

Green Hill Solar Farm

EN010170

Outline Construction Traffic Management Plan

Prepared by: KMC

Date: May 2025

Document Reference: APP/GH7.9

APFP Regulation 5(2)(q)



Green Hill Solar Farm

Outline Construction Traffic Management Plan

Document Reference: EN010170/APP/GH7.9

May 2025

Document:	Outline Construction Traffic Management Plan
Project:	Green Hill Solar Farm
Client:	Green Hill Solar Farm Limited
Job Number:	23061

Issue	Date	Status	Prepared	Reviewed	Approved
1	23.05.2025	Final	AB	SM	KM

This report has been prepared by KMC Transport Planning Ltd ('KMC') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which KMC was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). KMC accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

Contents

1	Introduction	3
1.1	Outline.....	3
1.2	The Scheme	3
1.3	Outline CTMP	4
2	Proposed Development	6
2.1	Outline.....	6
2.2	Solar Arrays	6
2.3	Energy Storage Facility	9
2.4	Substations	10
2.5	Grid Connection	10
2.6	Construction Compounds	10
2.7	Internal Haul Routes	11
2.8	General Works.....	11
2.9	Programme.....	11
3	Construction Vehicle Trips	13
3.1	Trip Generation.....	13
3.2	Construction Phase.....	13
4	Construction Vehicle Routing.....	16
5	Construction Vehicle Traffic – Mitigation Measures.....	18
5.2	Road Condition Survey	18
5.3	Access Points	18
5.4	Parking	18
5.5	Management of Deliveries.....	18
5.6	Wheel Washing.....	19
5.7	Traffic Management Measures.....	19
5.8	Public Rights of Way	20
5.9	Noise Reduction and Air Quality.....	20
5.10	Site Security.....	20
5.11	Community Engagement.....	20
5.12	Monitoring	21
6	Construction Worker Traffic – Mitigation Measures	22
6.1	Working Hours	22
6.2	Vehicle Trip Reduction	22
6.3	Construction Worker Travel Plan	22
7	Abnormal Indivisible Loads (AILs).....	24

7.2	Forecast Movements	24
7.3	Management	25

Figures

Figure 1.1 – Scheme Overview and Highway Network Context	4
Figure 2.1 – Access Locations for Sites and Cable Corridor (North Area)	7
Figure 2.2 – Access Locations for Sites and Cable Corridor (Central Area)	7
Figure 2.3 – Access Locations for Sites and Cable Corridor (South Area Part 1)	8
Figure 2.4 – Access Locations for Sites and Cable Corridor (South Area Part 2)	8
Figure 2.5 – Access Locations for Sites and Cable Corridor (South Area Part 3)	9
Figure 2.6 – Indicative construction programme for Green Hill Solar Farm.....	12
Figure 4.1 – Construction HGV Routing- North Sites.....	16
Figure 4.2 – Construction HGV Routing- Central Sites	17
Figure 4.3 – Construction HGV Routing- Southern Sites.....	17

Tables

Table 3.1 – Solar Sites and BESS daily HGV movements	13
Table 3.2 – Solar Sites and BESS construction worker movements	14
Table 3.3 – Combined HGV and construction worker movements: Solar Sites and BESS	14
Table 3.4– Cable Route construction vehicle movements	14
Table 3.5– Total Scheme Daily Two-way Vehicle Movements.....	15
Table 7.1 - Summary of Abnormal Load movements for Green Hill Sites	25

1 Introduction

1.1 Outline

1.1.1 This Outline Construction Traffic Management Plan (OCTMP) has been prepared by KMC Transport Planning (KMC) on behalf of Green Hill Solar Farm Limited (the Applicant) in relation to an application for a Development Consent Order (DCO) for Green Hill Solar Farm (hereafter referred to as the Scheme).

1.1.2 The proposed development spans several local highway authorities:

- West Northamptonshire Council;
- North Northamptonshire Council;
- Milton Keynes City Council; and
- National Highways.

1.2 The Scheme

1.2.1 The Scheme will comprise the construction, operation, maintenance and decommissioning of a Solar Photovoltaic (PV) electricity generating facility and Battery Energy Storage System (BESS) with a total capacity exceeding 50 megawatts. The Scheme comprises nine land parcels (Sites). The Sites are connected by a Cable Route Corridor to each other and to the Point of Connection (POC) at Grendon National Grid Substation.

1.2.2 The Sites are in an area of countryside to the west and south of Wellingborough, and north, east and south east of Northampton as shown in **Figure 1.1** along with the Study Area.

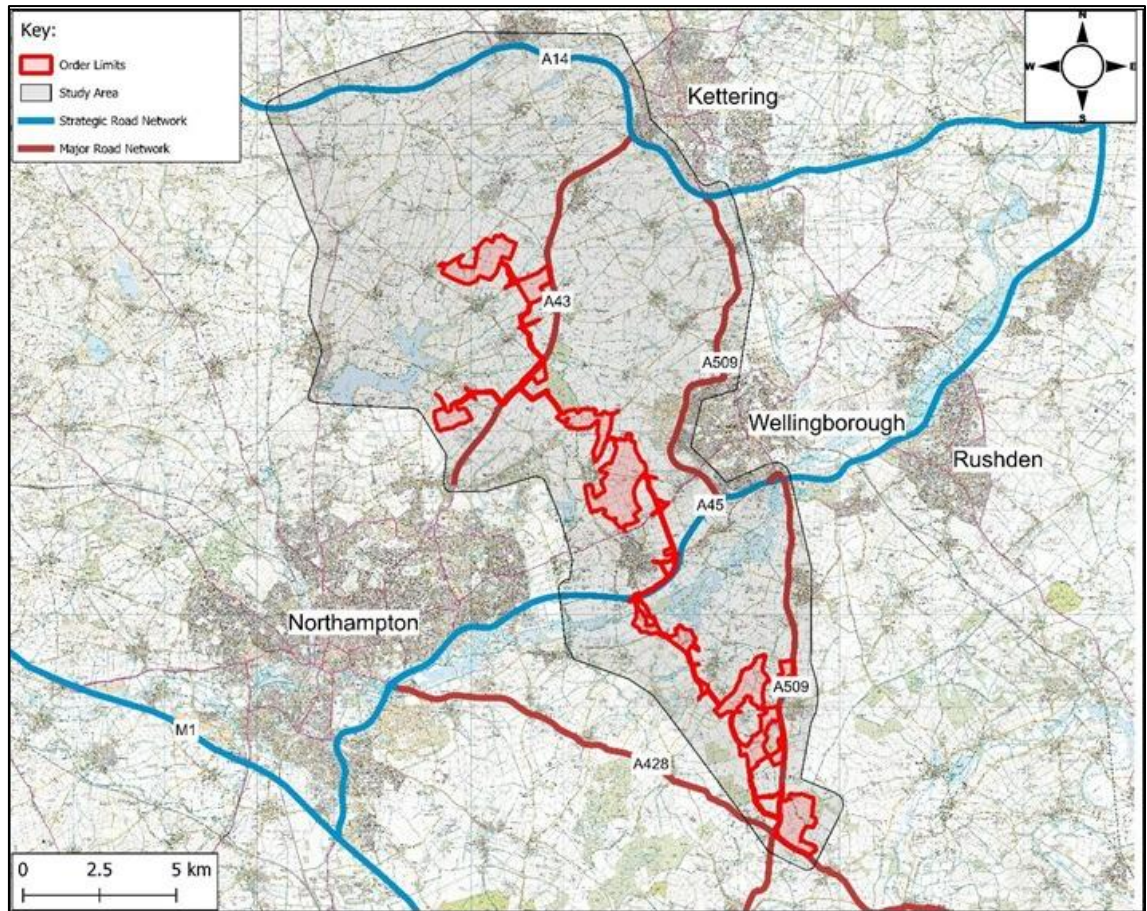


Figure 1.1 – Scheme Overview and Highway Network Context

1.3 Outline CTMP

- 1.3.1 This OCTMP provides a framework for the management of vehicle movements to and from the Site during the construction phase, to reduce, as far as practicable, impacts of the Scheme on the local highway network. It is a live document that will be updated prior to commencement of construction to reflect any amends or comments made during the DCO process, and to add detail once a contractor is appointed.
- 1.3.2 A Final CTMP will be prepared prior to commencement of construction for approval of the relevant highway authorities.
- 1.3.3 The OCTMP has the following objectives:
- Minimise the number of construction vehicles;
 - Ensure the safe movement of equipment, material and construction workers; and
 - Minimise the effects of construction traffic on the local community and other road users.

