



Great North Road Solar and Biodiversity Park

Environmental Statement

Volume 4 – Technical Appendices

Technical Appendix A5.2 – Outline Construction Traffic Management Plan

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A5.2.1 INTRODUCTION

- 1 Elements Green Trent Ltd (“the Applicant”) is bringing forward a Development Consent Order (DCO) application for the proposed development of the Great North Road (GNR) Solar and Biodiversity Park (“the Development”).
- 2 The Development is a proposed solar photovoltaic (PV) electricity generating facility which lies within the district of Newark and Sherwood and the county of Nottinghamshire.
- 3 This document is the outline Construction Traffic Management Plan (outline CTMP), which has been prepared by SYSTRA Ltd on behalf of the Applicant.

A5.2.1.1 THE DEVELOPMENT

- 4 The Development would be located to the northwest of Newark, in the Newark and Sherwood district of Nottinghamshire, East Midlands. The Development would be within an area bound by the Order Limits. The Order Limits are to the west of the A1, north of the A617, east of Eakring, and south of Egmanton, to the north and northwest of Staythorpe.
- 5 The Development is described by ES Chapter 5, Development Description, [EN010162/APP/6.2.5], and briefly summarised here. The Development essentially consists of discrete land parcels proposed to be occupied by solar PV panels and associated infrastructure (Work no. 1), connected by cable route areas (Work no. 2). Up to 4 intermediate substations (Work no. 4) will be spaced around the solar areas, and a Battery Energy Storage System (BESS; Work no. 5a) and 400 KV Compound (Work no. 5b) will collate the electrical energy and step up the voltage before cabling it to the National Grid Staythorpe Substation (Work no. 6), possibly via the Consented Staythorpe BESS (Work no. 7). Road works (Work no. 8; access) will be undertaken, principally to create passing places and create or upgrade access points. Other areas within the Order Limits are identified for mitigation/enhancement (Work no. 3). The Work Areas are shown on ES Figure 5.1 [EN010162/APP/6.3.5.1] and a summary of mitigation/enhancement measures is shown on ES Figure 5.2 [EN010162/APP/6.3.5.2].

A5.2.1.2 PURPOSE

- 6 This outline CTMP (oCTMP) provides a framework for the management of construction vehicle movements to and from the Development within the Study Area set out in ES Chapter 14, Traffic and Transport [EN010162/APP/6.2.14], to ensure that the construction phase can be undertaken in a safe and efficient manner and that disruption to the local highway network is managed and minimised.
- 7 This is an document that will be updated prior to construction to reflect any considerations made during the DCO process, and to add detail that arises from the post-determination procurement and the appointment of a contractor.
- 8 A Detailed CTMP, which accords with this oCTMP, will be developed based on the detailed design. It will then be submitted to Nottinghamshire County

Council, in consultation with National Highways prior to construction commencing. The provision of a Detailed CTMP is secured by DCO Requirement.

- 9 The oCTMP has the following objectives:
 - Minimise the number of HGVs and other vehicles on the local road network that are associated with the construction of the Development;
 - Ensure the safe movement of equipment, material and construction workers;
 - Minimise the effects of construction traffic on the local community;
 - Set out measures to be adhered to by all associated with the construction of the Development; and
 - Ensure the continued monitoring, review and subsequent improvement of the CTMP and mitigation measures.
- 10 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.
- 11 This oCTMP should be read in conjunction with ES Chapter 14, Traffic and Transport [EN010162/APP/6.2.14] and Technical Appendices TA A14.1: Transport Statement [EN010162/APP/6.4.14.1] and TA A14.2: Outline Travel Plan [EN010162/APP/6.4.14.2].

A5.2.2 CONSTRUCTION WORKS

- 12 This section provides an overview of the proposed construction works associated with the Development and the construction programme.

A5.2.2.1 CONSTRUCTION ACTIVITIES

- 13 Construction activities are provided in detail in ES Chapter 5, Development Description [EN010162/APP/6.2.5]. The construction activities undertaken at the construction phase of the Development will include preparation of the land within the Order Limits and construction of the Development.
- 14 Preparation of the land within the Order Limits will include activities such as the delivery of construction materials, plant and equipment, and the erecting of fencing. Required access points will be constructed and temporary compounds will also be created, along with establishing the internal tracks (both upgrading existing and new).
- 15 Construction of the Development will include the delivery of components, construction of the substation compound and the erection and mounting of the PV solar modules, along with the installation of cables, etc. Vegetation management works will also be undertaken.

A5.2.2.1.1 Construction Compounds

- 16 Construction compounds will be set up. These will accommodate storage, parking, offices and welfare facilities. The primary aim of the on-site infrastructure is to ensure that all requirements are dealt with internally to the site to limit any potential impacts on the external highway network.
- 17 Sufficient parking will be provided within each construction compound.

