

Appendix M – Transport Statement (Part 1)





Sperberry Hill Solar Array and BESS

Transport Statement

Prepared for

Brockwell Storage and Solar Limited

**September 2024
3732-01-TS01**



Document Control

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1.0 INTRODUCTION

1.1 Purpose of this Report

- 1.1.1 Axis have been appointed by Brockwell Storage and Solar Limited (BSSL, hereafter referred to as 'the applicant') to provide highways and transport advice to accompany a planning application for a solar farm including grid connection and associated infrastructure on land to the south of Sperberry Hill, near Hitchin in North Hertfordshire (hereafter referred to as 'the site').
- 1.1.2 The purpose of this report is to inform the relevant Local Planning Authority (LPA), North Hertfordshire District Council (NHDC), and Hertfordshire County Council (HCC), which is the Local Highway Authority (LHA), of the anticipated highways and transportation matters associated with the proposed scheme.
- 1.1.3 This Transport Statement (TS) supports an application for full planning permission for the construction and operation of this photovoltaic solar array and associated infrastructure.

1.2 Planning History

- 1.2.1 Planning Application (ref. 22/00709/FP) for a proposal with the same description of development and located on exactly the same site, was refused by NHDC on 22nd November 2023 (hereafter referred to as the '2023 Scheme').
- 1.2.2 The planning application for the 2023 Scheme was made by RNA Energy Ltd which was acquired by Brockwell Energy Limited and now exists as BSSL. The Applicant has decided to submit a revised planning application for the 2023 Scheme with some specific design changes (hereafter referred to as the 'Resubmission Scheme').
- 1.2.3 It should be noted that the 2023 Scheme was refused for reasons of amenity and unacceptable impact on Green Belt land. Following a series of pre- and post-application discussions (summarised below), there was ultimately no objection to the 2023 Scheme from either the LPA or LHA on transport and highways matters.



1.3 Pre-Application Discussions

2023 Scheme Pre-Application

- 1.3.1 A pre-application submission for the 2023 Scheme was sent to NHDC on 2nd August 2021. Subsequently, an Environmental Impact Assessment (EIA) screening request was submitted to NHDC on 7th September 2021. NHDC confirmed that the proposed development was determined to not require EIA. A response from HCC was received on 8th November 2021 (HCC ref. NH/9015/2021). This stipulated that construction traffic would be required to access the site from the A602 via the B656 and Sperberry Hill, and a Transport Statement (TS) would be required to demonstrate the impact of construction traffic along this route.

2023 Scheme Post-Submission Consultation

- 1.3.2 Following submission of the application for the 2023 Scheme, HCC provided a planning consultation response dated 16th March 2022 which raised a number of concerns and requests for additional information. These concerns related to:
- i) Vehicle Access and Visibility – specifically relating to the required design parameters for the access junctions;
 - ii) Parking Provision – requesting further detail of the proposed on-site parking arrangements;
 - iii) Servicing and Deliveries – relating to the provision of revised swept path drawings following a minor revision to the proposed site layout; and
 - iv) Construction Traffic – requesting that an outline Construction Traffic Management Plan be submitted with the planning application.
- 1.3.3 Axis prepared a Technical Note (TN) to address these concerns, which was issued in October 2022. This TN was accompanied by an outline Construction Traffic Management Plan (CTMP).
- 1.3.4 Following this TN, following a change of officer, HCC provided a further consultation response dated 4th January 2023, requesting further clarifications on the information presented within the October 2022 TN. A further TN was therefore prepared, dated 19th January 2023, in order to address these subsequent points of clarification.



1.3.5 Following submission of the January 2023 TN, no further correspondence was received from HCC, and the Officer Report which accompanied the 2023 Scheme planning decision noted that HCC raised no objections.

1.3.6 It should be noted that the Resubmission Scheme comprises a 9% reduction in the area of panels compared to the 2023 Scheme but would still have the same power output of 25MW due to the panel power rating being increased from 640 watts to 710 watts. However, the overall reduction in the total number of panels would result in a reduction in the number of vehicle movements generated during the construction phase for the Resubmission Scheme compared to the 2023 Scheme, as this TS will seek to demonstrate.

1.4 Report Structure

1.4.1 This TS report for the Resubmission Scheme has been written in accordance with National Planning Policy Guidance (NPPG) and takes into account the pre- and post-submission discussions with HCC Highways relating to the 2023 Scheme (set out above). Following this introductory section, the Structure of this TS is as follows:

- i) **Chapter 2** describes the existing conditions on and around the site, including reference to the local highway network, and a review of the accident record;
- ii) **Chapter 3** sets out the development proposals, including a description of the site access arrangements;
- iii) **Chapter 4** presents the anticipated trip generating potential of the scheme on the local highway network; and
- iv) **Chapter 5** provides the summary and conclusions.

2.0 EXISTING CONDITIONS

2.1 Introduction

2.1.1 This section of the TS describes the existing conditions in and around the development site, focussing on the site location, its existing use, access arrangements and the local highway network including its accident record.

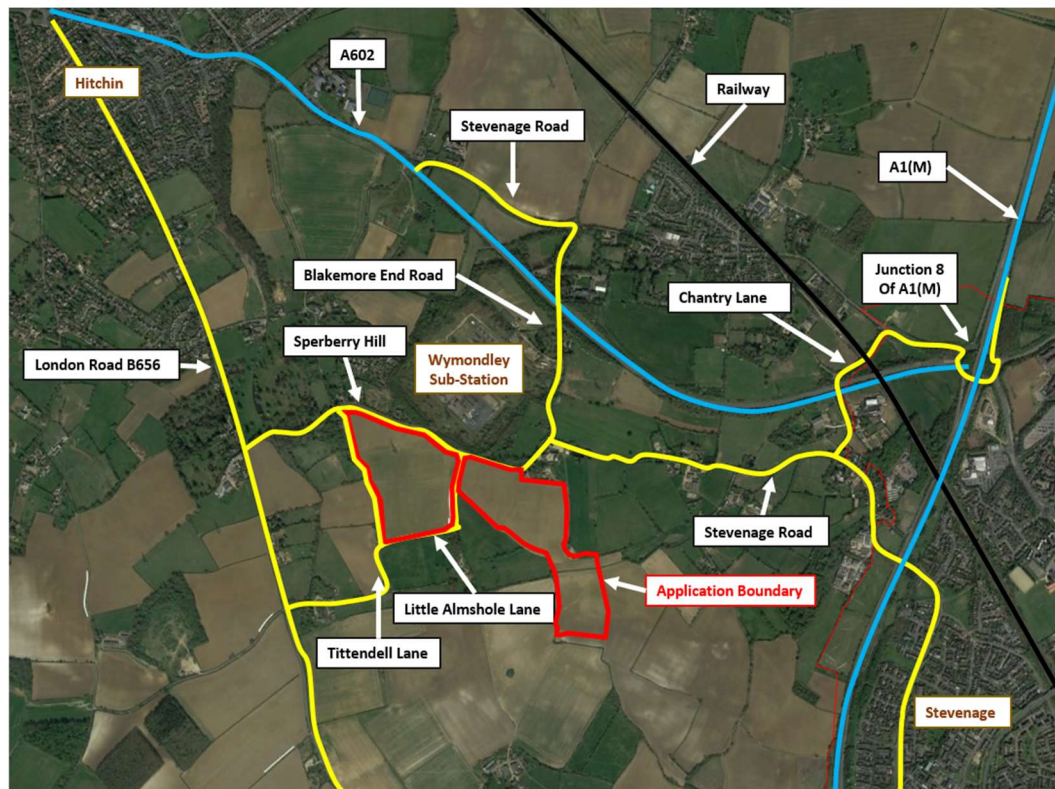
2.2 Site location and Existing use

2.2.1 The application site is located approximately 1.4km to the south-west of Little Wymondley, North Hertfordshire, approximately 3.2km south-east of Hitchin Town Centre and 4km north-west of Stevenage Town Centre.