- 1.3.4 It will be the responsibility of the Applicant to ensure that the appointed contractor complies with all statutory regulations and guidelines in relation to construction and movement activities.
- 1.3.5 This OCTMP has been prepared following various stages of consultation, and should be read in conjunction with the Environmental Statement (ES) and the Transport Assessment (TA) also submitted as part of the DCO application.

2 Proposed Development

2.1 Outline

2.1.1 This section provides an overview of the Scheme and the construction programme.

2.2 Solar Arrays

2.2.1 The main element of the Scheme comprises nine Sites that will accommodate the solar arrays. These are referred to as:

- **Green Hill A** – Accessed via Access A-1: Broughton Lane
- **Green Hill A.2** – Accessed via Access A.2-1: Ketting Road
- **Green Hill B** – Accessed via Access B-1: Sywell Road
- **Green Hill C** – Accessed via Access C-1: Sywell Road/Glebe Road junction
- **Green Hill D** – Accessed via Accesses:
 - Access-D-1: Highfield Road adjacent to Sywell Road
 - Access-D-2: Highfield Road adjacent to the access to Highfield Happy Hounds
 - Access-D-3: Highfield Road, c.200m south of the access to Highfield Happy Hounds
 - Access-D-4: Highfield Road adjacent to Access-E-1
- **Green Hill E** – Accessed via Accesses:
 - Access-E-1: c.200m south of the access to Highfield Happy Hounds
 - Access-E-2: Mears Ashby Road
- **Green Hill BESS** – Accessed via Accesses:
 - Access-BESS-1: c.600m northwest of Grendon Substation access
 - Access-BESS-2: c.190m northwest of Grendon Substation access
 - Access-BESS-3: c.60m southeast of Grendon Substation access
 - Access-BESS-4: c.175m southeast of Grendon Substation access
- **Green Hill F** – Accessed via Accesses:
 - Access F-1: Off the A509, north of Bozeat.
 - Access F-2: Easton Lane/Private Access to Motorcycle Dealership junction
 - Access F-3: Off the A509 to the west of Bozeat.
- **Green Hill G** – Accessed off the A428, c.100m to the east of the junction with the A509.

2.2.2 These Sites and all accesses associated with the Scheme are shown in **Figures 2.1, 2.2, 2.3, 2.4, and 2.5.**

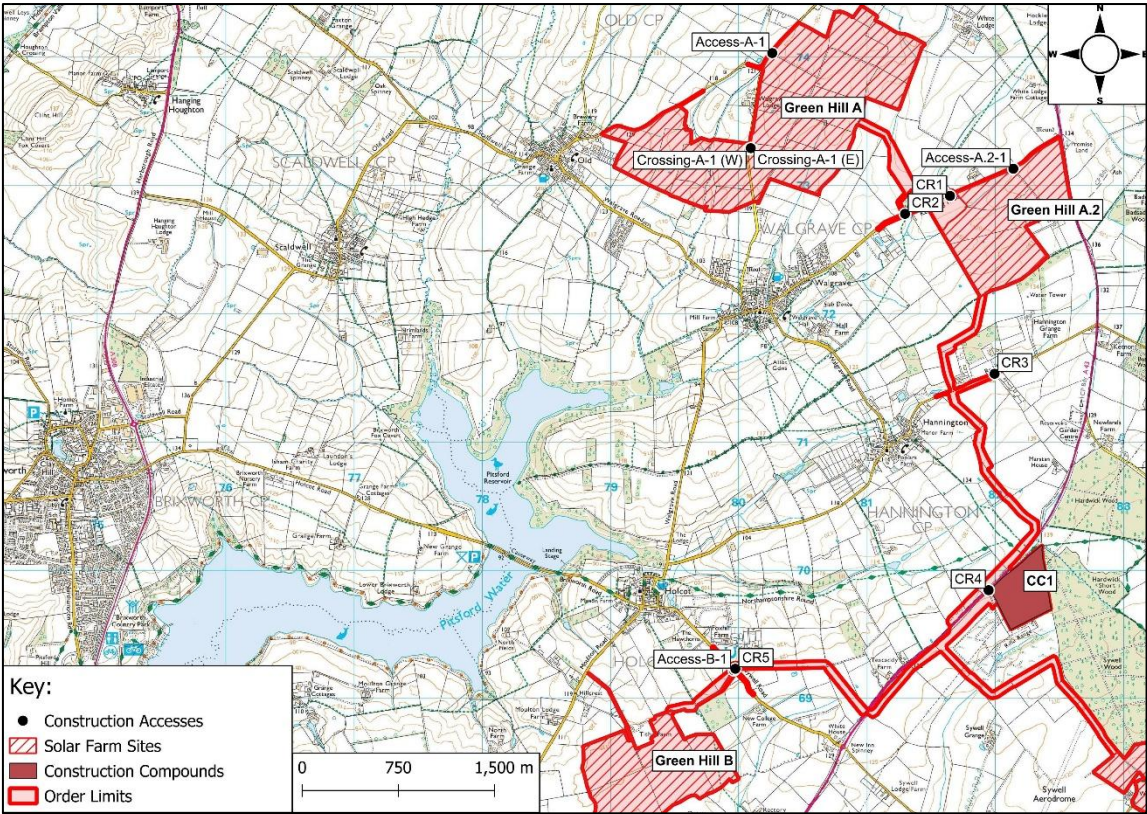


Figure 2.1 – Access Locations for Sites and Cable Corridor (North Area)

