Construction Traffic Management Plan

Kingston Solar Farm

18/08/2022

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EXECUTIVE SUMMARY

5.1. This Construction Traffic Management Plan (CTMP) outlines the overall framework for managing the movement of construction and delivery traffic to and from the Proposed Development Site, as well as considering the type of traffic it will generate. The traffic assessment for the operational and decommissioning phases were also considered.

5.2. Impacts from the operational phase of the site, consisting of between 10-15 LGVs per year, is not considered to be 'significant' and therefore a full Transport Assessment/Statement is not required. However, elements of the National Planning Practice Guidance (NPPG) which are relevant to this project, namely, to include details of the existing conditions and issues relating to the Proposed Development, have been considered in this CTMP.

5.3. Increased volumes of traffic will be generated by the Proposed Development during the construction period. However, the overall volumes of traffic generated are considered to be quite low. During the anticipated six-month construction period, a total of 1054 Heavy Goods Vehicles (HGV) deliveries will be made to the Application Site. During the peak construction, which will be towards the beginning of the construction period, there will be an approximate maximum of 20 daily HGV deliveries.

5.4. The haulage route will likely be from the M1 to the west of the Application Site. The delivery vehicles will exit the M1 at junction 24, signposted A453 Nottingham (S), onto the A453 and travel in a northeast direction for approximately 4.3km, before taking the exit onto West Leake Lane. This road will be travelled on in a southern direction for approximately 1.5km, before turning left onto Kegworth Road. Vehicles will travel northeast along this road for approximately 1.3km before turning right into Wood Lane where the site is accessed from.

5.5. The site will be accessed from Wood Lane which is an unadopted road. The junction of Kegworth Road and Wood Lane will require widening with a temporary surface area to ensure the largest construction vehicle can access the site. To facilitate this, 11m of hedgerow will need to be realigned. This temporary surface has been extended so that vehicles can wait at the junction as any traffic off Kegworth Road passes it.

5.6. It is noted that Wood Lane is single lane width, however there are passing bays along this. The Applicant will investigate extending the width of any passing bay along Wood Lane, where possible. It is also proposed to extend the whole width of the road up the site entrance point to a maximum of 4.5m. There is space in the existing verge to extend the width of this road with a space of between 5 and 6m between hedgerows. In addition, due to Wood Lane being a Bridleway, there will be a banksman in place at the junction off Kegworth Road for the duration of the construction period. There will also be one in place at the site entrance so that construction vehicles can be managed to mitigate any impact on users of the bridleway.

5.7. Consultation with Highways Development Control confirmed that speed surveys would be required if any reduction in the visibility splay from that of a 60mph road is to be considered. It was noted on the site visit that it was likely that vehicles would be travelling up to the roads

speed limit and therefore the full 210m x 2.4m visibility splay for a 60mph road is required. The Visibility Splay of 210m x 2.4m will be achievable with the realignment of 152m of hedgerow and the trimming of 11m of hedgerow. This is a significant increase on the existing visibility at this junction which is limited when exiting the site and looking in a westerly direction.

5.8. The Applicant will conduct a pre- and post-construction condition survey of Wood Lane that the site is accessed from, from the public road up to the site access point. The Applicant will be liable to repair any damage to the road attributed to the construction of the Proposed Development.

5.9. Wood Lane is proposed to be widened to a maximum of 4.5m. Vehicles accessing the site during the construction phase are c. 2.5m, leaving sufficient space to cordon off an area for users of the RoW to continue use. Only when the Grid Transformer is being delivered will this road need to be closed temporarily, however this will be for a short period of time, likely no more than 10 minutes. All Bridleways will also be appropriately signed, whilst banksmen will be available when construction vehicles must cross over Bridleways, always without fail. Where there are Bridleway crossings, the construction area will be signed to alert construction vehicle drivers not to cross without a banksman available and priority will be given to any users which are currently using the Bridleways.

5.10. The CTMP sets out a variety of specific mitigation measures that will be implemented during construction that will minimise the impact of the construction traffic on the environment and local communities; these include:

- Limitations on working times and HGV scheduling;
- Site security and signage; and,
- Measures to control emissions of dust and other airborne contaminants.

5.11. This Construction Traffic Management Plan conforms to the policies and objectives of the Local Development Plan, adopted by Rushcliffe Borough Council and the Design Manual for Roads and Bridges.

INTRODUCTION

Background

5.12. Neo Environmental Ltd has been appointed by Renewable Energy Systems (RES) Ltd (the "Applicant") to complete a Construction Traffic Management Plan (CTMP) for a proposed 49.9MW solar farm with associated infrastructure (the "Proposed Development") on lands circa 1.3km south of Gotham and c. 0.75km northwest of East Leake, Nottinghamshire (the "Application Site").