2.2.2 The site is circa 35.5 hectares (ha) in size and comprises two parcels of land located to the south of an unclassified road known as Sperberry Hill. The two parcels of land are divided by Little Almshoe Lane. These parcels of land currently comprise a number of arable fields, which are sub-divided by ditches, broken hedgerows and isolated trees.

2.2.3 The location of the site is shown on **Image 2.1**.

Image 2.1 – Site Location Plan



2.3 Existing Access Arrangements

- 2.3.1 As noted above, the site is divided in two by Little Almshoe Lane, although as the site is located in the middle of an agricultural area there is currently no formal means of highway access from this road into either parcel of land. Informal field access is available from Little Almshoe Lane into both parcels, with the access into the eastern parcel being gated, and into the western parcel being ungated. It is proposed that these informal field accesses will ultimately be utilised to serve as the vehicular accesses to the solar farm.

2.4 Local Highway Network

Little Almshoe Lane

- 2.4.1 Little Almshoe Lane is a minor rural access that runs in a north – south orientation in the vicinity of the application site. To the south of the application site the road bends to the west for approximately 300m, where it joins Tittendell Lane.
- 2.4.2 In the vicinity of the application site Little Almshoe Lane is a single-carriageway two-way road with a carriageway width of approximately 5m. It is characterised by hedgerows along both sides of the carriageway. The road is subject to the National Speed Limit (60mph).

Sperberry Hill / Stevenage Road

- 2.4.3 Sperberry Hill runs in a general east / west orientation to the north of the application site. At its western end Sperberry Hill connects to the B656. To the east of the junction with Little Almshoe Lane Sperberry Hill becomes known as Stevenage Road.
- 2.4.4 In the vicinity of the proposed development site Sperberry Hill / Stevenage Road is a single-lane road with an approximate width of 5-6m. The road is subject to the National Speed Limit (60mph).

Blakemore End Road

- 2.4.5 Blakemore End Road runs in a north / south orientation which runs from the junction with Stevenage Road at its southern end, to the separately named Stevenage Road at its northern end. This Stevenage Road provides a connection between Blakemore End Road and the A602.



- 2.4.6 Blakemore End Road is a two-way, single carriageway with an approximate width of 5m at the southern end, widening to approximately 6.5m at the northern end. The road is subject to the National Speed Limit (60mph).

Stevenage Road

- 2.4.7 Stevenage Road runs in a general east – west orientation between A1(M) Junction 8 and the A602 and provides a connection from these two principal routes to the village of Little Wymondley. Stevenage Road connects with Blakemore End Road and Arch Road via a compact, 4-arm roundabout.
- 2.4.8 To the west of the junction with Blakemore End Road, Stevenage Road is a two-way, single carriageway road with a carriageway width of approximately 6.5m and is subject to the National Speed Limit (60mph). At its western end Stevenage Road connects with the A602 via a priority junction. A ghost-island right turn lane is provided for traffic turning onto Stevenage Road from the A602. From this junction, the A602 provides access to the wider highway network via A1(M) junction 8.

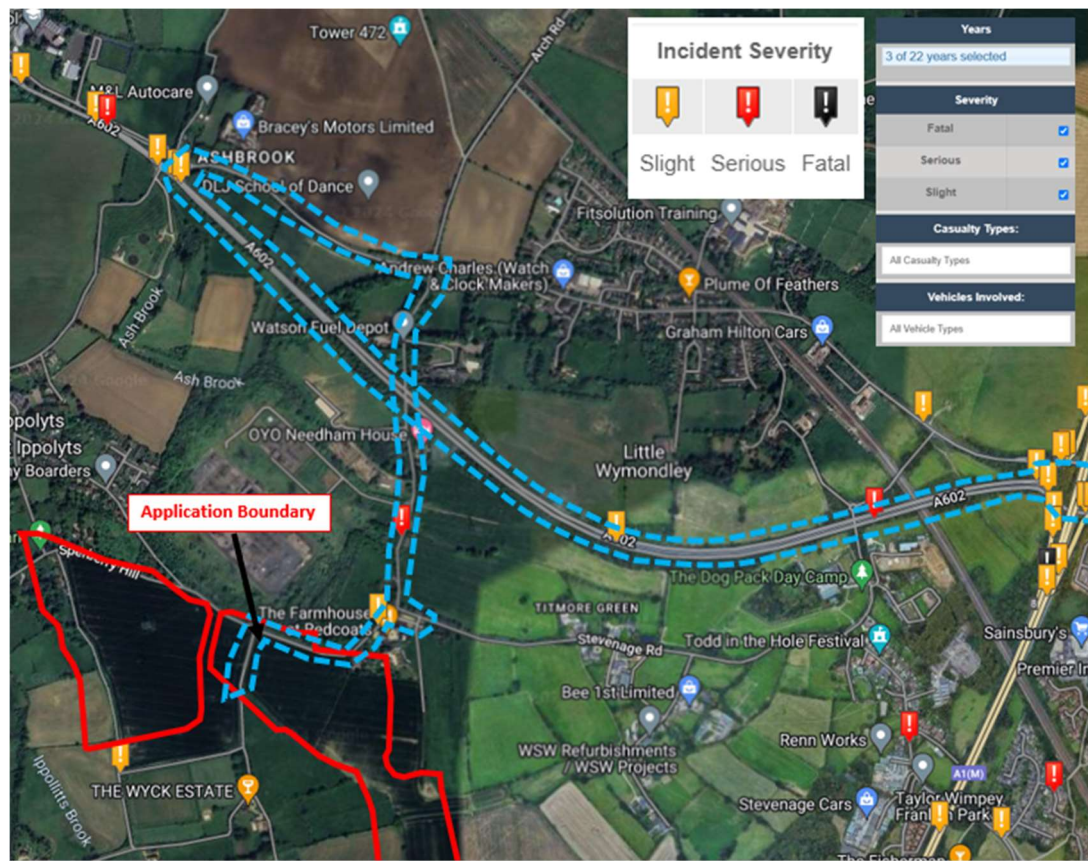
2.5 Highway Safety

- 2.5.1 Personal Injury Accident (PIA) data for the highway network adjacent to the site has been obtained from the online CrashMap resource¹. Data was extracted for the most recently available three-year period which is from 2020 to 2022 inclusive. The location and severity of the accidents are shown on **Image 2.2**.
- 2.5.2 **Image 2.2** indicates that there have been only two accidents near to the Site during the most recent three-year period. One occurred on Blakemore End Road to the south of the Wymondley substation access junction, which resulted in serious injury. The other occurred on Stevenage Road to the south-west of the junction with Blakemore End Road, which was classified as 'slight'. No accidents were recorded along Little Almshoe Lane or Sperberry Hill. When considered volumetrically, the accidents that have occurred in the vicinity of the site equate to fewer than 1 accident per year on average.