A5.2.2.1.2 Internal Routing

- 18 Internal construction haul roads will be used to facilitate movement between fields and minimise traffic impact on the local road network. These internal construction haul roads will link from the site access locations outlined in Section A5.2.3. The layout of the internal haul roads will be defined by the contractor to meet construction needs and will likely take the form of heavy duty ground protection mats.
- 19 The Development will include internal access roads / tracks, allowing for the movement of construction and maintenance vehicles when the Development is operational. The internal access roads will be completed during the initial stages of construction.
- 20 Appropriate turning areas will be provided within the compounds and in the vicinity of the internal access road to ensure that all vehicles access and egress each site in a forward gear.
- 21 Wheel cleaning facilities will be provided at the end of each access road, ahead of the egress onto the local highway network to reduce the instances of mud and debris from being deposited onto the road network. A road sweeper will also be provided for surrounding local roads along the designated route to alleviate any residual debris generated during the construction phase, as required. Further construction control measures are included in Technical Appendix TA A5.3, Construction Environmental Management Plan [EN010162/APP/6.4.5.3].

A5.2.2.2 CONSTRUCTION PROGRAMME

- 22 The construction of the Development is anticipated to take approximately 24 months and is shown in Table A5.2.1. The five phases presented in Table A5.2.1 are spatial phases but not necessarily temporal, with phases 1 and 3 being concurrent and 2, 4 and 5 being concurrent. This is equivalent, therefore, to two temporal phases with two or three construction teams operating concurrently.

Table A5.2.1. Indicative Construction Programme

Construction Activity	Month																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Phase One	Site access points																								
	Roads and tracks																								
	Construction compounds																								
	Fencing and CCTV																								
	Solar PV poles, modules, inverters and transformers																								
	Cabling																								
	Intermediate substation																								
	BESS/400 kV compound																								
	Connection to the transmission network at the existing National Grid Staythorpe Substation																								
	Mitigation/enhancement planting																								
Phase Two	Site access points																								
	Roads and tracks																								
	Construction compounds																								
	Fencing and CCTV																								
	Solar PV poles, modules, inverters and transformers																								
	Cabling																								
	Intermediate substation																								
Phase Three	Mitigation/enhancement planting																								
	Site access points																								
	Roads and tracks																								
	Construction compounds																								
	Fencing and CCTV																								
	Solar PV poles, modules, inverters and transformers																								
	Cabling																								
Phase Four	Intermediate substation																								
	Mitigation/enhancement planting																								
	Site access points																								
	Roads and tracks																								
	Construction compounds																								
	Fencing and CCTV																								
	Solar PV poles, modules, inverters and transformers																								
Phase Five	Cabling																								
	Intermediate substation																								
Phase Five	Mitigation/enhancement planting																								
	Battery installation																								

A5.2.3 SITE ACCESS ARRANGEMENTS

- 23 The majority of materials will be delivered to the compounds from the local road network before being unloaded, stored and transported within the Order Limits.
- 24 This section summarises the accesses that will be used during the construction phase of the Development. An overview of the site access locations can be seen in Figure A5.2.1 presenting the location of the existing (to be upgraded) and new accesses proposed. Access drawings are included within Appendix D of the Transport Assessment [EN010162/APP/6.4.14.1]. These will all be subject to a Road Safety Audit process before construction.
- 25 The site accesses have been separated into three categories, these being:
 - Primary Access – these accesses form the main access into the site from the public highway. They will typically serve a site compound area. They have been designed to accommodate the turning movements of all sizes of vehicle, including HGV, and will operate under free-flow conditions;
 - Secondary Access – the function of these accesses is to supplement the primary access and will typically facilitate cross-over movements of the public highway between land parcels of solar development on either side. Traffic egress movements out of these locations will operate under the supervision of a banksman. They have typically been designed to accommodate the turning movements of Cars and LGVs and for HGVs only cross-over movements; and
 - Abnormal Indivisible Load (AIL) Access – in addition to their function of performing as a primary access, an over-run provision is included to accommodate the turning movement of the AIL vehicle transporting the cable drum to site. All AIL movements will be undertaken under appropriate supervision measures.
- 26 A total of 19 primary access locations are proposed, of which 12 are existing access locations, many of which will require upgrading to ensure they have appropriate visibility, geometry and surfacing, and these are identified in Table A5.2.2 and Table A5.2.3. There are 7 new access locations proposed to operate as a primary access, which have been located to best suit the Development needs (including serving the internal routing of HGVs), visibility and minimise environmental / ecological impact, i.e., reduce the need to remove hedgerow, trees and general vegetation.
- 27 A total of 24 secondary access locations are proposed, of which 13 are existing field access locations, and 11 new accesses are to be created. The secondary access locations are typically paired directly opposite (or as close to opposite, as possible) each other or paired opposite a primary access.
- 28 All access locations will be retained for continued use during the operational and decommissioning phase.
- 29 A summary of each of the primary and secondary accesses is presented in Table A5.2.2 and Table A5.2.3 respectively, which sets out a brief rationale for their location and whether they are existing/upgraded, or new.

