	In/Out	In/Out	
06:00-07:00	124/0	8/8	0	132/8	140
08:00-09:00	0	0	0	0	0
09:00-17:00	0	0	36/36	36/36	36/36
17:00-18:00	0	0	0	0	0
19:00-20:00	0/124	8/8	0	8/132	140
24 hr AADT	**248**	**32**	**36**	**-**	**316**

6.3.3 It is noted that currently there are no movements of either workers or HGVs within the traditional network peak hours of 08:00-09:00 or 17:00-18:00, as per the mitigation measures that have been committed to, to ensure that the

impact on the network is minimal. There would also be no HGV movements between 06:00-07:00 and 19:00-20:00.

6.4 Peak Construction

6.4.1 As shown in Table 6, it is anticipated that the maximum daily trip generation will be as follows:

a. 280 daily two-way construction worker vehicle movements, including:

i. 248 private worker vehicles (two-way) e.g. 124 arriving in the AM and 124 departing in the PM;

ii. 32 minibuses (two-way) e.g. 8 arriving and 8 departing in the AM (16 two-way) and 8 arriving and 8 departing in the PM (16 two-way);

b. 36 daily two-way HGV movements (18 in and 18 out) are anticipated to be travelling to and from the Solar PV Site daily during this period.

c. A total of 316 daily two-way vehicle movements.

6.4.2 Should concrete blocks be required to be installed in areas of archaeological mitigation, the delivery of these concrete blocks would require approximately 1 HGV per day (2 two-way HGV movements) as a worst-case scenario based on the **Draft Archaeological Mitigation Strategy [EN010152/APP/7.19]**, although it is likely that the analysis of trial trenching results will reduce the extent of areas requiring concrete blocks, and fewer deliveries will be required. Therefore, it has been assumed that the peak HGV count assumption of 36 two-way movements does not need changing to account for the delivery of concrete block foundations.

6.4.3 The daily profile of construction trips travelling in and out of the Order limits during the construction phase is presented in Table 7.

Table 7: Daily Profile of Generated Trips

	Cars and Minibuses			HGVs			
Time	**In**	**Out**	**Two-Way**	**In**	**Out**	**Two-Way**	**Total (Two-Way)**
00:00-01:00	0	0	0	0	0	**0**	**0**
01:00-02:00	0	0	0	0	0	**0**	**0**
02:00-03:00	0	0	0	0	0	**0**	**0**
03:00-04:00	0	0	0	0	0	**0**	**0**
04:00-05:00	0	0	0	0	0	**0**	**0**
05:00-06:00	0	0	0	0	0	**0**	**0**
06:00-07:00	132	8	140	0	0	**0**	**140**
07:00-08:00	0	0	0	0	0	**0**	**0**

	Cars and Minibuses			HGVs			
Time	**In**	**Out**	**Two-Way**	**In**	**Out**	**Two-Way**	**Total (Two-Way)**
08:00-09:00 (AM Network peak)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
09:00-10:00	0	0	0	2	2	**4**	**4**
10:00-11:00	0	0	0	2	2	**4**	**4**
11:00-12:00	0	0	0	2	2	**4**	**4**
12:00-13:00	0	0	0	3	3	**6**	**6**
13:00-14:00	0	0	0	3	3	**6**	**6**
14:00-15:00	0	0	0	2	2	**4**	**4**
15:00-16:00	0	0	0	2	2	**4**	**4**
16:00-17:00	0	0	0	2	2	**4**	**4**
17:00-18:00 (PM Network peak)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
18:00-19:00	8	132	140	0	0	**0**	**140**
19:00-20:00	0	0	0	0	0	**0**	**0**
20:00-21:00	0	0	0	0	0	**0**	**0**
21:00-22:00	0	0	0	0	0	**0**	**0**
22:00-23:00	0	0	0	0	0	**0**	**0**
23:00-00:00	0	0	0	0	0	**0**	**0**
Total	**140**	**140**	**280**	**18**	**18**	**36**	**316**

6.4.4 The peak hours of generated traffic from the development are anticipated to be between 06:00-07:00 and 19:00-20:00 in the summer months when construction workers are travelling to and from the Solar PV Site.

6.4.5 As can be seen above, no traffic is generated during the network peak hours of the day (08:00–09:00 and 17:00–18:00), as per the mitigation measures that will be implemented to ensure that start and finish times do not coincide with these peaks.

7. Vehicle Distribution

7.1 Introduction

7.1.1 The following sections provide details of the anticipated characteristics of journeys generated by the construction of the Scheme. The below summarises the forecasting of how vehicle trips will be distributed across the road network during the construction phase.

7.2 Construction and Operational Staff

7.2.1 Construction and operational staff will be encouraged to take the most direct route to the Solar PV Site using 'higher' order roads, such as A and B classified roads.

7.2.2 Workers will park within the Solar PV Site during the construction, operation and decommissioning phases.

7.2.3 For the purpose of this assessment, the distribution of construction worker trips has been informed using a gravity model approach to assume the origins of their trips from surrounding settlements. This has been used to inform both private car journeys and minibus pick-up locations. This is considered to be an acceptable methodology as the exact location of the construction workforce is not known at this stage.