5.13. Please see **Figure 4 of Volume 2: Planning Application Drawings** for the layout of the Proposed Development.

Development Description

5.14. The Proposed Development will consist of the construction of a 49.9MW solar farm with bi-facial solar photovoltaic (PV) panels mounted on metal frames, new access tracks, underground cabling, perimeter fencing with CCTV cameras and access gates, two temporary construction compounds, substation and all ancillary grid infrastructure and associated works.

5.15. The Proposed Development will result in the production of clean energy from a renewable energy resource (daylight) and will also involve additional landscaping including hedgerow planting and improved biodiversity management.

Site Description

5.16. The Application Site is located on lands circa 1.3km south of Gotham and c. 0.75km northwest of East Leake, Nottinghamshire; the approximate centre point of which is Grid Reference E453185, N328739. Comprising 16 agricultural fields and additional ancillary areas, the Application Site measures c. 80.65 hectares (ha) in total, with only c. 55.65 hectares accommodating the solar arrays themselves. See **Figure 1 of Volume 2: Planning Application Drawings** for details.

5.17. The Proposed Development Site is split into two sections, north and south, by an area of woodland, Leake New Wood. Both sections lie on elevated, gently undulating land ranging between 87 – 96m AOD. The northern section extends across several rectilinear agricultural fields largely contained by existing mixed woodland including Gotham Wood to the north, Cuckoo Bush to the east, Leake New Wood to the south and Crownend Wood to the west. The southern section is also surrounded by pockets of woodland including Oak Wood, Crow Wood and Ash Spinney.

5.18. The Application Site is in an area with an existing industrial presence with a pylon located on the southwestern boundary of Field 6, a wood pole line along the boundary between Fields 6 and 7 and within the southern section of Fields 3 and 4 and overhead lines located along the

southern boundary of Field 16 and the eastern boundary of Field 15 (See **Figure 3 of Volume 2: Planning Application Drawings** for field numbers).

5.19. The surrounding area is semi-rural in nature with the site being surrounded by agricultural fields and woodland in most directions. The area is however punctuated by individual farmsteads and Rushcliffe Golf Club is located on the eastern boundary of the southern section of the site. There are also various industrial brownfield sites within the locality including Charnwood Truck Services located directly west of the northern section of the site. Additionally, there is a large-scale power station located beyond the A453, circa 1.58km north of the site which can currently be seen from Bridleway 12.

5.20. Recreational routes include a number of Bridleways (BW) which cross or abut the Site providing connectivity to the wider Kingston Estate. These include Gotham BW No. 10, 11, 12 and 16 and West Leake BW's No. 1, 3, 5, 13 and 6. West Leake BW No. 5, bordering Fields 16 and 17 is also a Long-Distance Walking Route (LDWA); the Midshires Way. While there are several field drains throughout the Application Site, it lies entirely within Flood Zone 1, an area described as having a "Low probability" of flooding.

5.21. The Application Site will be accessed from Wood Lane, which is an unadopted road. Delivery vehicles will exit the M1 at junction 24, signposted A453 Nottingham (S), onto the A453 and travel in a northeast direction for approximately 4.3km, before taking the exit onto West Leake Lane. This road will be travelled on in a southern direction for approximately 1.5km, before turning left onto Kegworth Road. Vehicles will travel northeast along this road for approximately 1.3km before turning right into Wood Lane.

Scope of the Assessment

5.22. The purpose of this CTMP report is to provide a framework for managing the movement of traffic to and from the Application Site, and to minimise the impact on the local road network during the construction period of the Proposed Development. The potential impact of traffic during the operation and decommissioning periods are also assessed.

5.23. This CTMP will provide details of:

- Traffic route identification and assessment;
- Swept path analysis; and
- Construction traffic management procedures.

5.24. This report is supported by the following appendices:

- **Appendix 5A: Figures**
  - Figure 5.1: Proposed Haul Route
  - Figure 5.2: Swept Path Analysis

– Figure 5.3: Visibility Splay

Statement of Authority

5.25. This Construction Traffic Management Plan has been produced by Michael McGhee of Neo Environmental Ltd. Having completed a civil engineering degree in 2012, Michael has worked on over 1.5GW (approximately 50 individual sites) of solar farm Construction Traffic Management Plans across the UK and Ireland, as well as more detailed transport statements for major developments. Tom has an undergraduate degree in Bioengineering and graduated with an MSc in Environmental and Energy Engineering in January 2020. He has been working on various technical assessments for numerous solar farms in Ireland and the UK.

Consultation

5.26. A pre-application request was submitted to Rushcliffe Council on the 18th December 2020 and a response was received on the 13th May 2021. At the time, two entrances were proposed to be used; Wood Lane to the north and Stocking Lane to the south (for transformer deliveries only).

5.27. With regards to transport, the response stated:

"It is noted that the access to the Proposed Development Site is yet to be confirmed, however it is likely that the western site area will be accessed form Wood Lane, and the eastern site area will be accessed form Stocking Lane.