Table A5.2.2: Primary Access Locations

Access ID	Location	Description	AIL Access	OS Co-ordinates
PA1	A617 – 100 m east of Main Road junction	An existing hard surfaced field access to be upgraded and used to access BESS site.	Yes	E 475468 N 355278
PA2	Caunton Road – approx. mid-length of road	An existing hard surfaced site access of the public road onto private access and then into field via new access to the south.	No	E 473475 N 358082
PA3	Caunton Road – approx. mid-length of road	A new site access to be formed at location of gap in hedgerow to gain access to land to the west.	Yes	E 473506 N 358220
PA4	Maplebeck Road – 2 km west of A616 junction	An existing hard surfaced field access to be upgraded to gain access to land to the south.	Yes	E 472107 N 360342
PA5	Newark Road – 590 m east of Sandy Lane Public Footpath	A new site access to be formed to gain access land to the south.	Yes	E 468665 N 362284
PA6	Newark Road – 720 m east of Sandy Lane Public Footpath	A new site access to be formed to gain access to land to the south.	No	E 468338 N 362327
PA7	A616 – 1.08 km south-east of Kersall Road	An existing hard surfaced field access to be upgraded to gain access to land to the west.	Yes	E 472495 N 361941
PA8	A616 – 1.03 km south-east of Kersall Road	An existing hard surfaced field access to be upgraded to gain access to land to the east.	No	E 472492 N 472492
PA9	Kersall Road - 240 m north-east of A616 junction	An existing hard surfaced field access to be upgraded to gain access to land to the south.	No	E 472113 N 362973

Access ID	Location	Description	AIL Access	OS Co-ordinates
PA10	Kersall Road - 375 m south of Ossington Road junction	An existing soft standing field access to be upgraded to gain access to land to the west.	Yes	E 472504 N 364182
PA11	Ossington Road - 500 m north of Main Street junction	A new site access to be formed across grassed soft verge to gain access to land to the west.	No	E 475563 N 365613
PA12	Moorhouse Road – 150 m south of Hagg Lane.	An existing hard surfaced field access to be upgraded to gain access to land to the east.	No	E 475159 N 367694
PA13	Ossington Lane – 250 m west of Brimblebeck Lane.	An existing field access to be upgraded to gain access to land to the west and onwards.	No	E 477894 N 365941
PA14	Ossington Road – 1.95 km west of Carlton Lane	A new site access to be formed to gain access to land to the north.	No	E 477232 N 364700
PA15	Ossington Road – 1.4 km west of Carlton Lane	An existing hard surfaced access track to be upgraded to gain access to land to the south	Yes	E 477763 N 364450
PA16	Ossington Road – 1.35 km west of Carlton Lane	A new site access to be formed to gain access to land to the north.	No	E 477764 N 477764
PA17	Carlton Lane – 300 m south of Ossington Road junction.	A new site access to be formed to gain access to land to the west.	No	E 479094 N 363948
PA18	Staythorpe Road – 395 m east of Pingley Lane	An existing hard surfaced access to be used in its current form to gain access to the cable route to the north.	Yes	E 475774 N 354043
PA19	Staythorpe Road – 190 m east of Pingley Lane	An existing field access to be used with localised removal or hedgerow.	No	E 475584 N 353966

Table A5.2.3: Secondary Access Locations (not for use by HGVs to turn onto or off the public highway)

Access ID	Location	Description	OS Co-ordinates
SA1	Private drive to Muskham Woodhouse Farm	New access to be formed on either side of private drive.	E 475469 N 357533
SA2 & SA3	Approx.. 1 km northwest of Broadgate Lane junction	An existing field access to the north to be upgraded and a new access to the south.	E 474221 N 357184
SA4 & SA5	Approx. 680 m south of The Hollows, Maplebeck	A pair of existing field accesses to be used.	E 470678 N 360235
SA6 & SA7	Private drive to Becks Farm	New accesses to be formed on either side of private drive.	E 470398 N 361040
SA8	Newark Road – 720 m east of Sandy Lane Public Footpath	A new access to be formed to gain access land to the north.	E 468671 N 362291
SA9	Newark Road – 590 m east of Sandy Lane Public Footpath	A new access to be formed to gain access to land to the north.	E 468339 N 362337
SA10 & SA11	Norwell Woodhouse – 330 m north of A616 junction	A pair of existing field access to be upgraded.	E 472805 N 362031
SA12	Kersall Road - 240 m north-east of A616 junction	A new access to be formed to gain access to land to the north.	E 472100 N 362984
SA13 & SA14	Kersall Road – 120 m south of Norwell Woodhouse junction	A new access to be formed to north and an existing field access to be upgraded.	E 472506 N 363852
SA15 & SA16	Kersall Road - 275 m south of Ossington Road junction	New accesses to be formed on either side of the road.	E 472441 N 364268

Access ID	Location	Description	OS Co-ordinates
SA17 & SA18	At junction of Ossington Road and Loverose Way	A pair of existing field accesses to be used.	E 474006 N 364521
SA19	Access to Ossington Airfield from Ossington Road	An existing hardstanding access into the Ossington Airfield	E 474676 N 364837
SA20 & SA21	Ossington Road – 1.3 km north of Main Street junction	A pair of new accesses to be formed on either side of the road.	E 475568 N 365962
SA22	Carlton Lane – 300 m south of Ossington Road junction.	An existing field access to the east of the road to be upgraded.	E 479108 N 363943
SA23 & SA24	Approx. 730 m west of Carlton Road	A pair of existing field access to be upgraded.	E 477879 N 363178

30 It should be noted that the existing access track into the Ossington Airfield at SA19 will not be used by HGV traffic, except for the limited use for AILs associated with the delivery of cable drums.