¹ www.crashmap.co.uk



Image 2.2 – Road Safety Plan (Local Access to A602)

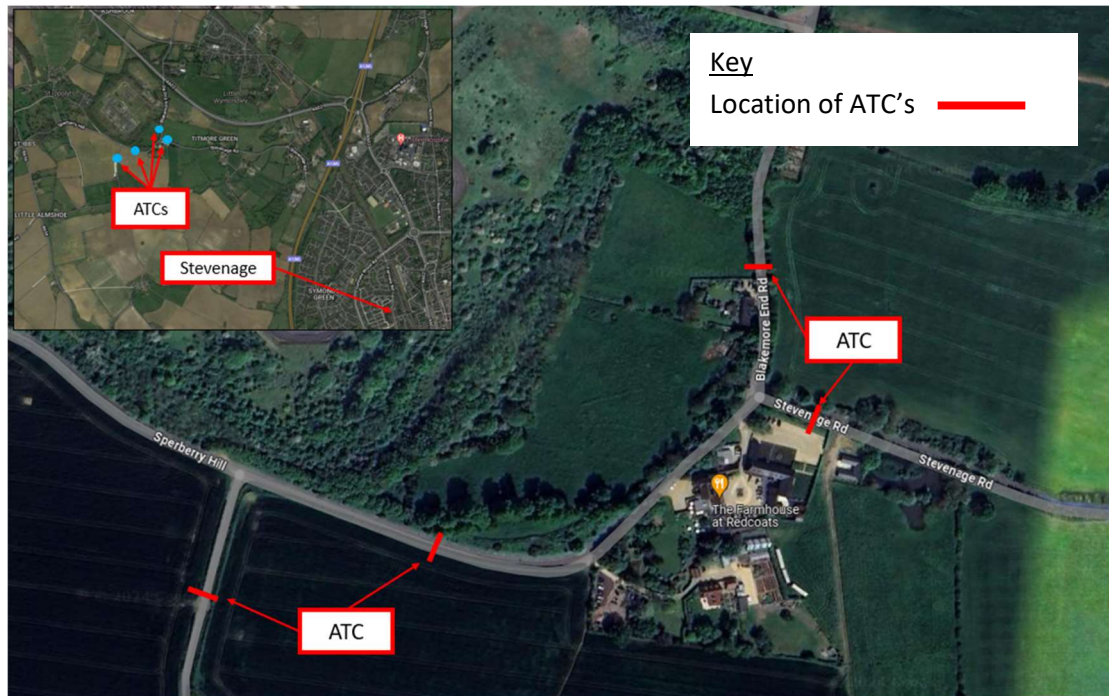


- 2.5.3 Along the wider highway network, a total of four accidents occurred along the A602 within the study area, comprising one serious injury accident and three slight injury accidents. Ten accidents occurred at the A1(M) junction 8 roundabout, all of which resulted in slight injury.
- 2.5.4 This equates to approximately 4.7 accidents per year over the most recent three-year period. Volumetrically, this number of accidents is not unusual, given that the route under consideration covers a distance of approximately 2.5km and carries a high volume of traffic. Traffic data from permanent Department for Transport (DfT) automatic traffic count (ATC) sites indicates that in 2023 there were circa 11,443,480 two-way vehicle movements on the A602 road in 2020 and circa 25 million two-way vehicle movements on the A1(M).
- 2.5.5 The accident record within the vicinity of the application site does not therefore represent a cause for concern in the context of the proposed development.

2.6 Baseline Traffic Data

- 2.6.1 Axis commissioned Automatic Traffic Counts (ATCs) to be undertaken along Little Almshoe Lane, Stevenage Road and Blakemore End Road in the vicinity of the Site. The ATCs were undertaken between 10th July – 17th July 2024 inclusive at the locations shown on **Image 2.3**.

Image 2.3 – ATC Survey Locations



- 2.6.2 Full ATC survey data outputs are contained in **Appendix D** at the end of this report. The ATC data indicated typical weekday peak hours across this study area of 08:00 – 09:00 in the AM and 16:00 – 17:00 in the PM. The following paragraphs provide a summary of the ATC data for each count location.

Little Almshoe Lane

- 2.6.3 The recorded two-way flows on Little Almshoe Lane are summarised in **Table 2.1**.
- 2.6.4 Review of the data summarised in **Table 2.1** shows that, on average, 153 and 139 two-way vehicle movements were recorded in the typical weekday AM (08:00-09:00) and PM (16:00-17:00) peak hours respectively along Little Almshoe Lane.
- 2.6.5 When assessed volumetrically, this equates to an average of approximately 2-3 two-way movements per minute in both the AM peak and PM peak periods.

Table 2.1 – Little Almshoe ATC Data (Traffic Flows)

Date (July)	AM Peak (08:00-09:00)			PM Peak (16:00-17:00)		
	NB	SB	Two-Way	NB	SB	Two-Way
	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)
Thursday 11 th	102 (0)	69 (0)	171 (0)	79 (1)	62 (0)	141 (1)
Friday 12 th	71 (0)	49 (0)	120 (0)	88 (0)	53 (0)	141 (0)
Monday 15 th	78 (1)	55 (0)	133 (1)	66 (0)	47 (0)	113 (0)
Tuesday 16 th	92 (1)	67 (1)	159 (2)	93 (0)	46 (1)	139 (1)
Wednesday 17 th	102 (0)	82 (2)	184 (2)	100 (0)	60 (0)	160 (0)
Average	89 (0)	64 (1)	153 (1)	85 (0)	54 (0)	139 (0)

Stevenage Road (West of Blakemore End Road)

- 2.6.6 The recorded two-way flows along Stevenage Road between Little Almshoe Lane and Blakemore End Road are summarised in **Table 2.2**.

Table 2.2 – Stevenage Road (West of Blakemore End Road) ATC Data (Traffic Flows)

Date (July)	AM Peak (08:00-09:00)			PM Peak (16:00-17:00)		
	EB	WB	Two-Way	EB	WB	Two-Way
	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)
Thursday 11 th	233 (1)	160 (0)	393 (1)	148 (0)	296 (0)	444 (0)
Friday 12 th	177 (0)	112 (1)	289 (1)	169 (0)	218 (0)	387 (0)
Monday 15 th	192 (0)	120 (0)	312 (0)	125 (0)	216 (0)	341 (0)
Tuesday 16 th	229 (1)	162 (1)	391 (2)	149 (0)	258 (0)	407 (0)
Wednesday 17 th	235 (0)	156 (3)	391 (3)	159 (0)	278 (0)	437 (0)
Average	213 (0)	142 (1)	355 (1)	150 (0)	253 (0)	403 (0)

- 2.6.7 Review of the data summarised in **Table 2.1** shows that, on average, 355 and 403 two-way vehicle movements were recorded in the typical weekday AM (08:00-09:00)

and PM (16:00-17:00) peak hours respectively along Stevenage Road to the west of Blakemore End Road.