7.2.4 The locations, weightings of each settlement, and ultimate distribution are provided in Table 8.

Table 8: Worker Distribution

Town	Pop	Dis (km)	Dist²	Pop/Dist²	Distribution
Leeds	536,321	50.9	2,591	207	14.8%
Bradford	333,931	63.1	3,982	84	6.0%
Huddersfield	141,692	71.9	5,170	27	2.0%
Wakefield	97,582	43.3	1,875	52	3.7%
Barnsley	71,442	33.3	1,109	64	4.6%
Sheffield	500,552	55.9	3,125	160	11.5%
Rotherham	71,542	49.0	2,401	30	2.1%
Chesterfield	76,402	63.3	4,007	19	1.4%
Worksop	43,439	48.5	2,352	18	1.3%
Retford	23,740	54.9	3,014	8	0.6%
Gainsborough	21,908	47.7	2,275	10	0.7%
Scunthorpe	81,286	41.7	1,739	47	3.3%

Town	Pop	Dis (km)	Dist²	Pop/Dist²	Distribution
Hull	270,806	73.3	5,373	50	3.6%
York	141,671	48.8	2,381	59	4.3%
Selby	92,000	26.8	718	128	9.2%
Goole	20,173	28.1	790	26	1.8%
Castleford	45,351	28.7	824	55	3.9%
Pontefract	32,978	26.3	692	48	3.4%
Doncaster	87,457	17.0	289	303	21.7%

7.2.5 The potential route choices from these origins to the Solar PV Site have then been assumed using an iterative process within an online interactive mapping tool that shows the fastest route. No restrictions have been applied to possible routes workers could take to the Scheme.

7.3 Construction HGVs

7.3.1 Construction HGVs will travel to the Solar PV Site firstly via the SRN, then use the most appropriate routes to avoid unnecessary routing through local villages.

7.3.2 Local off-site highway improvements (e.g. verge clearance, hedge cutting and/or carriageway widening) will be carried out where necessary to provide the desired 6.0m carriageway width for HGVs along routes where practicable.

7.3.3 HGVs have been distributed across the road network in this exercise based on the routing set out in Section 5.5 of this TA. It is assumed that all HGVs will follow the stated routing plan to and from the SRN as proposed. Further details are also provided in the **Framework CTMP [EN010152/APP/7.17]**.

7.3.4 The vehicle routing plan showing the agreed routing strategy for HGVs is shown in **ES Volume II Figure 13-3: Indicative HGV Routing [EN010152/APP/6.2]** and summarised in Table 9.

Table 9: HGV Routing

From the SRN to the Scheme	From the Scheme to the SRN
Leave the M62 at Junction 34.	Leave the farm lane to turn right, and travel westbound along Moss Road.
Exit Junction 34 to travel southbound along the A19 (Selby Road and High Street).	Continue on Station Road into Askern.
Leave the A19 to travel eastbound along Station Road in Askern	Turn right to travel northbound along the A19.

From the SRN to the Scheme	From the Scheme to the SRN
Continue eastbound to the village of Moss and turn northbound at the junction with the farm track lane at this point (53°37'23.8"N 1°05'26.0" W).	At Junction 34, leave the A19 and join the M62.

8. Trip Assignment

8.1 Construction Staff Assignment

8.1.1 As a result of measures to be introduced as part of the embedded mitigation described in **Section 13.6 of ES Volume I Chapter 13: Transport and Access [EN010152/APP/6.1]**, the number of vehicle trips during the network peak hours is expected to be zero, with workers instead arriving between 06:00-07:00 and leaving between 19:00-20:00 during summer months, plus restrictions on HGV arrivals.

8.1.2 Based on the trip distribution exercise and the proposed trip generation outlined in the sections above, Table 10 outlines the total number of expected construction workers to drive (private car and car share) and use minibuses from each location.

Table 10: Trip Generation Overview

Town	Total Worker	Total using Minibus	Total Driving	No. of Minibus	Private Car	Car Share Vehicle 1.5 Ratio)
Leeds	37	28	9	2	4	3
Bradford	15	11	4	1	2	1
Huddersfield	5	0	5	0	2	2
Wakefield	9	0	9	0	4	3
Barnsley	12	6	6	1	3	2
Sheffield	29	14	15	1	6	6
Rotherham	5	0	5	0	2	2
Chesterfield	3	0	3	0	2	1
Worksop	3	0	3	0	1	1
Retford	1	0	1	0	1	1
Gainsborough	2	0	2	0	1	1
Scunthorpe	8	0	8	0	4	3
Hull	9	0	9	0	4	3
York	11	0	11	0	5	4
Selby	23	12	11	1	5	4
Goole	5	0	5	0	2	2

Town	Total Worker	Total using Minibus	Total Driving	No. of Minibus	Private Car	Car Share Vehicle 1.5 Ratio)
Castleford	10	0	10	0	4	4
Pontefract	9	0	9	0	4	3
Doncaster	54	27	27	2	12	10
Total	**250**	**98**	**152**	**8**	**68**	**56**

8.1.3 The traffic movements have been distributed across the ATC locations within the Study Area based on the distribution parameters outlined in Section 6. The daily two-way movements are presented in Table 11. These are also shown in the traffic flow diagrams provided in **ES Volume III: Appendix 13-2: Traffic Flow Diagrams [EN010152/APP/6.3]**.

8.1.4 The distribution is based on the following access arrangements:

a. Staff vehicle movements:
   i. 75% of all staff movements enter via Fenwick Common Lane/Haggs Lane access;
   ii. 25% of all staff movements enter via Moss Road access;
   iii. 100% of all staff movements exit via Moss Road access;

b. HGV movements:
   i. 100% of all HGV movements will enter/exit via Moss Road access.

Table 11: Daily Profile of Total Two-Way Construction Traffic Link by Link

ATC	Link	AM Dev Peak (06:00-07:00)	PM Dev Peak (19:00-20:00)	Daily
1	M62 West of J34	44	44	96
2	M62 between J34 and J35	0	0	27
3	M62 East of J35	5	5	19
4	M18 between M62 J35 and M18 J6	5	5	28
5	M180	3	3	15
6	M18 between M18 J4 and J5	0	0	9
7	A19 Selby Road – South of Station Road A19	53	53	105
8	A19 Selby Road North of Station Road A19	63	63	162
9	Moss Road – Askern Village	108	108	251

ATC	Link	AM Dev Peak (06:00-07:00)	PM Dev Peak (19:00-20:00)	Daily
10	Moss Road – East of Askern	108	108	251
11	Fenwick Common Lane	92	6	98
12	Trumfleet Lane – South of Moss	20	20	47
13	Marsh Road	20	20	47
14	Thorpe Bank	20	20	47
15	Fordstead Lane West	0	0	0
16	Fordstead Lane East	14	14	29
17	Moss Road – East of Moss	10	10	20
18	Kirkhouse Green Road	10	10	20
19	West Lane – West of Sykehouse	0	0	0
20	Sykehouse Road – East of Sykehouse	0	0	0
21	A614	0	0	0
22	Sour Lane	11	11	22
23	Fishlake Nab	11	11	22

8.1.5 It is considered that junction assessments are not required at these locations as the volume of traffic expected during the network peak hours (e.g. 08:00-09:00 and 17:00-18:00) will be zero.