The County Council Highway officer has advised that "No information has been submitted to determine the size and frequency of the vehicles used in the transit process, although it is noted LGV's will be utilised for routine maintenance.

Street View imagery highlights Wood Lane has a single lane width. This raises concerns regarding its suitability to absorb additional levels of traffic, particularly when drivers have to negotiate riders on horseback. However, we do note passing bays are available.

Visibility at the Kegworth Road / Wood Lane junction is restricted by the horizontal alignment of the carriageway. We would therefore expect a speed survey to be undertaken to determine the 85th percentile speed at which traffic first comes into view. The commensurate splay must then be achieved without crossing third party land.

Wood Lane should be widened at its junction with Kegworth Road so that the largest vehicle expected to serve the site can stand clear of the public highway whilst waiting for oncoming traffic to pass.

Visibility at the Stocking Lane/Gotham Road junction is acceptable. It is not known whether the condition of Stocking Lane can accommodate road vehicles as it appears to be maintained to standard for its intended use beyond the Golf Club car-park. The applicant must

demonstrate the additional traffic generated by the development will not compromise the safety of other users on the way.

Vehicular rights of access to the solar farms should be established beforehand, as the landowner(s) permission may be required. Our Countryside Access Team should also be consulted for a view.

This would have to be clearly addressed in any submission."

5.28. Highways Development Control were also consulted, and a response was received from Evie Stewart on the 18th of May 2021. She stated that any reduction in visibility splay would have to be accompanied by a speed test and the dimensions would have to be commensurate with measured vehicle speeds, particularly on the Kegworth Road entrance, where serious accidents have been recorded in the vicinity of the junction.

5.29. Following further consultation with the local community and stakeholders, the use of Stocking Lane for access was removed from the design of the Proposed Development. Highways Development Control were consulted on this matter and their response, received on the 4th of October 2021 is as follows:

"*Wood Lane is a Public Bridleway but does not form part of the adopted public highway. Any works that will impact on the Public Bridleway will need to be agreed with the Public Rights of Way Team (Countryside.Access@nottscc.gov.uk), and relevant landowner(s). From our perspective, we will need reassurance that all vehicles will be able to safely exit and enter Kegworth Road, with sufficient passing places to ensure vehicles are not forced to wait or reverse out onto Kegworth Road. A Construction Traffic Management Plan will be required to detail how construction traffic will be managed*"

5.30. The Public Rights of Way Team / Countryside Access Team were consulted on the above, as recommended by Highways and this approach was agreed. Further detail on this can be found in Volume 3, Technical Appendix 11: Public Right of Way Management Plan.

LEGISLATION

5.31. The National Planning Policy Framework (NPPF, 2021)[1] seeks to promote sustainable transport within all new developments. However, the Government recognises that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural areas.

5.32. All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:

- the opportunities for sustainable transport modes have been considered, depending on the nature and location of the site, to reduce the need for major transport infrastructure;
- safe and suitable access to the site can be achieved for all people; and
- improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development.

5.33. It is noted that development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are "*severe*".

National Planning Practice Guidance (NPPG)[2] Travel Plans, Transport Assessments and Statements in Decision Taking

5.34. This NPPG seeks to provide clarification on the issues raised within the NPPF in relation to Transport Statements and is a material consideration in the determination of applications.

5.35. The NPPG defines Transport Assessments and Statements as ways of '*assessing and mitigating the negative transport impacts of development in order to promote sustainable development*'. As set out within the guidance, this Transport Statement primarily focuses on evaluating the potential transport impacts of a development proposal and proposes mitigation measures where these are necessary to avoid unacceptable or "*severe*" impacts.

5.36. The guidance highlights a number of principles to be taken into account during the preparation of the Transport Statement, these include:

[1] Ministry of Housing, Communities & Local Government, National Planning Policy Framework, Feb 2019. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

[2] Ministry of Housing, Communities & Local Government, National Planning Practice Guidance, Travel Plans, Transport Assessments and Statements, March 2014. Available at https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements

- Proportionality to the size and scope of the proposed development to which they relate and build on existing information wherever possible;
- Tailoring to particular local circumstances; and
- Works being brought forward through collaborative ongoing working between the Local Planning Authority/ Transport Authority, transport operators, Rail Network Operators, Highways Agency where there may be implications for the strategic road network and other relevant bodies.

5.37. NPPG identifies that the scope and level of detail in a Transport Assessment or Statement will be site specific and the following has been considered when setting the scope of the assessment:

- Information about the proposed development, site layout, (particularly proposed transport access and layout across all modes of transport);
- Information about neighbouring uses, amenity and character, existing functional classification of the nearby road network;
- Data about existing public transport provision, including provision/ frequency of services and proposed public transport changes;
- An analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three-year period, or five-year period if the proposed site has been identified as within a high accident area; and
- A description of parking facilities in the area and the parking strategy of the development.