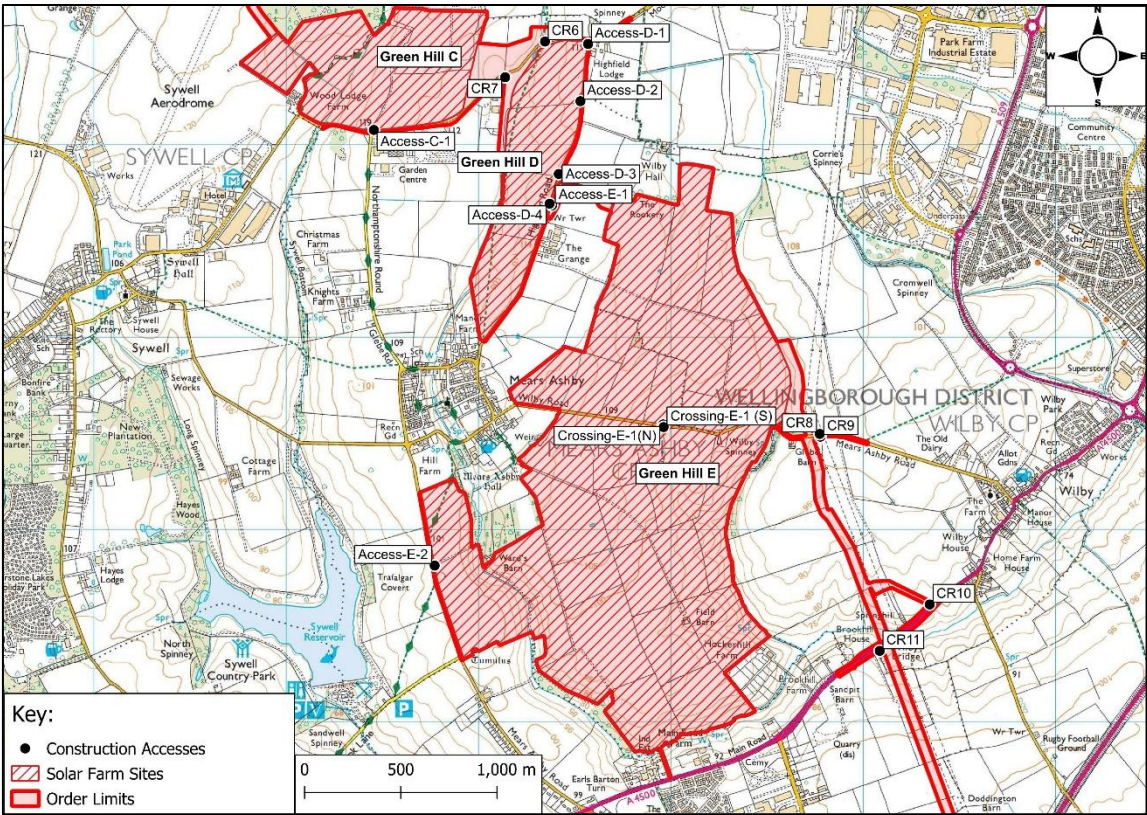


Figure 2.2 – Access Locations for Sites and Cable Corridor (Central Area)

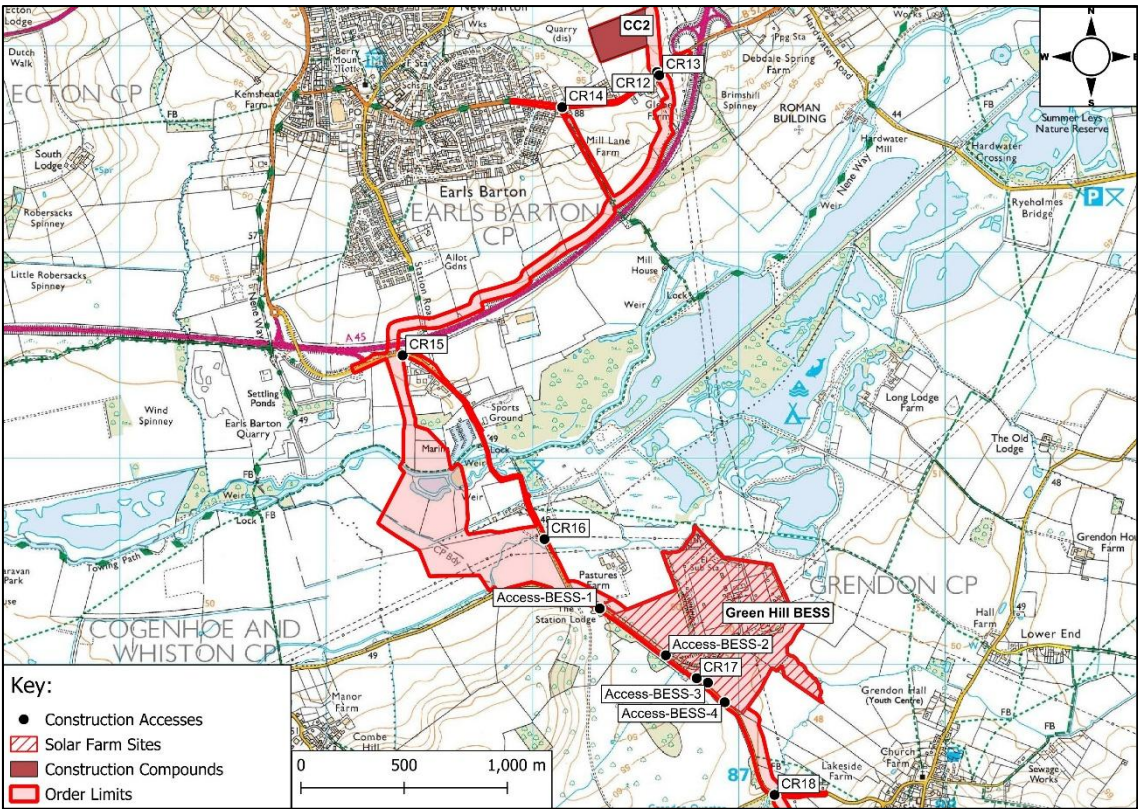


Figure 2.3 – Access Locations for Sites and Cable Corridor (South Area Part 1)

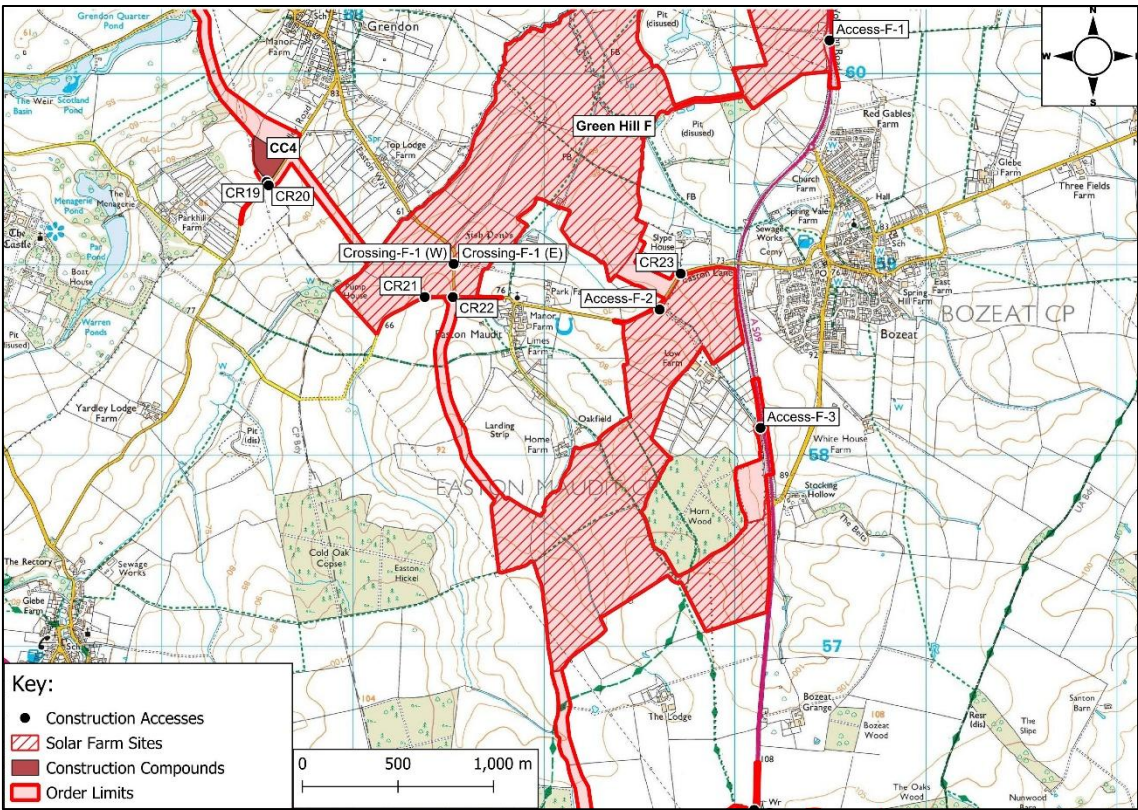


Figure 2.4 – Access Locations for Sites and Cable Corridor (South Area Part 2)