9. Cumulative Effects

9.1.1 A process has been undertaken to identify developments that lie close enough to the Order limits to be considered as part of a cumulative impact assessment.

9.1.2 The cumulative developments (some of which are not consented) to be considered in combination with the Scheme have been agreed in consultation with City of Doncaster Council and are listed in **ES Volume I Chapter 15: Cumulative Effects and Interactions [EN010152/APP/6.1]** and presented in **ES Volume II Figure 15-3: Location of Short List Schemes [EN010152/APP/6.2]**. The assessment has been made with reference to the methodology and guidance set out in **ES Volume I Chapter 5: EIA Methodology [EN010152/APP/6.1]**.

9.1.3 A shortlist of the cumulative developments is shown in Table 12 below, along with a summary of the cumulative traffic details.

Table 12: Details of Cumulative Developments

Cumulative Development ID	Cumulative Development Description	Location	Summary of Cumulative Effect
21/02567/FULM	Installation of a 49.9 MW solar farm and battery storage facility with associated infrastructure on a 133.52 ha site.	Land At Warren Farm High Street Dunsville Doncaster DN7 4BX. Located along the A18 between Hatfield and Edenthorpe.	The construction routing as proposed within the cumulative development's CTMP indicates there will be no interaction within the Fenwick Solar Farm Study Area, with only the potential for interaction on the M18 mainline at Junction 4 for access to the site before utilising the local highway network to travel towards the site. In terms of access away from the development, the construction routing shows that HGVs will use the A18 to travel toward the M18 Junction 5 before utilising the mainline. The proposed HGV routing associated with the Scheme indicates that vehicles will travel via the M62 to the north of Fenwick, south down the A19 before heading east along Moss Road at Askern. In addition, this development is only proposed to generate a maximum of 18 daily two-way (9 in/9 out) HGV trips and up to a further 5 LGV visits a day (5 in/5 out), during the construction phase of approximately 30 weeks, although no specific date is included within the information. As such based on the information provided above, no significant cumulative effects are expected.
22/01537/LBC and 22/01536/FUL	Demolition of Grade II listed 'Lily Hall' and erection of one replacement residential farmworker's dwelling and associated works.	Riddings Farm Lawn Lane Fenwick Doncaster DN6 0 HB. Located off the eastern side of Lawn Lane to	The development at Lily Hall is associated with the demolition of an existing dwelling and the subsequent erection of a dwelling in the same location. As noted in the planning documents in terms of the highway response there is no requirement for a CTMP for the minor works on constructing one new dwelling in a semi-rural location. Given the scale of development and that no CTMP is required, the works are considered to only generate negligible amounts of daily traffic, and such is unlikely to cause a significant cumulative effect. It is further noted that the planning permission stipulates that the works at Lily Hall must be begun no later

Cumulative Development ID	Cumulative Development Description	Location	Summary of Cumulative Effect
		the north of the Order limits.	than November 2026 and therefore are unlikely to overlap with the Scheme's construction phase starting no earlier than 2028.
23/01746/FULM	Installation of a 180 MW battery energy facility and association works on a 3.70 ha site.	Land At Fordstead Lane Almholme Doncaster DN5 0 LN. Located to the south of the Order limits near the village of Almholme.	For this development, the proposed access for HGVs and workers is via Fordstead Lane, before accessing the site to the east of Almholme. Based on the trip generation information presented in the Transport Statement produced in December 2023 by Local Transport Projects, during the construction phase of 18 months, the development is proposed to generate a maximum of 21 HGVs (10 in, 11 out) a day, based on an average 10 hour working day, which equates to around 2 HGVs per hour. In terms of workers accessing the site, there is predicted to be a maximum of 15 staff (worse case generation of 30 two-way trips). The construction traffic routing plan produced as part of the transport statement shows that HGVs will access the local highway network via Junction 37 of the A1 to the west of Bentley before travelling along the A19 and then onto Fordstead Lane. Based on this there is predicted to be no interaction between the Battery Energy Storage and the Scheme in terms of HGVs as the Fenwick HGV trips will travel via the M62 to the north, and south down the A19 before heading east along Moss Road. As such there is zero interaction in terms of HGV traffic. Based on the proposed HGV vehicle routing, the trip generation within the transport statement, alongside that there are predicted to be no development trips (either workers or HGVs) associated with the Scheme passing along Forstead Lane West (through ATC 15), no significant cumulative effects are expected.

Cumulative Development ID	Cumulative Development Description	Location	Summary of Cumulative Effect
19/03034/FULM	Excavation of approximately 4 million tonnes of by-product material comprising mostly silica sand and also soda lime glass and iron oxides (also known as burgy) from previous glass manufacturing and the reinstatement of the flood plain, creating new habitats.	Land at Marsh Lane Barnby Dun Doncaster DN3 1 ET. Located to the south of the Order limits near the village of Almholme.	The proposed access for HGVs and workers is via Fordstead Lane, before accessing the development site to the east of Almholme. Based on the trip generation information presented in the Transport Statement produced in November 2019 by SWECO, the site will operate Monday to Friday between 08:00 and 17:00 generating 10 movements per hour (five arrivals and five departures). However, based on the response by the highway officer they would limit the trips to a maximum of 40 HGV movements per day (20 in and 20 out). The construction traffic routing plan produced as part of the transport statement shows that HGVs will access the local highway network via Junction 36 of the A1 to the west of Doncaster before travelling along the A630, A638 and then onto Fordstead Lane via the A19 in Bentley. Based on this there is predicted to be no interaction between the excavation operations and the Scheme in terms of HGVs as the Fenwick Solar Farm HGV trips will travel via the M62 to the north, and south down the A19 before heading east along Moss Road. Based on the proposed HGV vehicle routing and the trip generation within the transport statement, there are predicted to be no development trips (either workers or HGVs) associated with the Scheme passing along Forstead Lane West (through ATC 15). Therefore, no significant cumulative effects are expected.
20/01774/TIPA	The construction of an energy recovery facility involving the thermal treatment of residual	Land northwest Of Sandall Stones Road Kirk Sandall	The development is located within Kirk Sandall to the south of the Order limits. The proposed development will not result in a change to required staff numbers or the number of HGV movements compared to the consented