5.38. The trip generation from the operational phase of the Proposed Development will not reach a high enough level to be described as 'significant' as it will be limited to maintenance visits approximately once per month. As the guidance states a Transport Statement or Assessment is only necessary when the Proposed Development generates a 'significant' amount of movement, it was felt that a CTMP would be sufficient to support this application.

5.39. This CTMP will consider elements of the NPPG which are relevant to this project, namely to include details of the existing conditions and issues relating to the Proposed Development.

Local Plan Policies

5.40. The Rushcliffe Local Plan 2014 - 2028[3] (the "LP") is the adopted plan.

5.41. Chapter 2 'Sustainable Requirements', of the existing LP (Part 2) contains policies and objectives in relation to transport; with the below policies relating directly to this Proposed Development. Policy 1 states:

"Planning permission for new development, changes of use, conversions or extensions will be granted provided that, where relevant, the following criteria are met:

1. *there is no significant adverse effect upon the amenity, particularly residential amenity of adjoining properties or the surrounding area, by reason of the type and levels of activity on the site, or traffic generated;*
2. *a suitable means of access can be provided to the development without detriment to the amenity of adjacent properties or highway safety and the provision of parking is in accordance with advice provided by the Highways Authority."*

5.42. Chapter 5 'Climate Change, Flood Risk and Water Management', of the existing LP (Part 2) contains policies and objectives in relation to transport; with the below policies relating directly to this Proposed Development. Policy 16 states:

"1. Proposals for renewable energy schemes will be granted planning permission where they are acceptable in terms of:

o) vehicular access and traffic;"

5.43. This CTMP will ensure that the Proposed Development adheres to the policies outlined above.

3 Rushcliffe Council. Rushcliffe Local Plan. Available at https://www.rushcliffe.gov.uk/planningpolicy/localplan/

TRAFFIC ROUTE IDENTIFICATION AND ASSESSMENT

5.44. The chosen delivery route and subsequent CTMP is based upon information provided by the Applicant as well as a thorough review of the local and national roads in the vicinity of the Application Site.

Site Access

5.45. The speed limit on Kegworth road is 60mph. It was observed that vehicles are highly likely to travel at speeds close to the statutory speed limit. This section of road (near the site entrance point) contains centre markings but is not lit by public lighting, with this road being approximately 7m wide. There are no RoW user facilities along this section of road and the carriageway is in relatively good condition. There is some deterioration of the joint between Kegworth Road and Wood Lane, which will likely deteriorate during the construction phase. The client will resurface this section post construction.

5.46. The existing access point off Kegworth Road will require widening with a temporary surface area to ensure the largest construction vehicle can access the site. This can be seen in **Figure 5.2: Appendix 5A**. As per the drawing to facilitate this, 11m of hedgerow will need to be realigned. This temporary surface has been extended so that vehicles can wait at the junction as any traffic off Kegworth Road passes it. In addition, due to Wood Lane being a Bridleway, there will be a banksman in place at the junction off Kegworth Road for the duration of the construction period. There will also be one in place at the site entrance so that construction vehicles can be managed to mitigate any impact on users of the bridleway.

5.47. It is noted that Wood Lane is single lane width, however there are passing bays along this. The Applicant will investigate extending the width of any passing bay along Wood Lane, where possible. It is also proposed to extend the whole width of the road by a maximum of 4.5m up to the site entrance. There is space in the existing verge to extend the width this road with a space of between 5 and 6m between hedgerows.

5.48. Consultation with Highways Development Control confirmed that speed surveys would be required if any reduction in the visibility splay from that of a 60mph road would be considered. It was noted on the site visit that it was likely that vehicles would be travelling up to the roads speed limit and therefore the full 210m x 2.4m visibility splay for a 60mph road is required. The visibility splay of 210m x 2.4m will be achievable with the realignment of 152m of hedgerow and the trimming of 11m of hedgerow, see **Figure 5.3: Appendix 5A**.

5.49. The Applicant will conduct a pre- and post-construction condition survey of Wood Lane from the public road up to the site access point. The Applicant is liable to repair any damage to the road attributed to the construction of the Proposed Development.

Internal Site Tracks

5.50. Additional and upgraded access tracks will be constructed to allow access for the construction, operation, maintenance and decommissioning of the solar panels and associated infrastructure.

5.51. Tracks will measure 4.5m wide with a 4m running width, however, this will increase at bends. All new tracks will be unpaved and constructed from local stone. Geosynthetic reinforcement or soil stabilisation may be used to reduce the depth of track construction. The surface will be a compacted granular material (crushed rock) up to an approximate thickness of 0.3m, dependent on the ground conditions. Details of the access track construction can be found in **Figure 6 of Volume 2: Planning Application Drawings**.