- 2.6.8 When assessed volumetrically, this equates to an average of approximately 6-7 two-way movements per minute in both the AM peak and PM peak periods.

Blakemore End Road

- 2.6.9 The recorded two-way flows along Blakemore End Road are summarised in **Table 2.3**.

Table 2.3 – Blakemore End Road) ATC Data (Traffic Flows)

Date (July)	AM Peak (08:00-09:00)			PM Peak (16:00-17:00)		
	NB	SB	Two-Way	NB	SB	Two-Way
	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)
Thursday 11 th	113 (0)	306 (1)	419 (1)	198 (1)	89 (0)	287 (1)
Friday 12 th	83 (1)	219 (0)	302 (1)	202 (0)	118 (0)	320 (0)
Monday 15 th	90 (0)	277 (0)	367 (0)	156 (0)	97 (0)	253 (0)
Tuesday 16 th	88 (1)	375 (3)	463 (4)	219 (0)	90 (0)	309 (0)
Wednesday 17 th	92 (2)	411 (5)	503 (7)	225 (1)	86 (0)	311 (1)
Average	93 (1)	318 (2)	411 (3)	200 (0)	96 (0)	296 (0)

- 2.6.10 Review of the data summarised in **Table 2.1** shows that, on average, 411 and 296 two-way vehicle movements were recorded in the typical weekday AM (08:00-09:00) and PM (16:00-17:00) peak hours respectively along Blakemore End Road.

- 2.6.11 When assessed volumetrically, this equates to an average of approximately 7 two-way movements per minute in the AM peak period and 5 two-way movements per minute in the PM peak period.

Stevenage Road (East of Blakemore End Road)

- 2.6.12 The recorded two-way flows along Stevenage Road to the east of Blakemore End Road are summarised in **Table 2.4**.



Table 2.4 – Stevenage Road (East of Blakemore End Road) ATC Data (Traffic Flows)

Date (July)	AM Peak (08:00-09:00)			PM Peak (16:00-17:00)		
	EB	WB	Two-Way	EB	WB	Two-Way
	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)	Total (HGV)
Thursday 11 th	416 (1)	152 (0)	568 (1)	153 (0)	409 (4)	562 (4)
Friday 12 th	306 (0)	112 (0)	418 (0)	168 (0)	307 (2)	475 (2)
Monday 15 th	370 (2)	122 (0)	492 (2)	134 (0)	281 (1)	415 (1)
Tuesday 16 th	472 (2)	129 (3)	601 (5)	159 (0)	397 (1)	556 (1)
Wednesday 17 th	484 (0)	117 (0)	601 (0)	169 (0)	404 (2)	573 (2)
Average	410 (1)	126 (1)	536 (2)	157 (0)	360 (2)	517 (2)

- 2.6.13 Review of the data summarised in **Table 2.4** shows that, on average, 536 and 517 two-way vehicle movements were recorded in the typical weekday AM (08:00-09:00) and PM (16:00-17:00) peak hours respectively along Stevenage Road to the east of Blakemore End Road.
- 2.6.14 When assessed volumetrically, this equates to an average of approximately 9 two-way movements per minute in both the AM peak and PM peak periods.

3.0 PROPOSED DEVELOPMENT

3.1 General

- 3.1.1 The Applicant is proposing to construct and operate a photovoltaic (PV) solar array and associated battery storage and supporting infrastructure, including grid connection. The PV solar array will be in situ for a period of 40 years, after which the site would be decommissioned unless planning permission is secured for continued operation.
- 3.1.2 The proposed layout of the development is shown on **Drawing no. 3732-01-03** provided within **Appendix A**.

3.2 Solar Array

- 3.2.1 The Resubmission Scheme would comprise the following main elements:
- i) Photovoltaic solar panels and associated support frames;
 - ii) String Inverters;
 - iii) 4 No. Transformer Stations;
 - iv) 8 No. Battery Storage Containers and associated inverter/transformers;
 - v) 1 No. DNO Substation;
 - vi) 1 No. Switchroom Building;
 - vii) 1 No. Control Room Building;
 - viii) Grid connection cabling to National Grid's Wymondley Substation;
 - ix) c.1.3km of new/resurfaced internal access tracks (3.5m wide and constructed using compacted Type 1 stone);
 - x) 2 No. improved access points off Little Almshoe Lane, and an access point from Stevenage Road;
 - xi) Ditch culverts for track crossings;
 - xii) c. 4.5km deer/stock fencing;
 - xiii) c.29 No. 4m High CCTV cameras;
 - xiv) c. 2,335m² woodland planting; and
 - xv) New areas of species rich grassland.
- 3.2.2 The solar array would export up to 25MW of renewable electricity to the National Grid during peak operation. The battery storage element would either be used to store up to 12.5MW of excess power that was generated by the solar array but could not be

exported, or to manage the export to make power available to the grid during times of peak power or provide grid balancing services.

3.3 Grid Connection

- 3.3.1 The grid connection route for the Resubmission Scheme is illustrated on **Drawing no. 3732-01-02** provided within **Appendix A** at the end of this report. The point of connection to the grid will be at the National Grid Wymondley Substation to the north of the site. The connection cabling will be laid underground within the adopted highway.

3.4 Site Access Arrangements

Construction Phase

- 3.4.1 During the construction period, the site would be accessed from Junction 8 of the A1(M) along the A602 via Stevenage Road and Blakemore End Road. The main site entrance would be accessed utilising the existing farm access track located approximately 60m east of the Sperberry Hill / Stevenage Road / Blakemore End Road junction. Construction staff vehicles would also egress this site via this route.
- 3.4.2 Construction HGV traffic will follow a one-way route through the site to egress onto Little Almshole Lane via a temporary access on the western edge of the site, before returning to the wider highway network via Sperberry Hill and Blakemore End Road, as shown on **drawing numbers 3732-01-ATR01 and ATR02 (Appendix C)**.
- 3.4.3 Construction vehicles will also need to cross Little Almshole Lane to access the western parcel of land on the opposite side of the road. As such it will also be necessary for vehicles to egress onto Little Almshole Lane from the western parcel of land as well as the eastern parcel.

Operational Phase

- 3.4.4 During the operational phase, access for maintenance requirements would be undertaken using a vehicle no larger than a 3.5T panel van. As such access for maintenance requirements would not need to be bound to a specific access route. Primary site access and egress for operational purposes would be via the access track from Stevenage Road. However, the access onto Little Almshole Lane would



be retained in order to permit access for maintenance vehicles into the western parcel of the site.