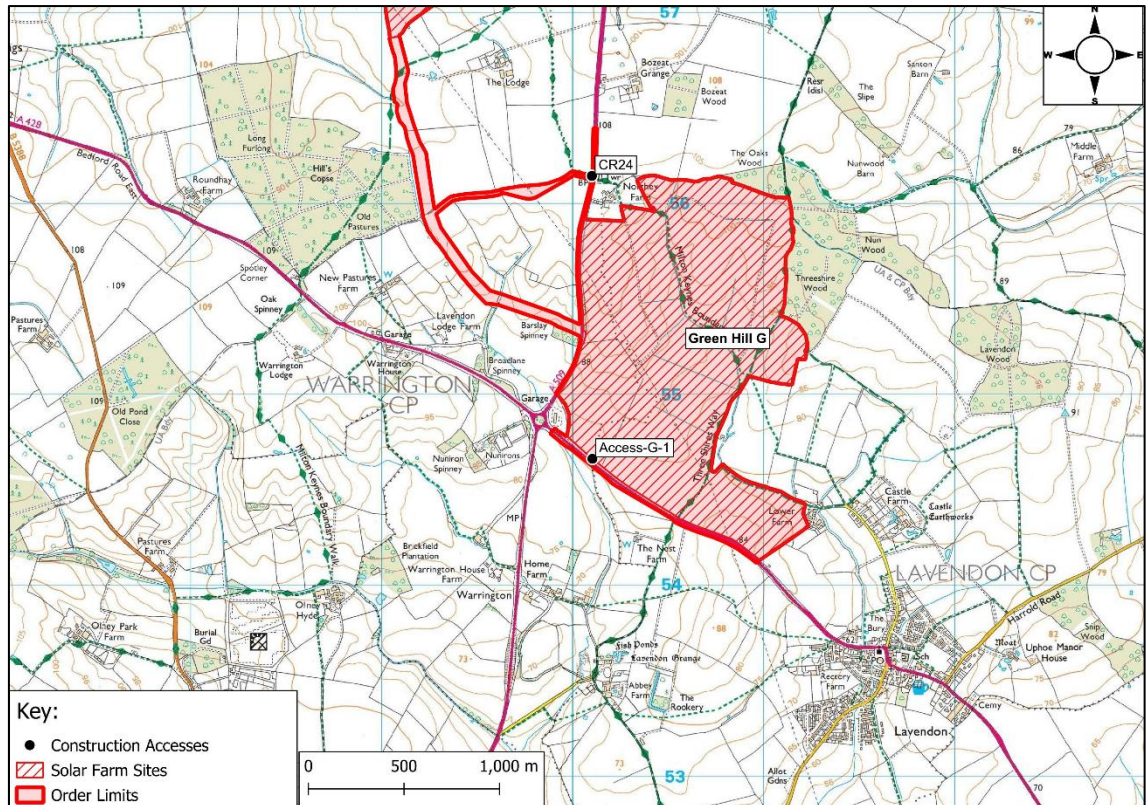


Figure 2.5 – Access Locations for Sites and Cable Corridor (South Area Part 3)

2.2.3 The key equipment within the Solar Array Works Areas are:

- The Solar Photovoltaic panels (Solar PV Panels) which convert sunlight/daylight into electrical current;
- Solar PV Mounting Structures will be metal frames, typically aluminium or steel. The metal frames are typically installed by driving the piles directly into the ground;
- A tracker system which involves attaching the Solar PV Panels to a motorized table that can move in relation to the sun. This allows for optimal power generation throughout the day and may be utilised across Sites;
- Conversion Units incorporate the inverters, transformers and associated equipment and are required to manage the electricity generated by the PV Panels; and
- Transformers are required to step up the voltage of the AC electricity generated by the inverters across the solar sites before it reaches the Site substation.

2.3 Energy Storage Facility

2.3.1 An Energy Storage Facility (also referred to as a Battery Energy Storage System (BESS)) is proposed. The preferred location for the BESS is at Green Hill BESS adjacent to Grendon National Grid Substation, however BESS may also or alternatively be located within Green Hill C.

2.3.2 The BESS is designed to provide peak generation and balancing services to the grid by allowing excess electricity generated either from the solar PV panels, or imported from the grid, to be stored in batteries and dispatched when required.

2.4 Substations

- 2.4.1 The Scheme includes two 400kV Substations. These substations are to be located within Green Hill BESS and Green Hill C. The Green Hill C 400kV Substation will be air insulated switchgear, whereas Green Hill BESS will either be air insulated switchgear or gas insulated switchgear.
- 2.4.2 The 400kV Substations would also step down the voltage from 400kV to 132kV and 33kV. This would allow for both electricity provided from the grid at 400kV and provided from the Sites to be stored within the BESS.
- 2.4.3 On Green Hill A, B, E, F and G, there will be the need for a 132kV Substation on each of the Sites.
- 2.4.4 There will be a requirement for 33kV Substations on Green Hill A.2 and D.

2.5 Grid Connection

- 2.5.1 The electricity generated and stored by the Scheme will be exported to the National Grid at the existing Grendon Substation. The Sites will be linked to Grendon Substation via underground cables within the Cable Route Corridor. The underground cables will also transfer electricity from the National Grid to the BESS.
- 2.5.2 The Cable Route Corridor will comprise underground electrical cables to connect the Sites to the Point of Connection (PoC) at Grendon Substation. The Cable Route Corridor runs for approximately 31km from Green Hill A at its most northern extent to Green Hill G at its southernmost point.
- 2.5.3 The Cable Route Corridor has a typical width of 50m, however the Cable Route Corridor incorporates a number of wider areas, for example to allow additional working area for trenchless techniques such as Horizontal Directional Drilling (HDD), enable flexibility around areas of environmental sensitivity and temporary construction compounds.
- 2.5.4 Twenty-four access points to the Cable Route are proposed (CR1-CR24). These are shown in **Figures 2.1, 2.2, 2.3, 2.4 and 2.5**.

2.6 Construction Compounds

- 2.6.1 Three Construction Compounds will be built to serve the Solar Array Sites and Cable Routes. These are proposed to accommodate the following elements:
- Material and equipment storage;
 - Construction vehicle parking;
 - Site office; and
 - Construction worker welfare facilities.

2.6.2 The Construction Compounds are proposed to be provided at the following locations:

- CC1: Off the A43 near Holcot;
- CC2: Adjacent to the A45/B573 Junction; and
- CC4: Located South of Grendon, accessed via an internal haul route accessed via Station Road.

2.6.3 The proposed locations of the Construction Compounds are shown on **Figures 2.1, 2.2, 2.3, 2.4 and 2.5**.

2.6.4 The provision of the Construction Compounds will ensure that there will be no parking by contractors, visitors or delivery vehicles on the local highway network and visitors will be advised of the parking arrangements in advance of travelling to the Site. The Site Manager will monitor that parking is taking place in the designated area on a regular basis.

2.7 Internal Haul Routes

2.7.1 The Scheme will include haul routes throughout the Solar Array Sites and along the Cable Corridor to allow for the movement of some construction vehicles through the proposed development off the public highway.

2.7.2 In order for construction vehicles to cross between the Solar Array Sites, crossings will be provided across various sections of public highway. These are shown connecting the Sites in **Figures 2.1, 2.2, 2.3, 2.4 and 2.5**.