5.52. Detailed design of the Wood Lane widening will be undertaken post consent and the road design will follow the existing road. Detailed designs of how this will tie into the existing road will also be undertaken post consent and the width will be increased to a maximum of 4.5m.

5.53. Load bearing crane hardstanding areas are required during construction to support the cranes as they lift the inverter substations from the delivery vehicles. The site tracks can be used for this purpose, with some localised widening where required.

5.54. The access tracks will be left in situ after completion of the solar farm construction, as they will provide:

- Access for the Proposed Development maintenance and repair works;
- Access for the Landowner; and
- Access for decommissioning of the Proposed Development.

5.55. Once the solar farm is decommissioned, unless required by the landowner and agreed with the council, all new access tracks will be removed.

Proposed Haul Route

5.56. The proposed haul route has been identified by considering the ability of the route to physically accommodate the required vehicles, in addition to the sensitivity of the route to potential disruption by the movements of traffic to and from the Application Site.

5.57. The haulage route will likely be from the M1 to the west of the Application Site. The delivery vehicles will exit the M1 at junction 24, signposted A453 Nottingham (S), onto the A453 and travel in a northeast direction for approximately 4.3km, before taking the exit onto West Leake Lane. This road will be travelled on in a southern direction for approximately 1.5km, before turning left onto Kegworth Road. Vehicles will travel northeast along this road for approximately 1.3km before turning right into Wood Lane where the site is accessed from.

5.58. A map showing the proposed local access route is presented in **Figure 5.1: Appendix 5A**.

Route Assessment

5.59. This route assessment was conducted as a desk-based exercise. Where required, swept path analysis has been conducted using Autotrack software to model the movement of the most onerous load to determine what actions are required to address any issues identified.

5.60. As per the specifications provided, the most onerous loads for the purpose of the swept path are the delivery of the grid transformer. As part of the swept path analysis, the following vehicle was used:

- Articulated HGV incorporating a low loader trailer of 16.4m in total length with a 4.4m wide load

5.61. The exact dimensions of this vehicle and turning details can be found on the drawing in Figures 5.2: Appendix 5A.

5.62. The analysis was conducted using Ordnance Survey (OS) mapping and topographic data.

5.63. No allowances have been made for the provision of independent driver-operated rear steering. The approved haulage operator for the project will confirm final vehicle types prior to construction.

5.64. The load bearing capacity of any bridges or structures has not been measured. These should be checked with the Highways Department prior to the construction period.

5.65. All traffic management and safety implications will be considered by suitably qualified and experienced personnel when arranging the transit of the loads and can be agreed through a suitably worded condition following planning approval.

5.66. Table 5-1 provides a brief commentary of the route analysis at specific points on the haul route. These points can also be viewed on Figures 5.2 Appendix 5A.

Table 5 - 1: Route Analysis

Ref	Manoeuvre Required	Analysis	Required Action	Swept Path Drawings
1	Vehicles will need to take a right-hand turn from Kegworth Road onto Wood Lane.	The existing site entrance will have to be widened slightly to accommodate the movement of the larger construction vehicles.	11m of hedgerow realigned, temporary surface added and land clearing to prepare for existing access.	Figure 5.2 of Appendix 5A

Summary of Enabling Works

5.67. As can be seen in the table above, enabling work will be required for access into the Application Site. This will include top soil strip and land clearing as well as the realignment 11m of hedgerow. Design details of the access track can be found in **Figure 6 of Volume 2: Planning Application Drawings.**

5.68. To enable the required visibility at the junction of Kegworth Road and Wood Lane the following will be required:

- 11m of hedgerow trimming; and
- 152m of hedgerow realigned

5.69. All work required to achieve the visibility splays is contained within the Application Site boundary.

5.70. In addition, Wood Lane will be widened to a maximum of 4.5m from the junction with Kegworth Road to the site entrance. There will also be further widening at this junction to allow vehicles to wait as others enter onto the road. Detailed design of the Wood Lane widening will be undertaken post consent and the road design will follow the existing road. Detailed designs of how this will tie into the existing road will also be undertaken post consent. In addition, due to Wood Lane being a Bridleway, there will be a banksman in place at the junction off Kegworth Road for the duration of the construction period. There will also be one in place at the site entrance so that construction vehicles can be managed to mitigate any impact on users of the bridleway.

CONSTRUCTION TRAFFIC MANAGEMENT

Construction Programme

5.71. Construction of the Proposed Development is anticipated to occur over a six-month period. During this period, there will be a combination of HGVs (for the component and material deliveries) and cars/vans (for construction staff) on site. HGV movements are expected to be the most intense during the initial stages of construction, reducing in numbers throughout the construction period. Car/van movements are expected to be constant throughout.