A5.2.3.1 MANAGEMENT OF ACESSES

- 31 All construction vehicles will access and egress the local road network in a forward gear.
- 32 A booking system will be set up to manage arrivals and departures at each primary access. The intention of this procedure is to avoid instances of HGVs passing each other in opposite directions on the local roads.
- 33 Banksman will be deployed at each secondary access whenever construction vehicles are accessing or egressing. This will ensure the safe movement of construction vehicles in and out of the accesses.
- 34 Temporary signage will be erected in the vicinity of all accesses during the construction phase. Diagram 7301 'WORKS TRAFFIC' in the Traffic Signs Regulations and General Directions (TSRGD)¹ will be used to indicate the access and will read 'WORKS TRAFFIC LARGE VEHICLE TURNING'. These signs will be white text and red background 1050 x 750 mm mounted in 'A' frames. The temporary signs will be in place for the duration of the works for each construction phase.

A5.2.4 CONSTRUCTION VEHICLE TRIP GENERATION

- 35 This section of the outline CTMP sets out the trip generation associated with the construction phase of the Development.
- 36 The construction of the Development is anticipated to take approximately 24 months. The associated traffic flows and 'worst case' will vary over that time as different elements and phases of the Development are constructed, possibly simultaneously, or at least with a degree of overlap.
- 37 It should be noted that although 5 phases are presented in the outline construction programme in Table A5.2.4, this is a spatial separation, but not necessarily temporal, with phases 1 and 3 being concurrent and 2, 4 and 5 being concurrent. This is equivalent, therefore, to two temporal phases with two or three construction teams operating concurrently.
- 38 The detailed calculations of traffic generation are set out within the Transport Statement (TA A14.1 [EN010162/APP/6.4.14.1]). Table A5.2.4 provides the construction programme populated with a summary of the forecast traffic generation over each month and phase (HGV, LGV and car/van). As can be seen there are two 'worst case' period months when traffic levels are expected to peak, each occurring on different parts of the network relevant to their phase in the programme.

¹ Traffic Signs Regulations and General Directions 2016. Available at:
<https://tsrgd.co.uk/pdf/tsrgd/tsrgd2016.pdf>

Table A5.2.4. Construction Phase Traffic

Construction Activity	Month																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Phase one	Site access points	8	8	8																						
	Roads and tracks		328	164	55																					
	Construction compounds			324	486																					
	Fencing and CCTV				14	27	41	42	42	42	41	27	14													
	Solar PV poles, modules, inverters and transformers				50	100	152	155	155	155	152	100	50													
	Cabling				28	56	85	87	87	87	85	56	28													
	Intermediate substation								20	20	20	20	20										20	20		
	BESS/400 kV compound								17	17	17	17	17	5	5	5	5	5	5	5	5	5	5	5	5	
	Connection to the transmission network at the existing National Grid Staythorpe Substation																						10	10		
	Mitigation/enhancement planting				2	2	2	2	2	2	2	2	2											2	2	
Phase two	Site access points													15	15	15										
	Roads and tracks													334	167	56										
	Construction compounds													324	486											
	Fencing and CCTV																14	28	42	43	43	43	42	28	14	
	Solar PV poles, modules, inverters and transformers															51	102	155	158	158	158	155	102	51		
	Cabling															29	57	87	88	88	88	87	57	29		
	Intermediate substation																			20	20	20	20	20		
	Mitigation/enhancement planting															2	2	2	2	2	2	2	2	2		
Phase three	Site access points	20	20	20																						
	Roads and tracks		364	182	61																					
	Construction compounds			540	810																					
	Fencing and CCTV				15	30	46	47	47	47	46	30	15													
	Solar PV poles, modules, inverters and transformers				55	111	168	172	172	172	168	111	55													
	Cabling				31	62	95	96	96	96	95	62	31													
	Intermediate substation								20	20	20	20	20										20	20		
	Mitigation/enhancement planting				2	2	2	2	2	2	2	2	2											2	2	
Phase four	Site access points													23	23	23										
	Roads and tracks													616	308	103										
	Construction compounds													864	1296											
	Fencing and CCTV															26	51	78	79	79	79	78	51	26		
	Solar PV poles, modules, inverters and transformers														94	188	285	291	291	291	285	188	94			
	Cabling														31	62	95	96	96	96	95	62	31			
	Intermediate substation																			20	20	20	20	20		
	Mitigation/enhancement planting														2	2	2	2	2	2	2	2	2	2		
Phase five	Battery installation													5	5	5	5	5	10	10	10	10	10			

28	720	1238	1609	391	592	604	661	661	649	448	255	48	997	1711	2199	502	761	775	815	815	801	592	348
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A5.2.4.1 CONSTRUCTION WORKERS