2.8 General Works

2.8.1 Across the Scheme there will be a need to undertake general works associated with construction and development of individual Sites. These works include the following:

- The formation of temporary and permanent access tracks;
- Fencing, security and lighting;
- Landscaping and habitat management;
- Water management and drainage; and
- Construction laydown areas/compounds.

2.9 Programme

2.9.1 The Scheme currently has a grid connection date of 2029. It is anticipated that construction works will commence, at the earliest, in Q1 2027 and will run to 2029. The construction programme for the entire Scheme is anticipated to be 24 months with overlapping construction works on the different Scheme Sites.

2.9.2 **Figure 2.6** indicates the potential construction durations across the different parts of the Scheme, showing a series of overlapping stages.

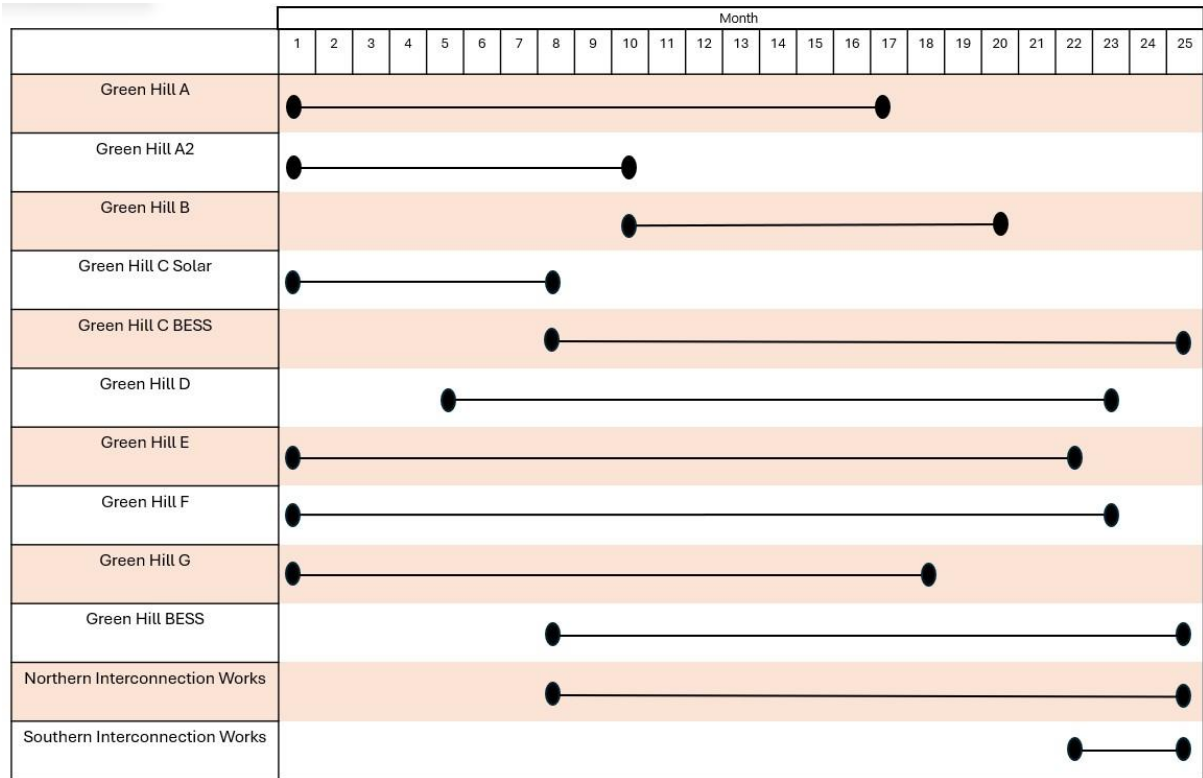


Figure 2.6 – Indicative construction programme for Green Hill Solar Farm

3 Construction Vehicle Trips

3.1 Trip Generation

- 3.1.1 A full breakdown of how construction vehicle trips have been estimated is provided in Section 5 of the Transport Assessment which accompanies this application. A summary is provided within this section of the OCTMP.
- 3.1.2 Deliveries of materials to individual Sites will be made principally by HGVs. This will vary between 16.5m long articulated vehicles and rigid vehicles 8-10m in length. There will be a small number of abnormal indivisible load (AIL) deliveries associated with the Conversion Units. AIL movements are summarised separately in Section 7.

3.2 Construction Phase

Solar Sites and BESS

- 3.2.1 The forecast of HGV movements is based upon forecasts that have been agreed through consented DCO Solar Schemes at Cottam and West Burton, which do not have any discernible or design differences to the Green Hill Scheme. Based on these consented DCOs, 'HGV movements per solar module' have been calculated and is considered an appropriate trip rate to forecast the HGV movements associated with each Green Hill Site.
- 3.2.2 It is expected that there will be a relatively flat profile of deliveries across the construction period for the Scheme and each individual Site. Notwithstanding this, a peak HGV activity has been identified through the indicative programme with the delivery of HGV modules.
- 3.2.3 **Table 3.1** shows the forecast average and peak daily HGV movements expected at the Solar Sites and BESS.

Table 3.1 – Solar Sites and BESS daily HGV movements

Vehicles/day	Green Hill A	Green Hill A.2	Green Hill B	Green Hill C / BESS	Green Hill D	Green Hill E	Green Hill F	Green Hill G	BESS
Average daily HGV deliveries	3	2	2	1	2	3	4	4	2
Peak daily HGV deliveries	8	9	9	5	9	9	9	9	4
Peak HGV movements (two-way)	15	18	18	10	18	18	17	19	8

- 3.2.4 The peak number of workers is expected to be 787 workers spread across the Scheme. To account for peak periods at the different Sites, the groupings of sites across the North, Central and South areas have been assessed separately where these represent different sections of the highway network, with peak workers in each area considered. Taking these individual areas into

account, 1,099 construction workers across the Scheme have been taken forward for assessment as a reasonable worst case.

- 3.2.5 **Table 3.2** shows the estimated construction worker movements expected at the Solar Sites and BESS.

Table 3.2 – Solar Sites and BESS construction worker movements

Vehicles/day	Green Hill A	Green Hill A.2	Green Hill B	Green Hill C / BESS	Green Hill D	Green Hill E	Green Hill F	Green Hill G	BESS
Total worker arrivals	68	27	27	33	8	75	76	62	36
Total worker two-way vehicle movements	136	54	54	20	16	150	152	124	56

- 3.2.6 **Table 3.3** shows the estimated combined Peak HGV and construction worker movements for the Solar Sites and BESS.

Table 3.3 – Combined HGV and construction worker movements: Solar Sites and BESS

Vehicles/day	Green Hill A	Green Hill A.2	Green Hill B	Green Hill C / BESS	Green Hill D	Green Hill E	Green Hill F	Green Hill G	BESS
Total vehicle arrivals	76	36	36	38	17	84	85	71	40
Total two-way vehicle movements	151	72	72	30	34	168	169	143	64

Cable Route construction vehicle movements

- 3.2.7 Based on input from construction experts, it is forecast that each compound will generate up to 11 HGV arrivals per day for the delivery of material and equipment with a further 5 LGV movements for this purpose. There will also be up to 24 construction workers per compound, arriving by car / van and shuttle bus where a lower occupancy rate of 12 workers has been assumed per shuttle. The forecast vehicle movements across a typical day for the construction of the cable connections across the Cable Route Corridor, are shown at **Table 3.4**.

Table 3.4– Cable Route construction vehicle movements

Vehicles/day	CC1	CC2	CC4
Total vehicle arrivals	25	25	25
Total two-way vehicle movements	50	50	50

Combined Solar Site, BESS, and Cable Route construction vehicle movements

- 3.2.8 The forecast two-way vehicle movements across the entire Scheme over a typical day are presented in **Table 3.5**.