5.72. Table 5-2 shows the estimated number of deliveries and movements for the main infrastructure.

Table 5 - 2: Estimates HGV Deliveries for construction equipment and infrastructure

TRANSPORT	ESTIMATED NUMBER OF VEHICLES	MOVEMENTS
Delivery of Mounting Frames	100	200
Delivery of Modules	287	574
Delivery of Cabinets	24	48
Delivery of Cables	50	100
Delivery of Plant Equipment	25	50
Delivery of Gravel Hard Core Material	538	1076
Delivery of Fencing / CCTV	30	60
Total	**1054**	**2108**

5.73. Additional site visits may be required due to site conditions, weather restrictions, and due to unforeseen circumstances and therefore, these numbers should be treated as a guideline for planning purposes only. In total, the construction of the solar farm is expected to give rise to 1,054 HGV deliveries over the six-month construction period. A daily maximum of approximately 20 HGV deliveries (40 HGV movements) is anticipated.

5.74. The expected HGV volumes are based on best estimates of trips generated for similar sized solar farms and will be subject to amendments based on local conditions and contractor working practices.

Delivery Booking System

5.75. On a weekly basis, the appointed Site Manager will evaluate details of the daily profile of deliveries proposed for the upcoming week. Through discussions with hauliers, the Site Manager will ensure that that construction deliveries are managed in an efficient manner, with minimal disruption and delays.

5.76. It is proposed that temporary signage would be used to highlight the entrance to the Application Site and to direct construction traffic to the site via the public road network. The Applicant will provide banksmen to assist with the manoeuvring of delivery vehicles to and from the site, as well as internal site movements.

5.77. Hauliers will be required to contact the Site Manager to give an indicative delivery time, to ensure that the delivery space and banksmen are ready for their arrival on site.

5.78. To avoid any vehicles waiting, sufficient time will be provided between deliveries to allow for any delays (such as loading/unloading taking longer than expected).

5.79. Deliveries will be managed and scheduled to ensure that no vehicles would have to wait on the surrounding road network.

Timing Restrictions

5.80. All traffic movements will be carried out between the hours of 07.00 to 19.00 on Monday to Friday and 08.00 to 16.00 on Saturdays. Outside of these times works are limited to a) commissioning and testing and b) Works required in an emergency where there is the potential of harm or damage to personnel, plant, equipment, or the environment, provided the developer retrospectively notifies the Council of such works within 24 hours of their occurrence.

5.81. Deliveries, where possible, will be scheduled to avoid peak times where relevant, e.g. avoiding rush hours and after school drop off and pick up times.

Temporary Site Construction Compound

5.82. Two temporary construction compounds (see **Figure 7 of Volume 2: Planning Application Drawings**) will be required during the construction phase of the Proposed Development. The proposed location of the compounds is shown on the indicative infrastructure layout (**Figure 4 of Volume 2: Planning Application Drawings**) and consists of an area of approximately 50m by 60m each, in a rectangular shape. The compounds will contain the following:

- Temporary site facilities (Port-a-Cabin type) to be used for site office and welfare facilities, including welfare facilities with provision for sealed waste storage and removal;
- Container storage unit(s) for tools and equipment storage;

- Container storage unit(s) for components and materials;
- Refuelling compound for construction vehicles and machinery;
- Chemical toilets;
- Adequate parking area for cars, construction vehicles and machinery;
- Designated skips for construction waste; and
- Wheel washing facility.

Construction Parking

5.83. It is forecast that there will be approximately 50 staff on site at any one time during the construction period, although this will vary subject to the overall programme of works. It is likely that there will be a degree of vehicle sharing by staff and therefore, less than 50 staff vehicles (estimated maximum at 25-30 per day at peak construction periods) are expected to arrive on site each day. Staff vehicle sharing will be actively encouraged to reduce vehicular movements.

5.84. Upon entrance/exit to and from the Application Site, workers vehicles will report directly to the area of hard standing at one of the temporary site construction compounds (see **Figure 7 of Volume 2: Planning Application Drawings**), where there will be sufficient space for parking and turning. Site opening and closing will be outside morning and evening peak traffic times, minimising local traffic disruption during busy periods.

5.85. No parking will be allowed for construction workers on the public road network in the vicinity of the site. A number of additional unscheduled visits may be required throughout the construction period for site inspections and due to unforeseen circumstances, which is accounted for in the existing car parking plans.

Turning Facilities

5.86. The construction compounds have been designed to provide adequate space for vehicle manoeuvring and turning, and all HGV deliveries will report here for unloading. The turning area will ensure that all vehicles will ingress and egress in a forward gear to maintain safety on the public highway.

Site Security

5.87. For security and safety purposes, the Proposed Development will be closed to the general public via security fencing and a locked gate. The security fence installed around the perimeter of the solar farm will be erected at the start of the construction programme and

will remain for the duration of the operation until decommissioning of the solar farm (see Figure 13 of Volume 2: Planning Application Drawings).