Visibility Splays

- 3.4.5 Little Almshole Lane is subject to the National Speed Limit (60mph), and if a strict interpretation of CD 109 of the Design Manual for Roads and Bridges (DMRB) is adopted, the stopping sight distance and junction visibility requirement for roads with a design speed of 62mph (100kph) is 2.4m x 215m.
- 3.4.6 The ATC survey data collected along Little Almshole Lane (see **Table 2.1**) included vehicle speed data. Full details of the results are contained in **Appendix D** and the observed 85th percentile speeds are summarised as follows:
- i) Northbound – 33.2mph; and
 - ii) Southbound – 30.6mph.
- 3.4.7 The 85th percentile speeds outlined above provide evidence that vehicle speeds along Little Almshole Lane are lower than the prevailing speed limit. Based on these observed 85th percentile speeds, this would equate to the following minimum visibility requirements, extrapolated from the stopping sight distances set out in DMRB.
- i) Visibility to south – 2.4m x 77m; and
 - ii) Visibility to north – 2.4m x 67.9m.
- 3.4.8 **Drawing Number 3732-01-D01 (Appendix B)** shows that a minimum visibility splay of 2.4m x 68m to the north, and a maximum visibility splay of 2.4m x 77m to the south, are achievable for vehicles egressing from the western parcel of the site, in accordance with the relevant design guidance set out in the DMRB.
- 3.4.9 For the egress from eastern parcel of the site, a minimum visibility splay of 2.4m x 68m to the north is achievable, in accordance with the relevant design guidance set out in the DMRB. To the south, the alignment of the carriageway restricts visibility from the eastern parcel, such that it is not possible to achieve a visibility splay of 2.4m x 68m, which is the desirable minimum as required by DMRB standards. However, a maximum visibility splay of 2.4m x 61m is achievable. This exceeds both the DMRB absolute minimum visibility distance of 2.4m x 55m, and the visibility standards set out in Manual for Streets (MfS).

3.4.10 This is considered to be acceptable given the limited number of movements that would use this access (a maximum of 2 HGV movements per hour during the most intensive phase of construction), and the lightly trafficked nature of Little Almshoe Lane. However, in order to minimise the risk to highway safety resulting from construction vehicle movements it is proposed that all HGV movements onto and across Little Almshoe Lane will be controlled by Banksmen. Further details of the proposed traffic management will be set out within the Construction Traffic Management Plan.

3.4.11 In order to achieve the required visibility, it will be necessary to cut back the existing vegetation along the edge of the carriageway to a maximum height of 1m. Review of the adopted highway and the applicant's land ownership boundaries indicates that the visibility splays would be fully achievable within the client's land ownership and / or the adopted highway, with no recourse for third-party land.

Swept Path Assessment

3.4.12 In order to demonstrate that the site can be safely and satisfactorily accessed, swept path assessments have been undertaken using a 16.5m articulated lorry, which is the largest vehicle anticipated to require access to the site during the construction period. The access has also been designed to accommodate an 18m low loader if necessary.

3.4.13 **Drawing numbers 3732-01-D01 and 3732-01-D02**, contained in **Appendix C**, show that the local highway network to the site can satisfactorily cater for construction-related vehicles requiring access to the site, although there may be a requirement for temporary removal and trimming of adjoining vegetation.

3.4.14 The swept path analysis illustrates that the largest vehicles would be required to use the full width of the carriageway along Sperberry Hill / Stevenage Road and Little Almshoe Lane, both of which have a carriageway width of between 4 – 5m for the majority of their length. Blakemore End Road is generally wide enough to permit two-way movement of HGVs along the majority of its length, although there are short sections where the carriageway width is narrower. Stevenage Road between Blakemore End Road and the A602 has a consistent carriageway width of 6.5m which is sufficient to accommodate two-way HGV movements.



3.4.15 This proposed route is considered to be acceptable for the following reasons:

- i) The trips associated with the construction period would be limited and temporary in nature. Trips to the site once the solar panels are fully operational would be strictly limited to the occasional LGV associated with maintenance requirements and would be de minimis in nature. The maximum trip generation associated with the proposed development would be 144 daily two-way movements, including both delivery-related movements and staff trips (see **Section 4**). This level of movement would occur for just a small portion of the construction period and is therefore only temporary and limited in nature (only around 4 weeks out of the 36-week construction period);
- ii) It is likely that the majority of staff trips would occur at the beginning and end of the working day and are unlikely to coincide with delivery-related movements. There will be a maximum of 2-3 two-way delivery-related movements per hour, on average, throughout the working day during the busiest period of the construction phase, which equates to approximately 1 movement every 25 minutes. The proposed one-way access route ensures that construction HGVs will not need to pass in opposite directions along Little Almshoe Lane or Sperberry Hill / Stevenage Road. The arrival and departure of construction HGVs will be managed to ensure that the interaction between construction HGVs along Blakemore End Road is minimised. This frequency of activity also means it is unlikely that a construction-related HGV will need to pass a non-construction HGV travelling in the opposite direction along Little Almshoe Lane, Sperberry Hill / Stevenage Road or Blakemore End Road;
- iii) This is demonstrated empirically by the baseline survey data undertaken along Little Almshoe Lane, Stevenage Road and Blakemore End Road in the vicinity of the site (see **Tables 2.1 to 2.4**), which shows that all of these roads are relatively lightly trafficked. There are only around 2 two-way movements per minute, on average, during peak hours, along Little Almshoe Lane, and between 7 and 9 two-way movements per minute along Sperberry Hill / Stevenage Road and Blakemore End Road during peak hours. In addition, there are only around 4 two-way HGV movements per day on average along Little Almshoe Lane, 9 along Sperberry Hill / Stevenage Road west of Blakemore End Road, 21 along Sperberry Hill / Stevenage Road east of Blakemore End Road, and 13 along Blakemore End Road.

- iv) Sperberry Hill / Stevenage Road widens out at a farm access track approximately halfway between Little Almshoe Lane and Blakemore End Road, which provides an informal passing place if required to allow general road users to pass construction vehicles. Construction traffic will only use Little Almshoe Lane for a distance of less than 100m.
 - v) It is not anticipated that there will be any need for low loader access during the construction period. If there is any requirement for low loader deliveries, these will comprise a very small proportion of the total delivery-related movements.
- 3.4.16 With regards to the above, the proposed access arrangements from Little Almshole Lane are considered to be sufficient when set in the context of the nature of the local highway network and the development proposals.
- 3.4.17 As mentioned earlier within this report at paragraph 1.3.3, in accordance with the post-submission response received from HCC in relation to the 2023 Scheme a draft CTMP has been prepared. It is proposed that its implementation will ensure that any impacts that may arise from construction-related traffic will be identified, managed and mitigated against. The CTMP document is provided separately to the TS but should be read in conjunction with it.
- 3.4.18 It should also be noted that any damage that is caused to the carriageways and/or verges along Blakemore End Road, Sperberry Hill / Stevenage Road and Little Almshoe Lane as a result of large vehicles travelling via these routes would be made good by the applicant. This could be secured by a suitably worded planning condition to ensure that the condition of the route is recorded both before / after the installation period and that nil detriment occurs to the local highway network.
- 3.4.19 During the operational phase, the largest vehicle to require access to the site would be an LGV for maintenance purposes and would therefore be sufficiently accommodated in light of the above.
- 3.4.20 A number of turning heads will be provided internally within the site to cater for maintenance vehicles requiring access to the site. **Drawing no. 3732-01-ATR03 (Appendix C)** shows the ability of a 3.5T van to adequately access, manoeuvre and egress the site in a forward gear.