Table 3.5– Total Scheme Daily Two-way Vehicle Movements

	North Sites				Central Sites				South Sites			
	Cars/LGVs/ shuttles		HGVs		Cars/LGVs/ shuttles		HGVs		Cars/LGVs/ shuttles		HGVs	
	Arrive	Depart	Arrive	Depart	Arrive	Depart	Arrive	Depart	Arrive	Depart	Arrive	Depart
Total	136	136	36	36	166	166	38	38	152	152	29	29

4 Construction Vehicle Routing

- 4.1.1 **Figures 4.1, 4.2 and 4.3** show the proposed HGV construction vehicle routes. These are chosen to provide routes which are the shortest distance between the various access points associated with the proposed development and the Strategic Road Network (A14 and A45), therefore minimising travel on less suitable roads.

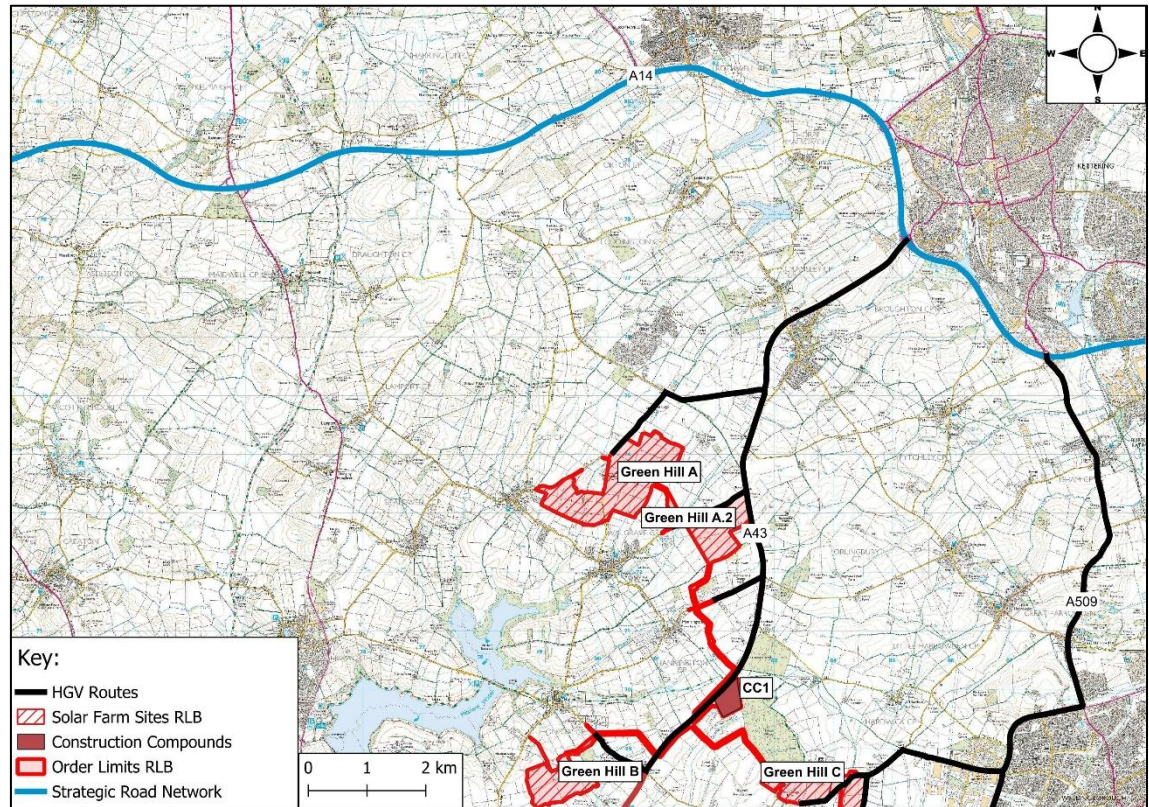


Figure 4.1 – Construction HGV Routing- North Sites

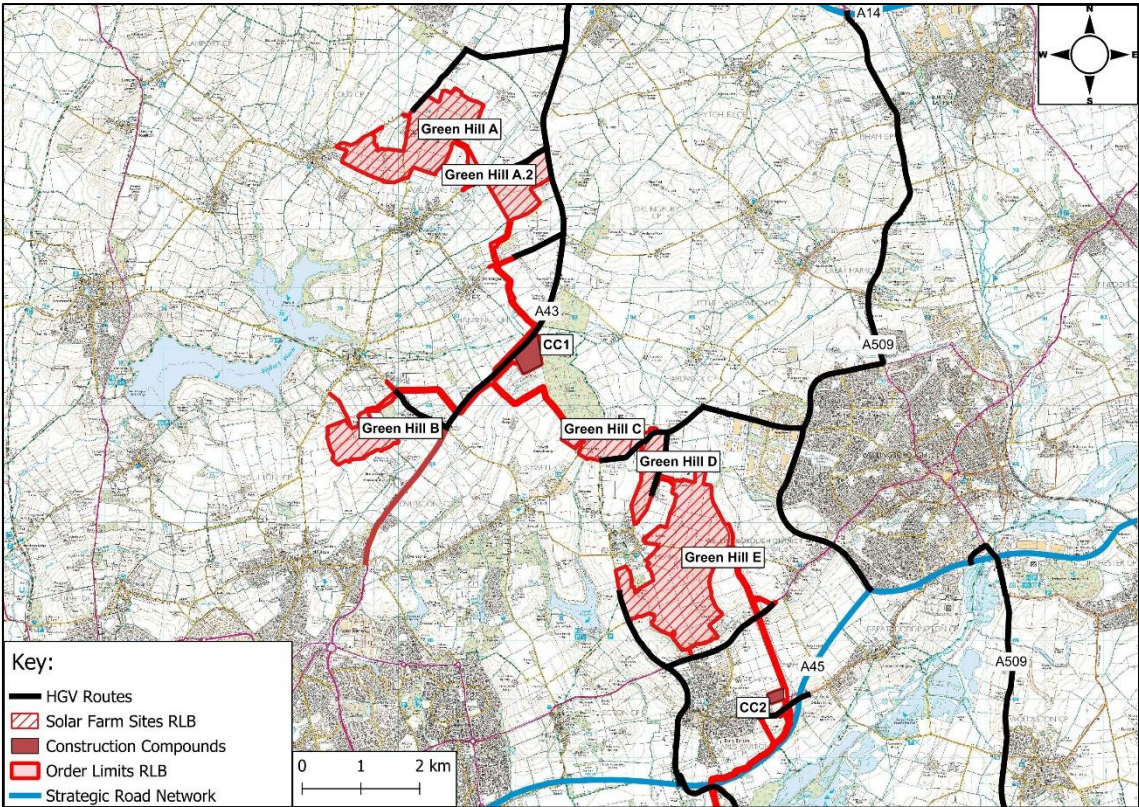


Figure 4.2 – Construction HGV Routing- Central Sites

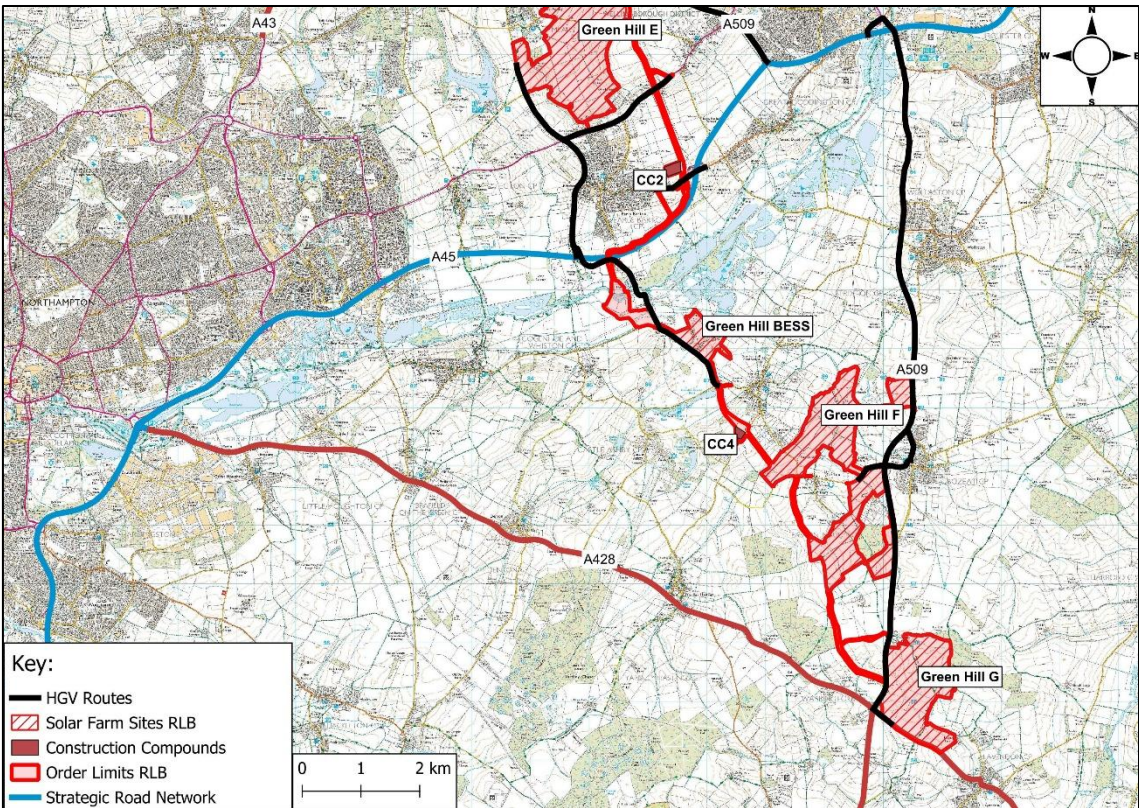


Figure 4.3 – Construction HGV Routing- Southern Sites

5 Construction Vehicle Traffic – Mitigation Measures

- 5.1.1 The following measures will be implemented during the construction phase to mitigate impacts owing to construction traffic.

5.2 Road Condition Survey

- 5.2.1 Road Condition Surveys will be carried out on minor roads proposed for construction access prior to commencement of construction. The extent of the surveys will be agreed with the local highway authority in advance.
- 5.2.2 Once construction is complete, a further Road Condition Survey will be undertaken in order to identify any additional defects that can reasonably be attributable to construction activities associated with the Scheme. Any identified highways defects directly attributable to construction activities associated with the Scheme will be corrected to the satisfaction of the local highway authority (or individual owner if a private road).

5.3 Access Points

- 5.3.1 Existing accesses to Sites will be used where practicable, however any access that is temporarily created for the construction period will be restored to its original condition post-construction or retained subject to agreement. Where existing accesses are utilised, these will be widened and formalised where required. Visibility splays will be kept clear throughout the construction period.
- 5.3.2 The use of temporary traffic management to construct, and where required, manage construction accesses will be considered on a site-by-site basis and agreed with the highway authorities.
- 5.3.3 All construction vehicles will access and egress the Site in a forward gear.

5.4 Parking

- 5.4.1 Signs informing contractors and visitors that parking is not permitted on-street in the vicinity of the Site or on the Site access road will be erected. Contractors and visitors will be advised that parking facilities will be provided onsite in advance of visiting.

5.5 Management of Deliveries

- 5.5.1 Construction vehicles will avoid travel during the morning and evening network peak hours, where possible. Therefore, deliveries will be arranged to occur after 0930 and before 1630.
- 5.5.2 In order to minimise instances of HGVs passing each other in opposite directions on narrow/inappropriate roads, all deliveries will be required to use a booking system. Drivers will be instructed to not leave their depot, or stop in an appropriate layby or other appropriate stopping place, and report if they are likely to miss their slot.

Procedure for Arrival to Site

- Drivers will be allocated a slot arrival time and instructed which access/route to use;
- Where required, when the vehicle is due, the banksmen will be notified and will position at the relevant access;
- The driver will then be notified to travel to the Site via the agreed route;