5.88. Access to the construction site during construction hours will be controlled by personnel located at the entrance of the development. All visitors will sign in and out with security. Visitors to the site will be given a Health and Safety site induction, provided with Personal Protective Equipment (PPE), and will remain with an appropriately trained escort at all times.

Bridleways / Public Right of Ways (PRoW)

5.89. There are several Bridleways that cross or abut the Application Site. These include Gotham BW'S No. 10, 11 and 12 and West Leake BW's No. 5 and 13(See Figure 3 of Volume 2: Planning Application Drawings). These will all remain open during the construction period, whilst the site has been designed so that they remain open during the operational period also. Wood Lane is proposed to be widened to a maximum of 4.5m. Vehicles accessing the site during the construction phase are c. 2.5m, leaving sufficient space to cordon off an area for users of the RoW to continue use. Only when the Grid Transformer is being delivered will this road need to be closed temporarily, however this will be for a short period of time, likely no more than 10 minutes. All Bridleways will also be appropriately signed, whilst banksmen will be available when construction vehicles must cross over Bridleways, always without fail. Where there are Bridleway crossings, the construction area will be signed to alert construction vehicle drivers not to cross without a banksman available and priority will be given to any users which are currently using the Bridleways.

5.90. There will also be a dedicated Community Liaison Officer to engage with local residents, throughout the construction and operational phases.

Operational Period

5.91. The operational phase of the solar farm is anticipated to have negligible trip generation potential with approximately 10-15 Light Goods Vehicles (LGVs) expected every year for scheduled maintenance checks, with additional visits required to attend to remedial issues when necessary. The operational access point will use the same entrance to the site as during the construction period.

Decommissioning Period

5.92. The number of HGVs required for the decommissioning period will be slightly higher than the construction phase due to the materials not being as neatly packed as when shipped from factory conditions. Whilst the construction phase had a total of approximately 2,108 movements, the decommissioning phase will have a total of circa 2,318 movements (estimate includes a 10% increase on the construction stage). This increase is not considered to be significant.

MITIGATION

5.93. The impact of the Proposed Development has been identified as **temporary** in nature and associated with short construction and decommissioning phases only. It is still important that any impact is minimised as far as possible and, in light of this, the following mitigation measures have been considered:

- A dedicated Site Manager will be appointed for the management of the delivery booking system during the construction stage. It will also be this person's duty to make sure haulage companies use the chosen haul route (See **Figure 5.1: Appendix 5A**), without fail.

- Wood Lane is proposed to be widened to a maximum of 4.5m. Vehicles accessing the site during the construction phase are c. 2.5m, leaving sufficient space to cordon off an area for users of the RoW to continue use. Only when the Grid Transformer is being delivered will this road need to be closed temporarily, however this will be for a short period of time, likely no more than 10 minutes. All Bridleways will also be appropriately signed, whilst banksmen will be available when construction vehicles must cross over Bridleways, always without fail. Where there are Bridleway crossings, the construction area will be signed to alert construction vehicle drivers not to cross without a banksman available and priority will be given to any users which are currently using the Bridleways.

- The Applicant will conduct a pre- and post-construction condition survey of Wood Lane that the site is accessed from, from the public road up to the site access point. The Applicant is liable to repair any damage to the road attributed to the construction of the Proposed Development.

- Traffic movements will be limited to 07:00 - 19:00 on Monday to Friday and 08:00 – 16:00 on Saturdays, unless otherwise agreed in writing with the local Council. Deliveries will be scheduled to avoid morning and evening peak hours. This will avoid HGV traffic arriving during the morning peak hours, creating conflict with local residents' commute or school run. Construction personnel will be encouraged to car-pool, or to travel to site in minibuses.

- During the construction phase, clear construction warning signs will be placed on the roads leading to the Proposed Development access point, on the approach and in accordance with Chapter 8 of the Traffic Signs Manual. The site entrance will also be

appropriately signed. Access to the construction site will be controlled by onsite personnel and all visitors will be asked to sign in and out of the site by security/site personnel. Site visitors will receive a suitable Health and Safety site induction and Personal Protective Equipment (PPE) will be worn.

- To control, prevent and minimise dirt on the access route and emissions of dust and other airborne contaminants during the construction works, the following mitigation measures will also be implemented:
  - Wheel washing equipment will be available and used onsite within the construction compound, as required, to prevent the transfer of dirt and stones onto the public highway. All drivers will be required to check that their vehicle is free of dirt, stones and dust prior to departing from the site;
    - Wheel washing facilities will consist of a water bowser with pressure washer.
    - The bowser will contain water only and no other additives.
    - Run-off from this activity will be directed to the drainage situated on the lower boundary of the construction compound.
  - Dampening of site roads to minimise dust emissions;
  - Any soil stockpiles will be covered and / or lightly tracked when left for extended periods of time;
  - Drivers will adopt driving practices that minimise dust generation including a 5m/h internal access road speed limit; and,
  - Any dust generating activities will be avoided or minimised, wherever practical, during windy conditions.
- Once construction of the Proposed Development is completed, all portacabins, machinery and equipment will be removed and hard standing excavated. The area will be regraded with the stockpiled topsoil to a natural profile.