Cumulative Development ID	Cumulative Development Description	Location	Summary of Cumulative Effect
	waste and associated infrastructure including engineering, access, landscape, ground and landscaping works.	Doncaster DN3 1 QR. Located within Kirk Sandall to the southeast of the Order limits.	development. The extant permission allows for up to 78 HGV trips (156 two-way) per 12-hour operating period. Moreover, in terms of light vehicle trips a maximum of 22 staff members will be on site at any time and this will be during the day. Based on the HGV distribution presented within the traffic flow diagrams that accompany the transport assessment, HGVs will utilise the A630, the A18 and Barnby Dun Road. Based on this there will be no interaction between the HGV distribution associated with the Scheme and this application. Based on the proposed HGV vehicle routing, it is therefore expected that no vehicle movements associated with the energy recovery facility will pass through the Fenwick Study Area, as such no significant cumulative effects are expected.
23/01082/SCRE	Request for a screening opinion in relation to a joint solar farm and energy storage development on approximately 61.7h a located off The Balk, Almholme, Doncaster.	Land Off The Balk Almholme Doncaster DN5 0 LL. Located to the south of the Order limits near the village of Shaftholme along Shaftholme Lane.	As this is only a screening opinion, the traffic and transport details related to construction and operation are not yet included, however, it is stated a Transport Assessment and CTMP would be included within the planning application. However, given the location, there is likely not to be interaction in terms of HGVs given that as part of the Scheme HGVs will utilise a separate route and as such there will be no crossover on the local highway network. As noted in the screening opinion, given the nature of the proposed development as a solar farm and BESS facility, no permanent employees would be required at the site and there would be no regular operational traffic. As such it is unlikely any significant cumulative effects will be expected.

Cumulative Development ID	Cumulative Development Description	Location	Summary of Cumulative Effect
22/02088/FULM	The installation of a 2.5 MW solar PV array, 0.9 MW green hydrogen plant and associated landscaping.	Croft Farm Askern Road Carcroft Doncaster DN6 8 DE. Located to the southwest of the Order limits within Adwick le Street near Carcroft.	The access point for the installation of the solar development at Croft farm is located approximately 3.1 km to the south of the main access point associated with the Scheme. As such there is the potential for a cumulative impact around this area in terms of workers arriving to the site. Although there is the potential for some overlap (only in terms of workers trips) the development construction vehicle numbers are expected to be very low, with 5 vans on site per day during installation with sporadic HGV trips within the 3-4 month construction programme. Based on this information there are unlikely to be any significant cumulative effects given the location, length of construction and the predicted trip generation.
08/01077/OUTA	Outline application for 220 dwellings, as well as Class A1 use, Class A3 use, Class A4 use, Class B1(c) use, Class B2 use and setting out of Public Open Space.	Land at and to the south of Askern Saw Mill.	The site is located approximately 2.9 km from the Order limits. As this is an outline planning application, the construction management plan does not include any specific transport or traffic details in terms of the number of trips that will be generated. Therefore, the cumulative effects cannot be determined.
23/02634/FULM	Installation of ground mounted photovoltaic farm with associated infrastructure, engineering works,	Land To The South Of Barnsley Road, To The East And West Of	The site is located 8.8 km from the Order limits and the construction phases will have an average of 5 HGV movements per day. The operational phase will have two HGV movements per day on two occasions each month.

Cumulative Development ID	Cumulative Development Description	Location	Summary of Cumulative Effect
	access, and landscaping.	Marr Grange Lane, Marr	Given the distance of the site to the Scheme and the low number of trips being generated, there are unlikely to be any significant effects.
NSIP Eggborough CCGT	The construction and operation of a new CCGT generating station with a capacity of up to 2,500 megawatts, new gas pipeline to the NTS and other associated development.	Near Eggborough village, Selby District, North Yorkshire	The site is 6.5 km from the Order limit. The ES Chapter 14: Traffic and Transport sets out a worst-case traffic generation at the peak month of construction. This is anticipated to be 515 construction worker vehicles and 40 HGV movements per day. For the gas pipeline construction, this would amount to 90 construction worker vehicles and up to 40 HGV movements per day. However, in terms of timescales, the construction phase was set to occur between 2019 and 2022, with the operational phase thereafter. The development was granted approval in 2018. Therefore, any traffic generation will have been captured in the base flows collected for the Scheme and no significant cumulative effects are expected.
NSIP Helios Renewable Energy Project	The installation of ground mounted solar arrays, energy storage and associated development comprising grid connection infrastructure and other infrastructure integral to the construction, operation, and maintenance of the development.	Land to the south west of the village of Camblesforth and to the north of the village of Hirst Court	The site is located 10 km from the Order limits, and it is anticipated that construction vehicles will access the Helios site via the M62 J36, A614, A645, A1041 Bawtry Road and then by one of the two site entrances off the A1041. For the construction phase, there will be a maximum average of 52 HGV movements per day (26 arrivals and 26 departures). Further, the worst-case Cars/LGV movements could be up to 210 arrivals and departures during a peak day during the construction phase. During the operational phase, there are expected to be around five visits to the site per month throughout the lifespan.