- 39 An outline Travel Plan has been prepared [EN010162/APP/6.4.14.2] to support the DCO application and forms part of this outline CTMP. A detailed Travel Plan will be produced as part of the Detailed CTMP prior to the commencement of the of the construction phase.
- 40 The Outline Travel Plan includes measures for the provision of shuttle buses to transport construction workers to and from the Order Limits, which is particularly important for non-local workers, who will stay in local accommodation and be transported at the beginning and end of the day.
- 41 Specific details of the shuttle service will be finalised once the principal contractor confirms the construction requirements.
- 42 The shuttle service(s) will be adaptable, operating according to the necessary working patterns, staff shifts, and the demands of each construction phase.
- 43 It is fundamental to highlight that the shuttle bus services will operate outside peak hours, thus avoiding any impact on the strategic or local road network near the Order Limits.
- 44 In addition to the service transporting staff around the Order Limits, and depending on identified areas where staff reside, the Applicant will explore the feasibility of offering a direct shuttle bus service from these areas to the Order Limits. This would consolidate multiple staff trips to and from the Order Limits during construction, with the details outlined in the Travel Plan submitted for approval.
- 45 The feasibility of a shuttle service from Newark Northgate train station and Newark Castle train station will also be examined as part of the Travel Plan.
- 46 In addition to the shuttle bus service, workers who drive will be encouraged to car share where possible.
- 47 The Travel Plan will form part of the Detailed CTMP, which is secured as a Requirement of the DCO.

A5.2.4.2 TIMINGS OF CONSTRUCTION VEHICLE MOVEMENTS

- 48 Core working hours are to be between 07.30 and 18.00, Monday to Friday, and 08.00 and 13.00 on a Saturday (unless in exceptional circumstances where the need arises to protect plant, personnel or the environment). In addition to this, a start-up and close-down period of up to an hour before and after the core working hours is proposed, which does not include the operation of plant or machinery likely to cause a disturbance.
- 49 Deliveries by HGV will be coordinated through a booking system to avoid travel during the network peak hours, where possible. Therefore, deliveries will be scheduled for between 09:30 and 16:30 where possible. Additionally, to avoid unnecessary interaction with school users, deliveries utilising large vehicles will be timed as such that they do not arrive between 08:00 – 09:30 and 14:30 – 15:30 if they pass schools; large delivery vehicles will also not be allowed to leave the site during these time periods.
- 50 Construction worker shifts will be scheduled so that workers are not travelling during the network peak hours of 08:00-09:00 and 17:00-18:00.

Therefore, there should be limited or no construction vehicle movements during these periods.

A5.2.5 CONSTRUCTION VEHICLE ROUTING

- 51 This section provides details of the construction vehicle routes to each access of the Development for HGVs. Drivers will be made aware of the routes to each access in advance of driving to the Development. The selected routes are considered the most appropriate for each access point.
- 52 Routing to the Development for HGVs will be strictly in accordance with permitted routes outlined on Figure A5.2.1. This routing for HGVs will be a contractual obligation of the appointed contractor who will be responsible for its enforcement. Any HGV confirmed as routing via any other arrangement will be the subject of an escalated warning system before more contractual action is taken.
- 53 A summary of the construction vehicle routing to the primary accesses from the A1 are described in Table A5.2.5.

Table A5.2.5: Routes to Primary Access Locations

Access ID	Description
PA1	A46 – A617 Kelham Road
PA2	A46 – A616 Great North Road – A616 Ollerton Road – Caunton Road
PA3	A46 – A616 Great North Road – A616 Ollerton Road – Caunton Road
PA4	A46 – A616 Great North Road – A616 Ollerton Road – Maplebeck Road
PA5	A46 – A616 Great North Road – A616 Ollerton Road – Maplebeck Road / Newark Road
PA6	A46 – A616 Great North Road – A616 Ollerton Road – Maplebeck Road / Newark Road
PA7	A46 – A616 Great North Road – A616 Ollerton Road
PA8	A46 – A616 Great North Road – A616 Ollerton Road
PA9	A46 – A616 Great North Road – A616 Ollerton Road - Kersall Road
PA10	A46 – A616 Great North Road – A616 Ollerton Road - Kersall Road
PA11	B1164 – Ollerton Lane – Internal Access Track – Ossington Road
PA12	B1164 – Weston Road – Moorhouse Road
PA13	B1164 – Ollerton Lane
PA14	Ossington Road
PA15	Ossington Road
PA16	Ossington Road
PA17	Ossington Road – Carlton Lane
PA18	A46 – A617 – Staythorpe Road

Access ID	Description
PA19	A46 – A617 – Staythorpe Road

A5.2.5.1 ROAD SIGNAGE FOR ACCESS

- 54 Temporary road signage will be implemented along the designated routes to inform background traffic of the ongoing construction works and to direct construction traffic. The signs will be located at key points along the route, including junctions. Signage will also be used to advise construction traffic of a route that is not permitted, and these will be deployed at appropriate locations, to be agreed with the Local Highway Authority. Where signage is necessary on the Strategic Road Network, agreement with National Highways would be sought.
- 55 All temporary construction signage will be compliant with Chapter 8 of the Traffic Signs Manual² where applicable. The following points will be considered when locating signage:
 - The position of the sign in relation to the highway;
 - Possible distraction to drivers; and
 - The proximity to junctions and roundabouts.