Proposed Parking Arrangements

- 3.4.21 During the construction phase, there would be a total of approximately 120 staff on-site during peak construction activities. It is anticipated that a significant number of construction staff will partake in a car share. For robustness, it is assumed that the average vehicle occupancy rate per vehicle would be a minimum of 2, equating to a maximum of 60 construction staff vehicles accessing the site each day during peak activities. Car parking for a minimum of 60 vehicles will therefore be provided within the curtilage of the site during the construction phase.
- 3.4.22 The exact location of the parking provision within the site is likely to vary depending on the construction programme. However, the total area of the development site is approximately 30 hectares (excluding grid connection and off-site planting), and as such there is ample space available to provide staff car parking within the site boundary, without impacting on the local highway network.
- 3.4.23 It is not considered necessary to provide any parking for the operational phase of the development, since trips to the site would be limited to the occasional LGV accessing the site for maintenance services.

4.0 TRAFFIC GENERATION

4.1 Introduction

4.1.1 The anticipated trip generation associated with the development proposals have been derived based on experience of having promoted other solar farm facilities nationally and from information supplied by the applicant.

4.1.2 The traffic generation forecasts relate to the construction period only. Trips to the site once the solar farm is fully operational would be limited to the occasional LGV associated with maintenance requirements and would be de minimis in nature.

4.2 Trip Generation during the Construction Period

4.2.1 In total, the construction schedule of the development proposals is expected to last for 36 weeks. Construction activities would take place 5.5 days per week, during the following hours:

- i) Monday to Friday 07:30 – 18:00; and
- ii) Saturday and Sunday 08:30 – 18:00.

4.2.2 Deliveries and noise generating activities would only take place from Monday to Saturday (inclusive) within the following hours:

- i) Monday to Friday 07:30 – 18:00; and
- ii) Saturday 07:30 – 13:00; and
- iii) No deliveries on Sundays with the exception of one-off abnormal loads or large vehicles such as cranes.

4.2.3 The construction period would comprise the following key construction-related works, which also include for the setting up and decommissioning of site compound areas:

- i) Establishment of site compounds and entrance point;
- ii) Erection of deer fencing and gates to site perimeter (including ditch culverts for crossings);
- iii) Hedgerow planting (subject to time of year);
- iv) Construction of site access tracks and temporary crane hard standings at inverter locations (including ditch culverts for crossings);
- v) Installation of CCTV poles and cameras;

- vi) Installation of solar panels and frames;
- vii) Installation of inverters and storage buildings;
- viii) Installation of control building and switchgear buildings; and
- ix) Grid connection and transformer station.

4.2.4 **Table 4.1** summarises the number and type of deliveries that are anticipated to be generated during the 36-week (9-month) construction period.

Table 4.1 – Anticipated Traffic Generation during the Construction Period

Temporary/Ancillary Works & Equipment	Details of load	One-Way Trips	Two-Way Trips
Welfare Delivery	HGV	10	20
Welfare Collection	HGV	10	20
Welfare Servicing (Diesel, water and waste)	HGV	108	216
Fencing	HGV	3	6
Aggregate for roadways	16T Tipper	260	520
Construction support total		391	782
PV Equipment/Components	Details of load	One-Way Trips	Two-Way Trips
PV panels	HGV	75	150
Metal frames	HGV	45	90
Cabling	Mixed	13	26
Inverters and transformers	Mixed	90	180
BESS Containers	Mixed	16	32
Other	Mixed	5	10
PV Equipment/Components Total		244	488
Sum Total		635	1,270

4.2.5 As summarised in **Table 4.1**, it is anticipated that the total number of deliveries requiring access to the Site would be some 635 one-way trips (1,270 two-way trips) across the full 36-week construction period.

4.2.6 In addition to the above, there will also be approximately 80 staff requiring access to the site per day, on average. During peak activities, the number of construction-related staff may rise to 120.

4.2.7 The following subsections of this report set out the ‘first principles’ assumptions and trip generation forecasts of the delivery and staff movements that might be expected to occur on a daily basis.

HGV Deliveries

- 4.2.8 As set out in **Table 4.1**, the majority of the deliveries would relate to the delivery of aggregate (260 delivery trips, or 520 two-way movements) for the construction of site compounds and internal access tracks.
- 4.2.9 It is anticipated that all aggregate would be brought to the site within the first 4-6 weeks of the construction period. For robustness, it is assumed that this would take place within a compressed 4-week (22 day) period. During this period there would also be approximately 26 two-way HGV movements associated with the erection of boundary fencing and the establishment of site welfare facilities and compound areas.
- 4.2.10 For the remainder of the construction period (32 weeks), there would be a total of 362 one-way (724 two-way) deliveries (i.e. all remaining deliveries that are not associated with aggregate, fencing or welfare set-up).
- 4.2.11 With regards to the above, **Table 4.2** sets out the 'first principles' assumptions and associated traffic generation forecasts for the construction-related deliveries (excluding staff).

Table 4.2 – 'First Principles' Assumptions and Trip Generation Forecasts for Deliveries

Breakdown of Trip Generation Proportions per Operating Day	
There would be 58 operating hours per week (5 x 10.5 hour weekdays and 1 x 5.5 hour Saturday)	
As a proportion of the weekly operating hours, weekdays would account for 91% of weekly trips (over 5 weekdays)	
This equates to 18.2% of weekly trips per weekday (i.e. 91% / 5)	
As a proportion of the weekly operating hours, Saturdays would account for 9% of weekly trips	
Traffic Generation (Weeks 1-4)	
Within the first 4 weeks of the construction period, there will be:	546 two-way delivery-related movements, in total
This equates to approximately:	137 two-way delivery-related movements per week (on average)
Based on the proportional breakdown of operational hours above, this equals approximately	24 two-way HGV movement per weekday, on average*
And approximately,	12 two-way HGV movements per Saturday, on average*

Traffic Generation (Weeks 5-36)	
For the remaining 32 weeks of the construction period, there will be:	724 two-way delivery-related movements, in total
This equates to approximately:	23 two-way delivery-related movements per week (on average)
Based on the proportional breakdown of operational hours above, this equals approximately	4 two-way HGV movement per weekday, on average*
And approximately,	2 two-way HGV movements per Saturday, on average*

*Subject to rounding

- 4.2.12 As set out in **Table 4.2**, during the construction period, there are expected to be a total of approximately 24 two-way delivery-related movements per weekday and 12 two-way delivery related movement per Saturday, on average.
- 4.2.13 In reality, aggregate may be delivered over a longer period and so the actual trip generation during this period could be less than what is indicated in **Table 4.2**. The assessment is therefore considered to be robust.
- 4.2.14 The delivery-related movements associated with the remaining 32 weeks are significantly lower than the initial 4-week period and would be largely imperceptible and temporary in nature. On average, there would be 4 two-way delivery-related movements per weekday and 2 two-way movements per Saturday. This level of trip generation is considered to be insignificant.