- All operatives will communicate with each other, as necessary; and
- Where required, banksmen will assist HGVs to manoeuvre from the public highway into the Site accesses.

Procedure for Leaving the Site

- When vehicles are ready to depart, the Site Manager will be notified. If required, they will then mobilise the banksmen at the relevant Site access;
- Drivers will be advised when the banksmen are in place; and
- Banksmen will guide the vehicles safely on to the public highway.

5.6 Wheel Washing

- 5.6.1 Wheel washing facilities will be provided at each access. This will be located at the egress of each Site. A visual inspection of vehicles will be undertaken before they depart the Site, to ensure that they are not carrying debris onto the highway. Notwithstanding wheel washing measures, if required, a road sweeper will be provided for the area surrounding access to alleviate any residual debris generated during the construction phase.

5.7 Traffic Management Measures

Route Signage

- 5.7.1 Temporary road signage will be installed along the construction traffic routes to inform all road users of the construction works and to direct construction traffic to and from the various construction accesses.
- 5.7.2 Signage will comply with Chapter 8 of the Traffic Signs Manual. The following will be considered when locating signage:
- The position of the sign in relation to the highway to ensure visibility splays are maintained;
 - Possible distraction to drivers; and
 - The proximity to junctions and roundabouts.
- 5.7.3 Details of the form and proposed locations of any signs (or signals) to be placed on a public highway will be pursuant to relevant Articles of the DCO and will be submitted to the traffic authority for approval in advance of being placed.
- 5.7.4 All signage on the designated route will be inspected, to ensure they are kept in a well-maintained condition and located in safe and appropriate locations.

- 5.7.5 Traffic management for abnormal load movements will be agreed with the local highway authority and police prior to the abnormal load movements taking place.

5.8 Public Rights of Way

- 5.8.1 A Public Rights of Way and Permissive Paths Management Plan will be implemented during the construction phase of the Scheme. An Outline Public Rights of Way and Permissive Paths Management Plan **[EN010170/APP/GH7.10]** is included as part of the application. As part of this plan, the following measures will be implemented:
- Appropriate signage will be installed along the PRow to make PRow users aware of the construction activity. This will include information on construction times and contact details for a public liaison officer;
 - Drivers will stop and give-way to any PRow user (in particular for equestrians);
 - Where relevant, widened access tracks to ensure vehicles can pass PRow users safely;
 - Banksmen to be positioned where relevant along a PRow impacted by construction traffic, to hold vehicles if a PRow user is present and advise PRow users of the potential for construction vehicles;
 - Speeds to be limited to 10mph near PRow;
 - The PRow will be kept clear of construction vehicles and apparatus outside of permitted construction hours so far as is practicable to do so; and
 - Any damage to the surface of the footpath/bridleway directly attributable to the Scheme will be repaired as soon as practicable.

5.9 Noise Reduction and Air Quality

- 5.9.1 When on Site and when not in use, engines will be required to be switched off. Vehicles carrying material off-Site will be sheeted / covered to prevent the spread of dust and debris. In dry conditions, areas near to the Site access will be sprayed with water to prevent the spread of dust and debris.