A5.2.5.2 MANAGEMENT OF DELIVERIES

- 56 All HGV deliveries will be scheduled in advance using a booking system. Drivers will be instructed to stop in a safe and appropriate location and make contact if they are likely to miss their allotted slot to allow the schedule to be changed. The intention of this procedure is to avoid instances of HGVs passing each other in opposite directions on the local roads.
- 57 The general procedure for vehicles arriving and departing a primary access will be:
 - Drivers to be notified of scheduled arrival time ahead of delivery and which access/route to use;
 - When a delivery vehicle is due, site staff will ensure that the site access point is clear to accept their arrival;
 - All operatives will communicate with each other, as necessary;
 - If required, banksmen will assist HGVs to manoeuvre from the public highway into the accesses but will not direct general traffic; and
 - Before drivers depart, the Site Manager will be notified and if required, a banksmen will be deployed to the relevant site access;
- 58 The general procedure for vehicles arriving and departing a secondary access will be:
 - On arrival at the primary access, drivers will be notified of the internal route to the appropriate secondary access;

² Traffic Signs Manual, Chapter 8. Traffic Measures and Signs for Road Works and Temporary Situations, Part 1: Design. Available at <https://assets.publishing.service.gov.uk/media/5a74adeaed915d7ab83b5ab2/traffic-signs-manual-chapter-08-part-01.pdf>

- When a road crossing is due, a banksman will be mobilised to ensure crossing movements can be done safely;
- The driver will be informed that the crossing movement is ready, and it is appropriate to undertake the movement;
- All operatives will communicate with each other as necessary; and
- A banksman will assist HGVs to manoeuvre from the public highway into the accesses but will not direct general traffic.

59 AIL movements to the secondary access at Ossington will be undertaken in accordance with the arrangements outlined in Section A5.2.6.

A5.2.5.2.1 Road Network Incidents

60 It is acknowledged that from time to time, unscheduled abnormal events may occur on the road network on the routes being used for the construction phase. Examples of such abnormal events could include a collision or unplanned maintenance on the A1 resulting in a diversion onto the construction routes, or part of the route being submerged and unpassable due to flooding.

61 In the instance of these events, HGV construction traffic will be held on site and HGV deliveries on route will be notified by radio/mobile phone and instructed to pause until such time that normal traffic conditions have resumed, unless already on the local road network approaching the access.

62 HGV construction traffic will not use roads on a diversion that differ from the permitted construction routes – i.e. that pass through villages on minor roads.

A5.2.6 ABNORMAL LOADS

A5.2.6.1 ABNORMAL INDIVISIBLE LOAD ACCESS

63 Transporting AILs to a new development is a complex but essential task that requires precise planning and execution. AILs for the Development will include the transformers and cable drums.

64 To assist in the planning of AIL transportation, Wynns, a specialist AIL transportation specialist has been engaged from an early phase of the project. Wynns are well placed to provide specialist advice given their extensive experience, which includes other projects in the area that have used much of the same road network.

65 AIL assessments have been undertaken by Wynns for the transportation of AILs to the substation sites and proposed cable drum access points and laydown areas. A copy of these reports is included in Appendix G of the Transport Statement (ES TA A14.1) [EN010162/APP/6.4.14.1].

66 The Wynns reports advise that all of the proposed substation sites are feasible in terms of heavy load AIL requirements based on historical movement requirements at heavier weights in the area. The reports also outlined that informed by a physical route survey, the preferred AIL access routes via the public road network to the proposed site accesses are considered negotiable for cable drums.

- 67 The AILs will be delivered under Special Types General Order (STGO) Regulations³ and will not be from the nearest known heavy loads routes (the A1, A617 and A616) which have been historically used for access to Staythorpe Power Station for much larger heavy electrical plant.
- 68 The review of the routes didn't identify any specific structural restrictions and there are no weak structures (which cannot accommodate standard 44 tonne (t) Construction and Use traffic) on the preferred routes.
- 69 Further discussions with Nottinghamshire County Council and the police will be necessary to confirm access requirements in terms of escorting of the AILs and these will be included in the final CTMP prior to construction. The AIL movements will likely take place during quieter periods on the local highway network.
- 70 Figure A5.2.2 shows the Illustrative Design routes to the substation locations and cable drum access points.

A5.2.6.2 MANAGEMENT AND MEASURES

- 71 Traffic management will be in place for all abnormal load movements destined for the Development.
- 72 AILs will take up the entire road width on the final approaches to AIL accesses and careful traffic management will need to be agreed with the Police in terms of escort requirements. It is possible that detailed traffic management options including Temporary Traffic Regulation Orders (TTRO) will be required by the police or highway authorities. Measures may include a police escort, temporary localised road closures and plating and packing of the kerbs to avoid damage.
- 73 The exact nature of the traffic management measures will be agreed with the local highway authority and police prior to the movement taking place. These measures will not be detailed within the Construction Environmental Management Plan (CEMP), as agreement of the requirements may not be concluded until after the CEMP has been finalised prior to construction.
- 74 Should any issue arise with structures on the route, the following measures will be explored in the first instance:
 - Consideration of temporary cautions such as no other traffic on bridges, centre line running, no stopping or gear changing, or removing the tractor units and winching the trailer across;
 - Alternative trailer arrangements to reduce axle loads or increase axle spacings, or to increase the outside track (bogie width) of the AIL;
 - Further detailed inspections and assessments by way of core sampling to confirm concrete strength;
 - Temporary relieving measures either to the structure itself, or from beneath it, or by way of installation of bridging units to avoid loading the structures. This would typically take place under a road closure with associated traffic management to allow for temporary works to be carried out to prepare the bridge area, install equipment, cross and then removed after the load has passed; and

³ The Road Vehicles (Authorisation of Special Types) (General) Order 2003. Available at:
<https://www.legislation.gov.uk/uksi/2003/1998/contents/made>

- Permanent relieving measures such as strengthening or replacement.
This is not expected to be required.