Cumulative Development ID	Cumulative Development Description	Location	Summary of Cumulative Effect
			Given the distance of the site from the Scheme and the route that will be taken, the traffic movements are not expected to interact with those associated with the Scheme. Therefore, no significant cumulative effects are expected.
NSIP Tween Bridge Solar Farm	The construction, operation, management and decommissioning of a ground mounted solar photovoltaic (PV) electricity generating facility exceeding 50 megawatt (MW) output capacity, together with associated works including substation, energy storage and green infrastructure.	Land either side of the M180, High Level Banks (the A18) and the Stainforth and Keadby Canal	The traffic and transport details related to construction and operation of this scheme are not yet included, however, it is stated a Transport Assessment and CTMP would be included within the DCO application. However, given the location (10 km from the Order limits), there is not likely to be interaction in terms of HGVs given that as part of the Scheme HGVs will utilise a separate route and as such there will be no crossover on the local highway network. Therefore, no significant cumulative effects are expected.

Cumulative Development ID	Cumulative Development Description	Location	Summary of Cumulative Effect
23/00537/FULM	Reclamation through construction and operation of Energy Hub incorporating Battery Energy Storage, Substation and associated Infrastructure, including earthworks to existing material and to provide development platform.	Thorpe Marsh Ash Fields Marsh Lane Barnby Dun Doncaster DN3 1ET	Over a 36-month period, there will be a total of 8,360 two-way HGV movements. This equates to 36 two-way HGV movements per day (18 in and 18 out). A condition has been applied whereby HGV movements cannot exceed 40 two-way per day. The Transport Statement also states that there will be a 'small amount' of LGV movements. The HGV routing indicates that the following ATCs associated with the Scheme will be travelled along: ATC 2, 3, 4, 7, 8, and 15. However, given the relatively low numbers of vehicles throughout the day, no significant cumulative effects are expected.
23/01241/FULM	Installation of underground cable.	High Street (A18) To Thorpe Bank, Via Armthorpe Lane, Station Road, Fordstead Lane	According to the planning statement, limited HGV and construction movements will be required as part of the works. It is expected the works would give rise to only a handful of additional movements associated with the delivery of additional temporary fencing, traffic management and cable for the works.

9.1.4 Table 12 above provides a review of the likelihood of cumulative effects from a range of additional developments within the vicinity. This has considered transport implications based on information submitted with planning applications. Where this has not been available, a qualitative review of potential implications has been considered based on on-site scale and location, and professional experience. Based on this review, it is considered that there are unlikely to be significant effects arising from cumulative development, due to limited overlap of other scheme areas with the Study Area and/or limited levels of traffic being generated by cumulative developments.

9.1.5 It also noted that many of the developments are still pending consideration and those sites that have had a determination (before 2023) are unlikely to be built and as such will not be included in any 2023 baseline traffic assessment.

9.1.6 As such, at this time the TEMPro growth factor that has been applied to the 2023 flows to growth to 2028 is considered a robust methodology for assessing the future development flows within the area.

9.1.7 A summary table of the shortlisted cumulative developments showing the ATC locations affected is provided below.

Table 13: Trip Generation from Cumulative Developments

Scheme ID	Peak Daily Number of Cars and LGV Vehicles	Peak Daily Number of HGV Vehicles	ATCs Affected	Included in Assessment
21/02567/FULM	None in area	None in area	None	No (ATCs not affected)
22/01537/LBC and 22/01536/FUL	Negligible	Negligible	None	No (ATCs not affected)
23/01746/FULM	15	11	Link 15	No (low traffic flows)
19/03034/FULM	0	20	Link 15	No (low traffic flows)
20/01774/TIPA	None in area	None in area	None	No (ATCs not affected)
23/01082/SCRE	None in area	None in area	None	No (ATCs not affected)
22/02088/FULM	5	Sporadic	None	No (low traffic flows)
08/01077/OUTA	Unspecified	Unspecified	Unspecified	No (no data available)
23/02634/FULM	0	5	None	No (ATCs not affected)

Scheme ID	Peak Daily Number of Cars and LGV Vehicles	Peak Daily Number of HGV Vehicles	ATCs Affected	Included in Assessment
NSIP Eggborough CCGT	None during the same timeframe	None during the same timeframe	None	No (timeframes do not align)
NSIP Helios Renewable Energy Project	None in the area	None in the area	None	No (ATCs not affected)
NSIP Tween Bridge Solar Farm	Unspecified	Unspecified	None	No (ATCs not affected)
23/00537/FULM	Negligible	18	Links 2, 3, 4, 7, 8, and 15	No (low traffic flows)
23/01241/FULM	Negligible	Negligible	Unspecified	No (low traffic flows)

10. Highways Assessment

10.1 Assessment Scenarios

10.1.1 The following assessment scenarios have been examined in detail as part of the highway assessment:

a. Existing Baseline (2023);

b. Future Baseline (2028);

c. Peak Construction Phase (2028); and

d. Future Baseline with Peak Construction Phase (2028).

10.1.2 The following scenarios have also been reviewed:

a. Operational Phase (2030-2070); and

b. Decommissioning Phase (not earlier than 2070).

10.1.3 It should be noted that whilst the TA assesses the potential impact of construction vehicle movements on the strategic and local highway networks, a quantitative assessment has not been carried out for operational traffic movements given the small increases expected.

10.1.4 The decommissioning effects of the Scheme are expected to be of a similar (or lesser) magnitude to the construction effects. On this basis, the construction phase is considered to have the greatest change on the surrounding transport network and the construction phase has therefore been used to identify the likely impacts of the decommissioning phase, including whether any mitigation will be required. This may overestimate the actual traffic flows slightly but is considered to be broadly accurate. In addition, the decommissioning phase is expected to take place no earlier than 2070 and is therefore considered to be too far into the future to be able to accurately predict future baseline traffic flows or road/junction layouts at that time.

10.2 Existing Baseline (2023)

10.2.1 Details relating to the existing baseline including existing traffic flows on the surrounding highway network and a review of the collision records are presented in Section 4.