SUMMARY

5.94. This CTMP outlines the overall framework for managing the movement of construction and delivery traffic to and from the Proposed Development, as well as considering the type of traffic it will generate. The traffic assessment for the operational and decommissioning phases were also considered.

5.95. Impacts from the operational phase of the site, consisting of between 10-15 LGVs per year, is not considered to be 'significant' and therefore a full Transport Assessment/Statement is not required. However, elements of the NPPG which are relevant to this project, namely, to include details of the existing conditions and issues relating to the Proposed Development, have been considered in this CTMP.

5.96. Increased volumes of traffic will be generated by the Proposed Development during the construction period. However, the overall volumes of traffic generated are considered to be quite low. During the anticipated six-month construction period, a total of 1054 HGV deliveries will be made to the Application Site. During the peak construction, which will be towards the beginning of the construction period, there will be an approximate maximum of 20 daily HGV deliveries.

5.97. The haulage route will likely be from the M1 to the west of the Application Site. The delivery vehicles will exit the M1 at junction 24, signposted A453 Nottingham (S), onto the A453 and travel in a northeast direction for approximately 4.3km, before taking the exit onto West Leake Lane. This road will be travelled on in a southern direction for approximately 1.5km, before turning left onto Kegworth Road. Vehicles will travel northeast along this road for approximately 1.3km before turning right into Wood Lane where the site is accessed from.

5.98. The site will be accessed from Wood Lane which is a private road which is unadopted. The junction of Kegworth Road and Wood Lane will require widening with a temporary surface area to ensure the largest construction vehicle can access the site. To facilitate this, 11m of hedgerow will need to be realigned. This temporary surface has been extended so that vehicles can wait at the junction as any traffic off Kegworth Road passes it.

5.99. It is noted that Wood Lane is single lane width, however there are passing bays along this. The Applicant will investigate extending the width of any passing bay along Wood Lane, where possible. It is also proposed to extend the whole width of the road up the site entrance point to a maximum of 4.5m. There is space in the existing verge to extend the width of this road with a space of between 5 and 6m between hedgerows. In addition, due to Wood Lane being a Bridleway, there will be a banksman in place at the junction off Kegworth Road for the duration of the construction period. There will also be one in place at the site entrance so that construction vehicles can be managed to mitigate any impact on users of the bridleway.

5.100. Consultation with Highways Development Control confirmed that speed surveys would be required if any reduction in the visibility splay from that of a 60mph road is to be considered. It was noted on the site visit that it was likely that vehicles would be travelling up to the roads

speed limit and therefore the full 210m x 2.4m visibility splay for a 60mph road is required. The Visibility Splay of 210m x 2.4m will be achievable with the realignment of 152m of hedgerow and the trimming of 11m of hedgerow. This is a significant increase on the existing visibility at this junction which is limited when exiting the site and looking in a westerly direction.

5.101. The Applicant will conduct a pre- and post-construction condition survey of Wood Lane that the site is accessed from, from the public road up to the site access point. The Applicant will be liable to repair any damage to the road attributed to the construction of the Proposed Development.

5.102. Wood Lane is proposed to be widened to a maximum of 4.5m. Vehicles accessing the site during the construction phase are c. 2.5m, leaving sufficient space to cordon off an area for users of the RoW to continue use. Only when the Grid Transformer is being delivered will this road need to be closed temporarily, however this will be for a short period of time, likely no more than 10 minutes. All Bridleways will also be appropriately signed, whilst banksmen will be available when construction vehicles must cross over Bridleways, always without fail. Where there are Bridleway crossings, the construction area will be signed to alert construction vehicle drivers not to cross without a banksman available and priority will be given to any users which are currently using the Bridleways.

5.103. The CTMP sets out a variety of specific mitigation measures that will be implemented during construction that will minimise the impact of the construction traffic on the environment and local communities; these include:

- Limitations on working times and HGV scheduling;
- Site security and signage; and,
- Measures to control emissions of dust and other airborne contaminants.

5.104. This Construction Traffic Management Plan conforms to the policies and objectives of the Local Development Plan, adopted by Rushcliffe Borough Council and the Design Manual for Roads and Bridges.

APPENDICES

Appendix 5A - Figures

- Figure 5.1: Proposed Haul Route
- Figure 5.2: Swept Path Analysis
- Figure 5.3: Visibility Splay