A5.2.7 MITIGATION AND MANAGEMENT MEASURES

- 75 The contractor will introduce measures to minimise the impact resulting from construction activities.
- 76 While an overarching mitigation strategy will be developed for the wider Order Limits, due to the scale and expanse of land covered by the Order Limits it will be necessary to ensure mitigation measures are applied in a tailored manner, reflecting the varied requirements. The Detailed CTMP for each phase of the Development is secured by a Requirement in the Draft DCO. This secures the mitigation measures set out in this Outline CTMP.

A5.2.7.1 PASSING PLACES

- 77 To facilitate the continued use of two-way traffic flows on the routes to the Order Limits when subject to HGV traffic, passing places are to be constructed on the roads identified as being of insufficient width to comfortably accommodate these movements in their current form.
- 78 It is however noted that large vehicles do currently use these routes, including slow moving agricultural vehicles and as such, are currently self-managed. A consequence of these instances however, is vehicle over-run of the adjacent soft verges in some places (this has been confirmed in site visit observations and from public consultation feedback).
- 79 Passing places are proposed at 27 locations within the Order Limits, which are shown on Figure A5.2.3 and summarised in Table A5.2.6.

Table A5.2.6: Passing Place Commentary

Passing Place ID	Description / Justification
1	Caunton Road – from the north, the majority of the road is adequate but narrows as it approaches the site access locations.
2 to 16	Maplebeck Road / Newark Road – HGVs are noted to already use this route, but a number of passing places are proposed to ease two-way flows when an increased number of HGVs will be present during the construction phase.
17 to 20 (*)	Moorhouse Road – to facilitate the passing of vehicles when an increase in HGV traffic due to the construction phase.
21 to 24	Weston Road – to facilitate the passing of vehicles when an increase in HGV traffic due to the construction phase.
25 to 28	Ossington Lane - to facilitate the passing of vehicles when an increase in HGV traffic due to the construction phase.
29	Ossington Road - from the east, the majority of the road is adequate but narrows as it approaches the site access location.
30	Carlton Lane – to mitigate the risk of two vehicles passing on the section between the site accesses and Ossington Road.

Passing Place ID	Description / Justification
(*) Passing place IDs along this section do not run consecutively due to design iterations adding and removing places, and the original references retained for continuity between versions.	

A5.2.7.2 PUBLIC RIGHTS OF WAY AND VULNERABLE USERS

- 80 A Recreational Route Management Plan (RRMP) will be implemented during the construction, operational and decommissioning phases of the Development. An outline RRMP is included in the ES as TA A18.1 [EN010162/APP/6.4.18.1]. The RRMP will accord with this outline, and will be submitted to Newark and Sherwood District Council for approval in advance of construction. This will be secured by DCO Requirement. This includes measures for where a vehicle track intersects with a PRoW.
- 81 Access to dwellings and farms will be maintained during the construction phase of the Development.

A5.2.7.3 TRAFFIC MANAGEMENT

- 82 The routes identified for construction vehicles are mostly good standard single carriageway roads with widths considered suitable to accommodate HGV movements. The routes generally benefit from typically straight alignments and good forward visibility.
- 83 The existing road layout can accommodate HGV movements within the available carriageway, without the need to over-run kerbs. (including the largest likely vehicles - Low Loader and Large Tipper Truck). As the larger vehicles perform turning movements at junctions however, over-sail of the opposing lane may be required for which specific management will be required. Such instances of HGV traffic requiring additional road space to manoeuvre is not uncommon. The frequency of these larger vehicles undertaking such movements occurring is generally low and will be carefully managed to ensure the safety of all road users.
- 84 The approaches to most junctions however benefit from good forward visibility on all arms and as such, can be self-managed (as would currently take place for large vehicles undertaking such movements).
- 85 Measures are available to mitigate where conflict locations may occur (which will be identified in the Detailed CTMP) include:
 - Speed restrictions to construction related traffic at locations where pedestrian flows are likely to be relatively higher and there are poor pedestrian facilities. The appointed contractor will be required to ensure that all construction traffic obey a reduced speed limit;
 - Use of banksmen and traffic marshals to be utilised to ensure the safe passage of construction vehicles at sensitive locations; and
 - Restrictions on delivery times to avoid peak hours and to avoid opening / closing times of any specific facilities.
- 86 As outlined previously, the traffic management for AIL movements will be agreed with the local highway authority and police prior to the AIL movement

taking place, and therefore will not, typically, be set out in detail in the Detailed CTMP.