10.3 Future Baseline (2028)

10.3.1 A secondary process has also been undertaken to provide an estimate of traffic growth across the road network. Future year baseline traffic flows for the assessment year of 2028, which represents the peak of construction, have been derived by applying the national standard TEMPro to derive traffic growth factors, as summarised in Table 14. These growth factors have been taken into account when comparing the baseline and future year traffic scenarios.

Table 14: TEMPro Growth Factors (2023–2028)

Period	Growth Factor
2023–2028	1.03485

10.3.2 The development peak hour and 24-hour AADT for 2028 are therefore presented in Table 15.

Table 15: 2028 Baseline Traffic (Two-Way)

ATC	AM Dev Peak (06:00-07:00)	PM Dev Peak (19:00-20:00)	Daily
1	2,907	2,104	62,668
2	2,742	1,736	54,294
3	2,177	1,485	45,198
4	2,448	1,654	49,177
5	1,887	1,375	42,118
6	2,546	2,015	58,842
7	464	345	9,712
8	527	587	14,538
9	162	223	5,402
10	111	138	3,478
11	12	24	383
12	29	27	1,098
13	41	28	1,306
14	54	35	1,811
15	169	162	5,558
16	125	148	5,011
17	74	81	2,053
18	65	69	1,764
19	11	31	643
20	8	14	482
21	207	189	5,178
22	66	77	1,864
23	47	87	1,940

10.3.3 Therefore, the consideration of and application of traffic growth of the 2023 ATCs has provided a robust estimation of traffic flows on the highway network during the peak of the construction phase in 2028.

10.4 Peak Construction Phase (2028)

10.4.1 As set out in Section 8 generated trips from the Scheme have been distributed across the network construction to represent the peak construction phase.

10.4.2 Traffic will be distributed across the network travelling to the access points leading to the Order limits, as detailed in Section 8.1. No traffic is generated during the traditional AM or PM network peak hours (08:00-09:00 and 17:00-18:00) and therefore there will be no impact as a result of the Scheme in the traditional peak hours.

10.5 Future Baseline with Construction Traffic (2028)

10.5.1 The proposed increase in two-way vehicle movements during the construction weekday peak hours, and across the day (24 hours), both in terms of actual increases and percentage increase relative to the future baseline traffic flows are presented in the tables below at each link location.

10.5.2 Table 16 provides an overview of the total percentage increase for total vehicles on each of the links associated with the Scheme during the peak construction year (2028).

Table 16: 2028 Baseline Traffic and Construction Traffic

		AM Dev Peak (06:00-07:00)				PM Dev Peak (19:00-20:00)				24 Hour AADT			
ATC	Link	Base	Dev	Total	%Inc	Base	Dev	Total	%Inc	Base	Dev	Total	%Inc
1	M62 West of J34	2,907	44	2,951	1.5%	2,104	44	2,148	2.1%	62,668	96	62,764	0.2%
2	M62 between J34 and J35	2,742	0	2,742	0.0%	1,736	0	1,736	0.0%	54,294	27	54,321	0.0%
3	M62 East of J35	2,177	5	2,182	0.2%	1,485	5	1,490	0.3%	45,198	19	45,217	0.0%
4	M18 between M62 J35 and M18 J6	2,448	5	2,453	0.2%	1,654	5	1,660	0.3%	49,177	28	49,205	0.1%
5	M180	1,887	3	1,890	0.2%	1,375	3	1,378	0.2%	42,118	15	42,133	0.0%
6	M18 between M18 J4 and J5	2,546	0	2,546	0.0%	2,015	0	2,015	0.0%	58,842	9	58,851	0.0%
7	A19 Selby Road – South of Station Road A19	464	53	517	11.3%	345	53	397	15.3%	9,712	105	9,817	1.1%
8	A19 Selby Road North of Station Road A19	527	63	591	12.0%	587	63	650	10.8%	14,538	162	14,700	1.1%
9	Moss Road – Askern Village	162	108	270	**66.5%**	223	108	331	**48.3%**	5,402	251	5,654	4.6%
10	Moss Road – East of Askern	111	108	219	**96.9%**	138	108	246	**78.0%**	3,478	251	3,730	7.2%

		AM Dev Peak (06:00-07:00)				PM Dev Peak (19:00-20:00)				24 Hour AADT			
ATC	Link	Base	Dev	Total	%Inc	Base	Dev	Total	%Inc	Base	Dev	Total	%Inc
11	Fenwick Common Lane	12	92	104	**763.1%**	24	6	30	**25.4%**	383	98	480	25.5%
12	Trumfleet Lane – South of Moss	29	20	50	**69.2%**	27	20	48	**74.6%**	1,098	47	1,144	4.3%
13	Marsh Road	41	20	62	**49.3%**	28	20	48	**73.6%**	1,306	47	1,353	3.6%
14	Thorpe Bank	54	20	74	**37.8%**	35	20	55	**58.2%**	1,811	47	1,857	2.6%
15	Fordstead Lane West	169	0	169	0.0%	162	0	162	0.0%	5,558	0	5,558	0.0%
16	Fordstead Lane East	125	14	139	11.5%	148	14	162	9.7%	5,011	29	5,039	0.6%
17	Moss Road – East of Moss	74	10	84	13.5%	81	10	91	12.4%	2,053	20	2,073	1.0%
18	Kirkhouse Green Road	65	10	75	15.5%	69	10	79	14.5%	1,764	20	1,784	1.1%
19	West Lane – West of Sykehouse	11	0	11	0.0%	31	0	31	0.0%	643	0	643	0.0%
20	Sykehouse Road – East of Sykehouse	8	0	8	0.0%	14	0	14	0.0%	482	0	482	0.0%
21	A614	207	0	207	0.0%	189	0	189	0.0%	5,178	0	5,178	0.0%
22	Sour Lane	66	11	76	16.7%	77	11	88	14.2%	1,864	22	1,886	1.2%