Construction Staff Trips

- 4.2.15 In addition to trips associated with deliveries, and as mentioned earlier, there will also be a number of movements associated with staff trips. The 'first principles' assumptions and associated trip generation relating to construction staff are set out in **Table 4.3**.

Table 4.3 – 'First Principles' Assumptions and Trip Generation Forecasts for Staff

Staff Trips	
On average there will be:	80 construction staff on site per day
During peak activities this could rise to:	120 construction staff on site per day
Assuming a car occupancy of 2 people per vehicle, this equates to:	80 two-way staff trips per day on average
Or:	120 two-way staff trips per day during peak activities

Assuming that construction activities take place 7 days per week, this would equate to:	560 two-way staff movements per week, on average
During peak activities, this could rise to:	840 two-way staff movements per week

- 4.2.16 As set out in **Table 4.3**, approximately 80 construction-related staff would require access to the site per day on average and up to 120 staff during peak activities. It is anticipated that a significant number of construction staff will partake in a car share, thereby reducing the number of trips to the site accordingly.
- 4.2.17 For robustness, it is assumed that the average vehicle occupancy rate would be 2 people per vehicle and so the number of trips made by staff per day would be some 40 one-way trips or 80 two-way trips on average, and a maximum of 60 one-way or 120 two-way staff trips during peak activities.
- 4.2.18 In reality, it is anticipated that the level of car occupancy could be higher than this, i.e. perhaps 3 people per vehicle or more, and therefore adding a further layer of robustness to the assessment.

4.3 Total Construction-Related Traffic Generation

- 4.3.1 In total, there will be a maximum of approximately 144 two-way movements per day on average during peak activities within the first 4 weeks of the construction period. This comprises 25 delivery-related movements and 120 staff trips.
- 4.3.2 It should be noted that the majority of movements, which would comprise light vehicle trips associated with staff arrivals and departures, would occur at the start and end of the day. Daily HGV construction related movement would be spread throughout the day. This would therefore equate to an average of 2-3 additional two-way movements per hour throughout the working day, or approximately one additional vehicle movement every 25 minutes. It should also be reiterated that this level of trip generation is temporary in nature (mainly concentrated in only around 4 weeks out of the 36-week construction period).
- 4.3.3 For the remainder of the construction period (32 weeks) there would be a maximum of approximately 84 two-way movements per day, comprising 4 delivery-related movements and 80 staff trips. Staff arrivals and departures would occur at the start and end of the working day. As such, there would only be 1 HGV movement every 2-3 hours on average during this phase of construction.

- 4.3.4 This level of traffic generation is low in absolute terms and would not be expected to result in any material impact on highway safety or the free flow of traffic on the surrounding highway.
- 4.3.5 Furthermore, the local highway network is currently lightly trafficked and would continue to be with the inclusion of the development-related trips. The proposed traffic generation would not approach triggering the 30 two-way trips per hour threshold that was previously deemed to warrant more detailed capacity assessment work or the production of a full Transport Assessment (TA)².
- 4.3.6 It should also be reiterated here that this level of traffic generation is temporary in nature and any trips to the Site, once operational, would be limited to the occasional LGV for maintenance purposes and would be insignificant in nature.
- 4.3.7 Furthermore, any existing trips associated with farming activities currently undertaken within the site area have not been netted off from the forecast proposed number of trips. Whilst the level of trips associated to existing agricultural uses on the site are likely to be minimal, any such trips will cease during the construction of the solar facility and through into operation.

4.4 Operational Trip Generation

- 4.4.1 Any trips generated during the construction phase of the development will be temporary. Once the construction of the solar array is complete, only minimal maintenance will be required. The site will be an unmanned passive installation. Operational traffic will be limited to occasional visits to undertake any checks, maintenance and adjustments to infrastructure as required. This is likely to be limited to no more than 1 or 2 no. visits per month in a van or similar vehicle.

4.5 HGV Routeing

- 4.5.1 Access to the site either from the west via Sperberry Hill or from the east via Stevenage Road is not desirable. A routeing strategy will therefore be imposed to restrict vehicles approaching from these directions.

² Department for Communities and Local Government / Department for Transport (2007). *Guidance on Transport Assessment*. Para 2.11.



- 4.5.2 The exact destination of development related HGV trips is uncertain at this stage and would be determined by the sourcing of materials and plant by the appointed contractor. HGVs would nonetheless be routed primarily along the strategic road network, avoiding residential areas where possible and statutory limits on HGV movements (such as weight restrictions).
- 4.5.3 The majority of construction traffic is likely to leave the strategic road network at Junction 8 of the A1(M). Construction-related traffic would then travel to and from the site via the A602, Stevenage Road and Blakemore End Road.
- 4.5.4 Construction traffic would then access the site via the existing farm access track off Stevenage Road adjacent to The Farmhouse at Redcoats hotel. Construction traffic would then route through the site via a one-way system to egress the site onto Little Almshoe Lane, before re-joining Blakemore End Road via Sperberry Hill / Stevenage Road in order to return to the A602.
- 4.5.5 Given the low traffic generated by the Proposed Development as discussed elsewhere in this chapter, it is not considered that the Proposed Development would result in any material impact on the above route.
- 4.5.6 The proposed construction traffic route is illustrated further in **Image 4.1**.

Image 4.1 – Construction Traffic Routeing to and from Site



5.0 SUMMARY AND CONCLUSION

- 5.1.1 Axis have been appointed by Brockwell Storage and Solar Limited (BSSL, hereafter referred to as 'the applicant') to provide highways and transport advice to accompany a planning application for a solar farm including grid connection and associated infrastructure on land to the south of Sperberry Hill, near Hitchin in North Hertfordshire.
- 5.1.2 The site is circa 35.5 hectares (ha) in size and comprises a number of fields which are currently cultivated for crops, split across two parcels of land which are divided by Little Almshoe Lane.
- 5.1.3 The proposals comprise the installation of a PV solar array and associated battery storage and supporting infrastructure, including grid connection. The solar array would export up to 25MWe of renewable electricity during peak operation. The battery storage element would either be used to store up to 12.5Mwe of excess power that was generated by the solar array but could not be exported, or to manage the export to make power available to the grid during times of peak power or provide grid balancing services.
- 5.1.4 Access to the site would be via the existing farm access track off Stevenage Lane, adjacent to The Farmhouse at Redcoats hotel. Construction-related traffic would access the site to and from the Junction 8 of the A1(M) via the A602, Stevenage Road, Blakemore End Road and Sperberry Hill / Stevenage Road. Construction traffic would then route through the site via a one-way system to egress the site onto Little Almshoe Lane, before re-joining Sperberry Hill Stevenage Road in order to return to Blakemore End Road. Given the relatively lightly trafficked nature of the local highway network, and that most trips will be of a limited and temporary nature, the site access arrangements are considered to be appropriate for the scale and nature of the development.
- 5.1.5 Analysis of accident data has been undertaken for the local highway network within the most recently available 3-year period. Overall, it is considered that there are no discernible clusters of accidents that would be cause for concern. Therefore, the existing accident record does not present a material concern in the context of the proposed development.