A5.2.7.4 SIGNAGE

- 87 Advanced warning signage will be erected to advise drivers of the presence of construction traffic during the construction phase, with a particular focus on areas where HGV turning movements are expected.
- 88 Signs to direct construction vehicles associated with the Development will be installed along the construction traffic routes.
- 89 Whilst drivers of construction related traffic will be advised of their permitted route to site in advance, site construction related signage will be deployed at key locations, in agreement with the highway authority. Signage will also be deployed at appropriate locations to inform drivers of routes that are not permitted.
- 90 Delivery drivers, contractors and visitors will be provided with a route plan to ensure that vehicles follow the identified route. The signage strategy will be agreed with the relevant highway authority, and set out within the Detailed CTMP.
- 91 All signage on the designated route will be inspected daily to ensure they are kept in a well-maintained condition and located in safe and appropriate locations.

A5.2.7.5 VEHICLE MOVEMENTS

- 92 Construction deliveries by HGV will be coordinated to arrive/depart between 09:30-16:30 to avoid the network peak hours of 08:00-09:00 and 17:00-18:00. Restrictions on HGV deliveries will also be in place during school drop-off times and other sensitive periods.
- 93 Banksmen will be provided, as required, at the secondary accesses to indicate to construction traffic when it is safe for them to enter and exit.
- 94 A Travel Plan will be implemented, in accordance with the Outline Travel Plan [EN010162/APP/6.4.14.2], to encourage construction workers to travel via sustainable modes where possible. Measures within the Outline Travel Plan include the provision of a shuttle bus and a car sharing. Shifts will be organised to avoid construction worker movement between 08:00-09:00 and 17:00-18:00.
- 95 The management associated with AIL movements will be agreed with the local highway authority and the police prior to the delivery.

A5.2.7.6 BOOKING SYSTEM

- 96 A booking system will be set up to manage arrivals and departures of HGVs to each primary access and a log will be kept as part of the booking system. The intention of this procedure is to avoid instances of HGVs passing each other in opposite directions on the local roads.
- 97 In order that specific control measures can be deployed when and where necessary, regular movements will be arranged to occur at specific times. In respect of deliveries, HGVs will be required to phone the site ahead of their arrival to confirm that their movement will not conflict with others and as

such, the arrival of HGVs will be expected. Ahead of their expected arrival at the access, site staff would check that the access is clear of obstructions. Site staff will not direct general traffic but will ensure that HGVs are able to negotiate the junction without conflicting with other road users.

A5.2.7.7 PARKING

- 98 Adequate parking will be provided for both staff and visitors at all compound locations within the Order Limits. Advisory signs will be erected to inform contractors and visitors that parking is not permitted on-street in the vicinity of the access or access road. Contractors and visitors will be advised that dedicated parking facilities will be provided on-site in advance of visiting and that they should not park on-street.
- 99 The Site Manager will regularly monitor that parking is taking place within the designated areas.

A5.2.7.8 WHEEL WASH FACILITY

- 100 A wheel washing facility or wheel cleaning facility will be provided at each access. This will be located at the end of each access road, ahead of the egress onto the local highway network.
- 101 A visual inspection of vehicles will be undertaken by site staff before they depart a primary access to ensure that they are not carrying any residual debris onto the highway.
- 102 If required, a road sweeper will be provided for the areas surrounding each access to remove any residual debris generated during the construction phase, as required.

A5.2.7.9 NOISE REDUCTION AND AIR QUALITY

- 103 When vehicles are inactive for prolonged periods, vehicle engines will be required to be switched off.
- 104 Vehicles carrying material off-site will be sheeted to prevent the spread of dust.
- 105 In dry conditions, areas near to the site accesses will be sprayed with water to prevent the spread of dust.

A5.2.7.10 SITE SECURITY

- 106 The compounds will always be secured via a perimeter fence or temporary fencing. Closed Circuit Television (CCTV) will be operational within the construction compound.

A5.2.7.11 ROAD CONDITION SURVEY

- 107 A pre-commencement condition survey of the routes to each site access will be undertaken to identify any defects in the road surface that require remedial measures prior to works commencing. This will include remedial measures to defects such as potholes, with particular focus on those located close to residential properties to minimise the impact from noise and vibration.

- 108 Prior to HGV construction related traffic using the routes, a road condition survey will be carried out on the local highway network via video two weeks before the construction of a particular phase starting on site. The extent of the survey will be agreed with the local highway authority prior to commencement to establish the baseline condition of the road. It will identify any areas where general maintenance works are required prior to works commencing.
- 109 A road condition survey will again be undertaken at an interim period of the construction activities of a particular phase, to ensure that any defects occurring during the early stages of construction are not left unrectified until the end of construction. The scheduling of this interim survey will be agreed with the local highway authority.
- 110 Once construction is complete, a post-construction condition survey will be undertaken to identify any additional defects that can reasonably be attributable to construction activities of the Development. Any identified highways defects resulting from construction activities will be made-good to the satisfaction of the local highway authority.

A5.2.7.12 COMMUNITY ENGAGEMENT

- 111 The details of an appropriate contact for the works will be provided to the local highway authority in advance of any work being carried out.
- 112 The contact details will also be provided on site boards and distributed to the local community to enable issues during the construction phase to be raised and appropriately addressed.
- 113 All residents in the vicinity of the Order Limits along the designated routes will be provided with relevant contact details so that any concerns around traffic management can be raised and also addressed.

A5.2.7.13 MONITORING

- 114 Any unforeseen issues and complaints that arise in relation to construction vehicle movement will be logged by the Site Manager and resolved as appropriate.