		AM Dev Peak (06:00-07:00)				PM Dev Peak (19:00-20:00)				24 Hour AADT			
ATC	Link	Base	Dev	Total	%Inc	Base	Dev	Total	%Inc	Base	Dev	Total	%Inc
23	Fishlake Nab	47	11	58	23.2%	87	11	108	11.2%	1,940	22	1,962	1.1%

*The numbers highlighted in **bold** represent where there is an increase in traffic of >30%.*

10.5.3 The results in Table 16 indicate the following:

a. The Scheme's peak hours of worker-generated traffic are between 06:00-07:00 and 19:00-20:00. This is when all construction workers are expected to arrive and leave the compounds. A total of 140 one-way movements will occur during each hour (e.g. this accounts for the arrival of vehicles in the AM hour and departure of vehicles in the PM hour);

b. The Scheme is anticipated to have the largest proportional increase in traffic flows at ATC 11 (Fenwick Common Lane), with a 763.1% increase in traffic (due to the very low baseline traffic) during the hours of 06:00-07:00; and

c. Moss Road is predicted to experience the highest level of additional traffic associated with the Scheme during the construction phase. In the AM (06:00-07:00), 108 construction worker vehicles, including minibuses and private worker cars, will travel along the road to arrive. In the PM (19:00-20:00), 108 construction worker vehicles will depart via Moss Road.

10.5.4 It should be noted that where there is an increase in traffic of more than 30%, the 2028 baseline hourly two-way traffic flows were very low.

10.5.5 Table 17 below shows the links where the baseline peak flow is considered to be very low, and the consequent percent increase in construction traffic is high, which for the purposes of this assessment is less than 150 vehicles. This figure has been chosen based on professional judgement and experience of traffic flow capacity on specific road types for other similar solar NSIP schemes such as Longfield and Gate Burton. Further, 150 peak two-way vehicles is around one vehicle in each direction per minute, which is considered to be a negligible flow.

Table 17: Links with Low AM and PM 2028 Base Flows

ATC	Link Description	AM Dev Peak 06:00-07:00	PM Dev Peak 19:00-20:00
10	Moss Road – East of Askern	111	138
11	Fenwick Common Lane	12	24
12	Trumfleet Lane – South of Moss	96	27
13	Marsh Road	123	28
14	Thorpe Bank	54	35

10.5.6 With the addition of construction traffic, this results in a relatively high percentage increase, particularly on Fenwick Common Lane (ATC 11) which is the link that will be used by 75% of workers to access the Solar PV Site. In addition, the hourly construction traffic numbers on ATC 9, 10,11,12,13 and 14 are considered relatively small and it is expected there would be sufficient capacity on the road network to accommodate these additional trips.

10.5.7 During the construction phase the impact would be temporary and would be managed through the embedded mitigation measures (the construction trip generation already takes these into account) including a **Framework CTMP**

[EN010152/APP/7.17] and the above impact represents the peak of the activity on the Solar PV Site.

10.5.8 In addition, the impacts of the development will essentially extend the peak hour and the hour affected would generally be no worse than the current peak hour in most instances.

10.6 Mitigation Measures

10.6.1 The following measures have been included as embedded mitigation and will be implemented to minimise the traffic impacts of the Scheme on the highway network during the construction and decommissioning phases. The measures will be secured through a DCO requirement, primarily by the **Framework CTMP [EN010152/APP/7.17]**, as well as the **Framework CEMP [EN010152/APP/7.7]**, the **Framework Operational Environmental Management Plan (OEMP) [EN010152/APP/7.8]** and the **Framework DEMP [EN010152/APP/7.9]** for the decommissioning phase. The measures include:

Construction and Decommissioning Phase

a. Suitable access points to enable movement of vehicles into the Order limits, where appropriate;

b. All access points that require the creation of a junction bellmouth would be designed based on the relevant standard from the Design Manual for Roads and Bridges (DMRB) CD 123 Geometric Design of at Grade Priority and Signal-Controlled Junctions and in consultation with the local highway authority, thereby negating any potential safety impact associated with construction activity. Further details on access designs are provided within the **Framework CTMP [EN010152/APP/7.17]**;

c. Swept path analysis for AILs, HGVs, and tractor/trailers has been conducted to ensure there is knowledge of where routing is appropriate. This information has been compiled within the **Framework CTMP [EN010152/APP/7.17]**;

d. HGVs and AILs will be routed in accordance with the findings of the routing review for large vehicles as set out in the **Framework CTMP [EN010152/APP/7.17].** There are expected to be 10 two-way movements associated with the delivery of transformers to the On-Site Substation

e. Utilising internal routes within the Solar PV Site to avoid using the existing road network where practicable;

f. Managing the areas where traffic may have to use the road network, by providing appropriate visibility splays between construction vehicles and other road users, implementing traffic management (e.g. advanced signage to advise other users of the works, as well as manned controls at each crossing point (marshals/banksmen)), with a default priority that construction traffic will give-way to other users. This will also apply where construction traffic and PRoW may intersect;

g. Restricting HGV movements to certain routes as follows: Moss Road – SRN, A19;

h. Route a proportion of inbound staff vehicles via Fenwick Common Lane/Haggs Lane to reduce traffic through Moss during the morning peak;

i. Restricting HGV movements to ensure arrivals/departures between 09:00 and 17:00 to avoid increasing traffic levels on the surrounding highway network during the typical weekday peak hours;

j. Implementing a Delivery Management System to control the bookings of HGV deliveries from the start of the construction phase. This will be used to regulate the arrival times of HGVs via timed delivery slots, as well as to monitor compliance with HGV routing. In addition, adequate space will be made available within the Solar PV Site to ensure no queuing back onto the surrounding road network occurs;

k. Implementing a monitoring system to record the route of all HGVs travelling to and from the Scheme, to record any non-compliance with the agreed routing strategy/delivery hours and to communicate any issues to the relevant suppliers to ensure the correct routes and times are followed;

l. Construction staff (e.g. non-HGV vehicles) will be directed to take the most direct route to the Scheme using 'higher' order roads, such as A and B classified roads or the SRN;