-
- 5.1.6 The suitability of the access route has been considered with reference to the geometric attributes of the roads, the limited nature of the proposed development traffic, and forecast temporary levels of trip generation. The road was found to be able to accommodate the proposed development traffic satisfactorily.
- 5.1.7 The proposed access from Sperberry Hill / Stevenage Road utilises an existing access junction. The proposed accesses from Little Almshoe Lane have been shown to operate in accordance with the appropriate guidance which in this instance is DMRB. The appropriate visibility splay requirements for the observed 85th percentile vehicle speeds have been shown to be achievable, with no recourse for third-party land. It is therefore considered that the proposed access provides sufficient visibility for vehicles to safely egress the site.
- 5.1.8 This TS assesses the traffic generation of the construction phase, which would take place over a 36-week period. Once operational, trips to the Site would be limited to the occasional LGV accessing the Site for maintenance purposes and would be de minimis in nature.
- 5.1.9 The trip generation of the construction period has been forecast using a 'first principles' approach based on experience of promoting other solar parks nationally and from information supplied by the applicant.
- 5.1.10 In total, there will be a maximum of approximately 144 two-way movements per day during peak activities within the first 4 weeks of construction. This is inclusive of delivery-related movements and staff trips. For the remainder of the construction period (32 weeks), there would be a maximum of approximately 84 two-way movements per day on average, again inclusive of delivery-related movements and staff trips.
- 5.1.11 This level of traffic generation is low in absolute terms and would not be expected to result in any material impact on highway safety or the free flow of traffic on the surrounding highway network. No further detailed capacity assessment is considered necessary.
- 5.1.12 It is intended that temporary mitigation will be provided during the impermanent construction phase, in the form of traffic management such as banksmen. Details of this are provided within the accompanying CTMP.

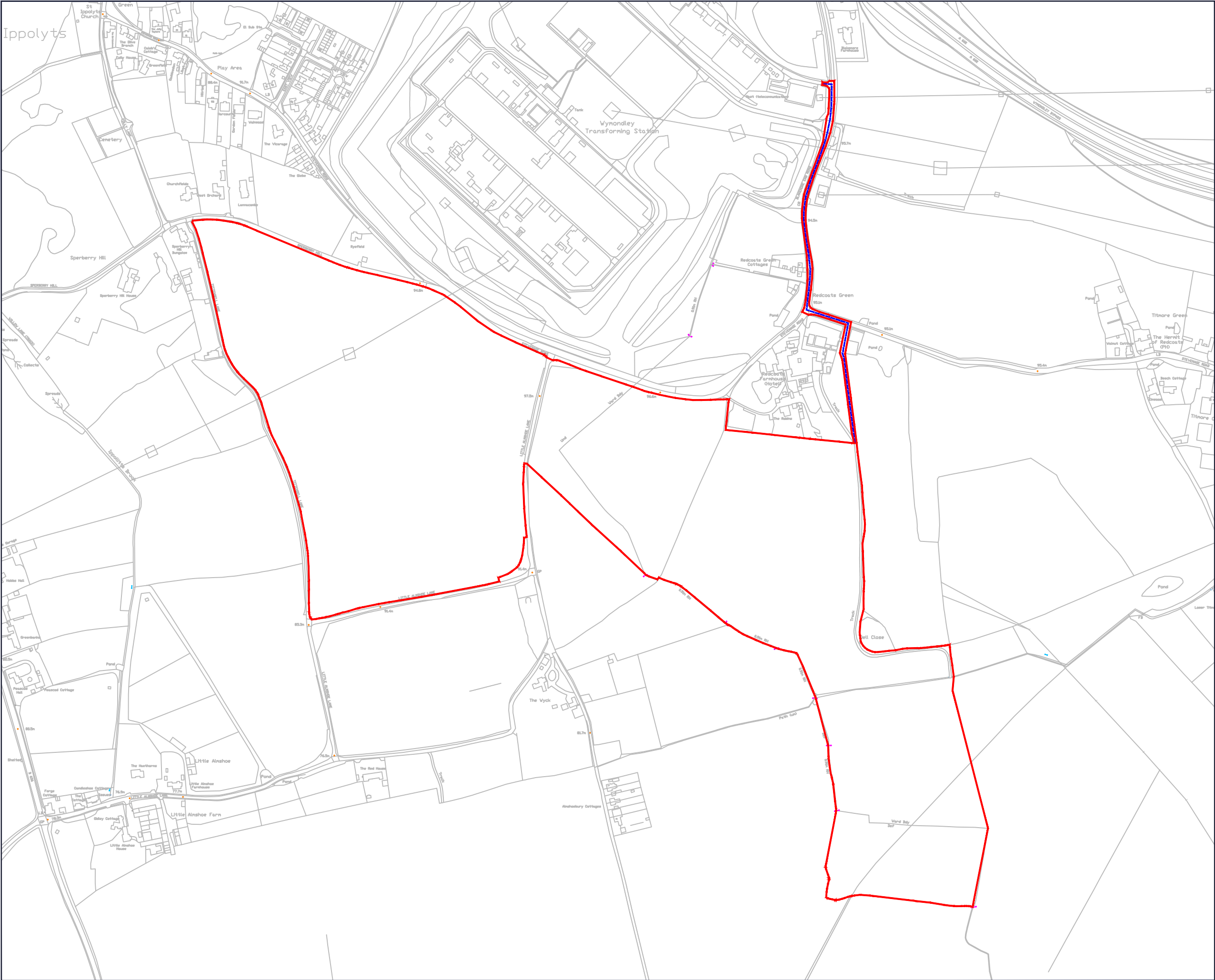
5.1.13 Paragraph 115 of the NPPF states that:

“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe”.

5.1.14 Based on the evidence presented in this TS, no unacceptable impact would be created by the scheme and there should be no reason to withhold planning permission from a transport perspective.

Appendix A – Proposed Site Layout Plan





 Application Site

 Indicative Grid Connection

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Client

Brockwell Storage and Solar Ltd

Project

Sperberry Hill Solar Array and BESS

Drawing Title

Statutory Plan

Scale

1:5000 @A3

Date

September 2024

Dwg no

3732-01-02

Status

Planning

Drawn Checked

TR ToK

Rev



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revision: G desc: Resubmission Layout

date: 21-10-24



- Application Site
- Deer / Stock Fence
- Solar PV Arrays
- String Inverter
- Transformer Station
- Battery Container
- Battery Transformer Unit
- Other Building (Labelled)
- Existing Access Track Upgraded
- Proposed Access Track
- Proposed Compound Areas
- Archaeologically Sensitive Area
- Surface Water Attenuation Basin
- CCTV

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Client
Brockwell Storage and Solar Ltd
Project
Sperberry Hill Solar Array and BESS
Drawing Title

General Arrangement

Scale
1:5000 @A3
Date
October 2024

Status
Planning
Drawn
TR
Checked
ToK

Dwg no
3732-01-03
Rev
G