5.10 Site Security

- 5.10.1 All construction compounds will be secured via fencing. CCTV will be installed within construction compounds. All access tracks will be secured by gates, which will be set back from the public highway. Where existing access tracks are used that also provide access to residential properties, appropriate security measures will be put in place in consultation with the relevant property owner.

5.11 Community Engagement

- 5.11.1 The details of the Construction Site Manager will be provided to the local highway authorities in advance of any work being carried out and will also be advertised on a Site information board.
- 5.11.2 Residents and businesses in the vicinity of the Sites will be provided with contact details of the Site Manager to report any identified issue.

5.12 Monitoring

- 5.12.1 Any unforeseen issues that arise in relation to construction vehicle movement will be logged by the Site Manager. If necessary, the issues will be discussed with the local highway authority so that they can be resolved as appropriate.

6 Construction Worker Traffic – Mitigation Measures

6.1 Working Hours

- 6.1.1 Construction activities will be carried out Monday to Friday 0700-1800 and between 0800 and 1330 on Saturdays, which constitute the core working hours (excluding any start-up and shut down works). No construction activities will take place on Public Holidays. However, some activities may be required outside of these times (such as the arrival and departures of workers, the delivery of abnormal loads, night-time working for cable construction works in public highways or HDD activities).
- 6.1.2 Construction deliveries by HGV will be scheduled to arrive between 0930-1630. They will be coordinated to avoid construction vehicle movements during the traditional AM peak hour (0800-0900) and PM peak hour (1700-1800). In addition, construction worker shift patterns will be coordinated to avoid travel during the network peak hours of 0800-0900 and 1700-1800.

6.2 Vehicle Trip Reduction

- 6.2.1 Measures are proposed to minimise the number of construction workers travelling by car or van, including the provision of shuttle buses to transport construction workers to and from each Site and nearby conurbations.
- 6.2.2 Construction workers who drive to any Site will be encouraged to car share where possible and this tends to occur on major construction projects without intervention. An assumption of 1.5 construction workers per car / van has been made based on the national car / van occupancy average.

6.3 Construction Worker Travel Plan

- 6.3.1 A Construction Worker Travel Plan (CWTP) will be drafted and implemented, to encourage construction workers to travel to the Site via sustainable travel, where possible.
- 6.3.2 The following key aims and objectives are identified at this stage:
- To reduce single occupancy car travel by construction workers;
 - To increase car sharing and shuttle bus use; and
 - To increase knowledge of the public transport and/or Active Travel opportunities available to construction workers (where applicable/viable).
- 6.3.3 A Travel Plan Coordinator (TPC) will be appointed to oversee the implementation of the CWTP whose responsibilities will comprise, but not necessarily be limited to, the following:
- Implement measures set out in the Travel Plan;
 - Raise awareness and promote the Travel Plan; and
 - Provide advice to construction workers regarding sustainable travel options.

6.3.4 Suggested measures could include:

- Establish a car share scheme for construction workers;
- Arrange on-site facilities for workers, such as storage lockers for equipment;
- Provide a map with identified cycling/walking/bus routes to a Site; and
- Provide emergency cycle repair kit at the compounds.

6.3.5 Uptake of Travel Plan measures will be monitored by the TPC. Additional measures will be provided if necessary/as appropriate.

7 Abnormal Indivisible Loads (AILs)

- 7.1.1 There will be a number of abnormal load movements associated with the construction of the Scheme.
- 7.1.2 An AIL vehicle is defined as having one or more of the following characteristics on any part of the vehicle combination:
- a gross vehicle weight of more than 44,000kg;
 - an axle load of more than 10,000kg for a single non-driving axle and 11,500kg for a single driving axle;
 - a width of more than 2.9 metres;
 - a rigid length of more than 18.65 metres;
 - the vehicle load projects over the front or rear of the vehicle by more than 3.05m or more than 305mm over the side of the vehicle; or
 - is a Part 2 vehicle combination (N3 vehicle and trailer) of greater than 25.9m total length.
- 7.1.3 Road based AILs fall into three principal classifications:
- Special order for the heaviest, widest or longest loads. Any AIL greater than 150 tonnes gross vehicle weight or over 6.1m wide or over 30m long is classified as a Special Order load;
 - Special type General Order (STGO) for loads not in the Special Order category, but which are over the weight limit for the number of axles, wider than 4.3m or longer than 27.5 m. STGO are sub-divided into three categories (Cat 1, 2 or 3) depending on the gross weight and axle weight. A further STGO category is used for loads over 5m wide, which are referred to as VR1 loads; and
 - Construction and Use (C&U) for loads that are not in the STGO category but do not qualify as an HGV movement due to their size (width, length or overhang).
- 7.1.4 A report has been prepared to consider the routes that Abnormal Load movements will take and is appended to the Transport Assessment.

7.2 Forecast Movements

Green Hill Sites

- 7.2.1 Substations will be required within Sites across the Scheme. The substations will consist of electrical infrastructure such as the transformers, switchgear and metering equipment required to facilitate the export of electricity from each respective area.
- 7.2.2 The Abnormal Load movements associated with the substations and the Sites they relate to are summarised in **Table 7.1**.

Table 7.1 - Summary of Abnormal Load movements for Green Hill Sites

Green Hill Site	Substation voltage	Transformer sizes	Number	Access
Green Hill A	132kV	120/140MVA 132/33 kV – L: 7.6m, W: 2.7m, H: 4.5m – Weight: 95 tonnes	2	Broughton Road
Green Hill B	132kV	60/90MVA 132/33kV L:7m, W:2.6m, H:4m – Weight: 65 tonnes	1	Sywell Road
Green Hill C	400kV	150MVA 400/33 kV – L: 8m, W: 4m, H: 4.9m – Weight: 155 tonnes	4	Sywell Road
		240MVA 400/132kV – L: 10m, W: 3.8m, H: 4.7m – Weight: 183 tonnes	1	
Green Hill E	132kV	120/140MVA 132/33 kV – L: 7.6m, W: 2.7m, H: 4.5m – Weight: 95 tonnes	2	Highfield Road
Green Hill F	132kV	120/140MVA 132/33 kV – L: 7.6m, W: 2.7m, H: 4.5m – Weight: 95 tonnes	2	Easton Lane
Green Hill G	132kV	120/140MVA 132/33 kV – L: 7.6m, W: 2.7m, H: 4.5m – Weight: 95 tonnes	2	A428
Green Hill BESS	400kV	4 x 150MVA 400/33 kV – L: 8m, W: 4m, H: 4.9m – Weight: 155 tonnes	4	Station Road
		1 x 240MVA 400/33kV - L: 10m, W: 3.8m, H:4.7m Weight: 183 tonnes	1	

7.2.3 The information presented in **Table 7.1** suggests that across the nine Green Hill Sites and at varying times across the two-year construction programme, a total of 19 Abnormal Load movements will be necessary.

Cable Route Corridor

7.2.4 30 tonne cable drums will be required to deliver the connection between the Sites to Grendon National Grid Substation. The drums will be delivered on a Cable Reel Trailer and this vehicle, together with its material is classified as an abnormal load. The vehicle is smaller than those required to deliver the transformers at around 26m in length. Multiple deliveries will be required across the Cable Route Corridor.

7.2.5 The Cable Reel Trailer and vehicle will get as close to the relevant access location as possible, or it will enter the corridor or compound. From here, the cable drum can be unloaded and towed along the haulage road to the appropriate location for installation.

7.3 Management

7.3.1 Application for notification of ALL deliveries must be made by transport (haulage) operators, preferably through the Electronic Service Delivery for Abnormal Loads (ESDAL2) system. If the ESDAL2 system is not used, application for ALL movement must be submitted in adequate time to allow consultation, planning and further notification.