m. Encouraging local construction workers to car share to reduce single occupancy car trips. This will promote the benefits of car sharing, such as reduced fuel costs. A car share system will be implemented to match potential sharers and to help staff identify any colleagues who could potentially be collected along their route to/from the Scheme;

n. Implementing a shuttle bus service to transfer non-local workers to/from local worker accommodation or pick-up locations (assumed minibus capacity of 25), to reduce vehicle trips on the surrounding highway network;

o. Providing limited (but sufficient) on-site car and cycle parking to accommodate the expected parking demand of workers for the Scheme; and

p. A specialised haulage service will be employed to allow AILs to transport components with the necessary escort, permits and traffic management, with the contractor consulting the relevant highways authorities to ensure the correct permits are obtained. The police will also be given advanced notification under the Road Vehicle Authorisation of Special Types Order 2003 (Ref. 6).

q. The Grid Connection Cables would be buried below ground and would typically be installed using an open trench method. At this stage, ten potential Horizontal Directional Drilling (HDD) locations have been identified. The precise locations of the HDD crossing points within the Order limits will be determined at the detailed design stage post-consent, however, indicative locations are illustrated in **ES Volume II Figure 2-4: Location of Temporary Construction Compounds and Indicative HDD Areas [EN010152/APP/6.2]**. The Grid Connection Corridor will also cross the Network Rail freight line near Thorpe Marsh, also using HDD.

Operation and Maintenance Phase

a. Operation and maintenance staff will be encouraged to take the most direct route to the Scheme using 'higher' order roads, such as A and B classified roads or the SRN;

b. HGV movements are anticipated to be low across the 40-year operation and maintenance phase, but when required HGV movements will be restricted to certain times of day (between 09:00 and 17:00) and restricted to the SRN and other 'higher' order roads where applicable (M62, M18, M180, A19);

c. Ensuring operation and maintenance staff park within the Solar PV Site during operation and maintenance to limit impact on parking available within the local road network;

d. Providing sufficient protection/separation between existing PRoW and the Scheme infrastructure (Solar PV panels, BESS Area and the On-Site Substation) where necessary using perimeter fencing installed at a minimum distance of 20 m on either side of the centre of the PRoW where solar infrastructure lies to both sides or 15 m if solar infrastructure is to one side only; and

e. Emergency access to the BESS Area and the On-Site Substation will be provided via Fenwick Common Lane/Haggs Lane and from Moss Road.

10.7 Summary

10.7.1 In summary, most road links will experience a relatively low-to-no percentage increase in the daily volume of traffic. Where there is a relatively higher percentage increase along a road link, this does not warrant the consideration of the operation of the junction because the baseline is already low. Further, mitigation measures will be implemented to reduce the number of trips, meaning that the number of trips presented represent a worst-case scenario.

10.7.2 It is therefore deemed that the Scheme will have no detriment to the operation of the highway network.

11. Summary and Conclusion

11.1.1 The purpose of this TA is to demonstrate that the Scheme will be acceptable in transport and highway terms and it follows pre-application discussions held with City of Doncaster Council (as the local highway authority for the LRN) and National Highways (as the highway authority for the SRN), where the extent of the Study Area for assessment in terms of highway impact was agreed.

11.1.2 With respect to transport and access, the mitigation measures that will be implemented (car sharing and minibuses), align the Scheme with relevant national and local policy, ensuring that sustainable transport modes are available for workers.

11.1.3 The report provides a summary of the accessibility of the Study Area via the surrounding highway network, as well as by public transport, cycling and on foot. It also considers road accident data for the most recently available relevant 5-year period. It can be concluded that there are no collision clusters that would be exacerbated by the Scheme.

11.1.4 ATCs were carried out during July and December 2023 at 23 locations expected to be affected by traffic associated with the Scheme.

11.1.5 The TA provides details of the anticipated characteristics of journeys generated by construction and operation of the Scheme including movements of staff, HGVs and tractor-trailers.

11.1.6 It is anticipated that there will be up to 250 members of staff working at the Scheme daily during the construction programme. During the construction phase, it is anticipated that there will be up to 18 artic HGVs (36 two-way) delivering across the Order limits daily between the peak construction months. These deliveries will be directed to the Solar PV and Grid Connection corridor sites and distributed among them.

11.1.7 It is anticipated that maximum trip generation will consistently occur within Months 1–12, with a worst case 140 construction worker vehicles (280 two-way). An overall daily total of 316 two-way vehicle movements are expected per day. All trips generated will be outside of the network AM and PM peaks.

11.1.8 The following assessment scenarios have been examined in detail as part of the highway assessment:

a. Existing Baseline (2023);

b. Future Baseline (2028);

c. Peak Construction Phase (2028); and

d. Future Baseline with Peak Construction Phase (2028).

11.1.9 The following scenarios have also been reviewed:

a. Operational Phase (2030-2070); and

b. Decommissioning Phase (not earlier than 2070).

11.1.10 There will be a negligible percentage increase in traffic on most roads in the surrounding area. However, roads such as Moss Road, that have a low baseline, will experience a relatively high percentage increase in traffic. The

low baseline is the reason for the higher increase in traffic and therefore the overall impact is not deemed significant.

11.1.11 Several measures have been included as embedded mitigation within the ES and will be implemented to minimise the traffic impacts of the Scheme on the highway network during the construction and decommissioning phases. These measures include start and finish times that ensure that trips are outside of the network peak, promoting car sharing, and minibus provision.

11.1.12 The measures will be secured through a requirement of the DCO, primarily by the **Framework CTMP [EN010152/APP/7.17]** and the **Framework PRoW Management Plan [EN010152/APP/7.13]**, as well as the **Framework CEMP [EN010152/APP/7.7]** for the construction phase, the **OEMP [EN010152/APP/7.8]** for the operational phase and the **Framework DEMP [EN010152/APP/7.9]** for the decommissioning phase.

12. References

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