

MAELOR WORKS CABLE ROUTE

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

02 December 2024

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Appendix A – Proposed Cable Route
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1. Introduction

1.1.1. This Construction Traffic Management Plan (CTMP) has been prepared by Evoke Transport Planning Consultants Ltd (Evoke) on behalf of Innova Renewables Developments Ltd to produce a Construction Traffic Management Plan to satisfy Condition 9 of the approved planning application for the installation of a High-Voltage Electricity Cable (HVEC) (planning reference: P/2023/0752) to support the approved Cefn Solar Farm (planning reference: P/2021/0676) and the approved Wrexham Solar Farm (planning reference: P/2022/0541). The Local Planning Authority (LPA) and the Local Highway Authority (LHA) are the unitary Wrexham County Borough Council (WCBC).

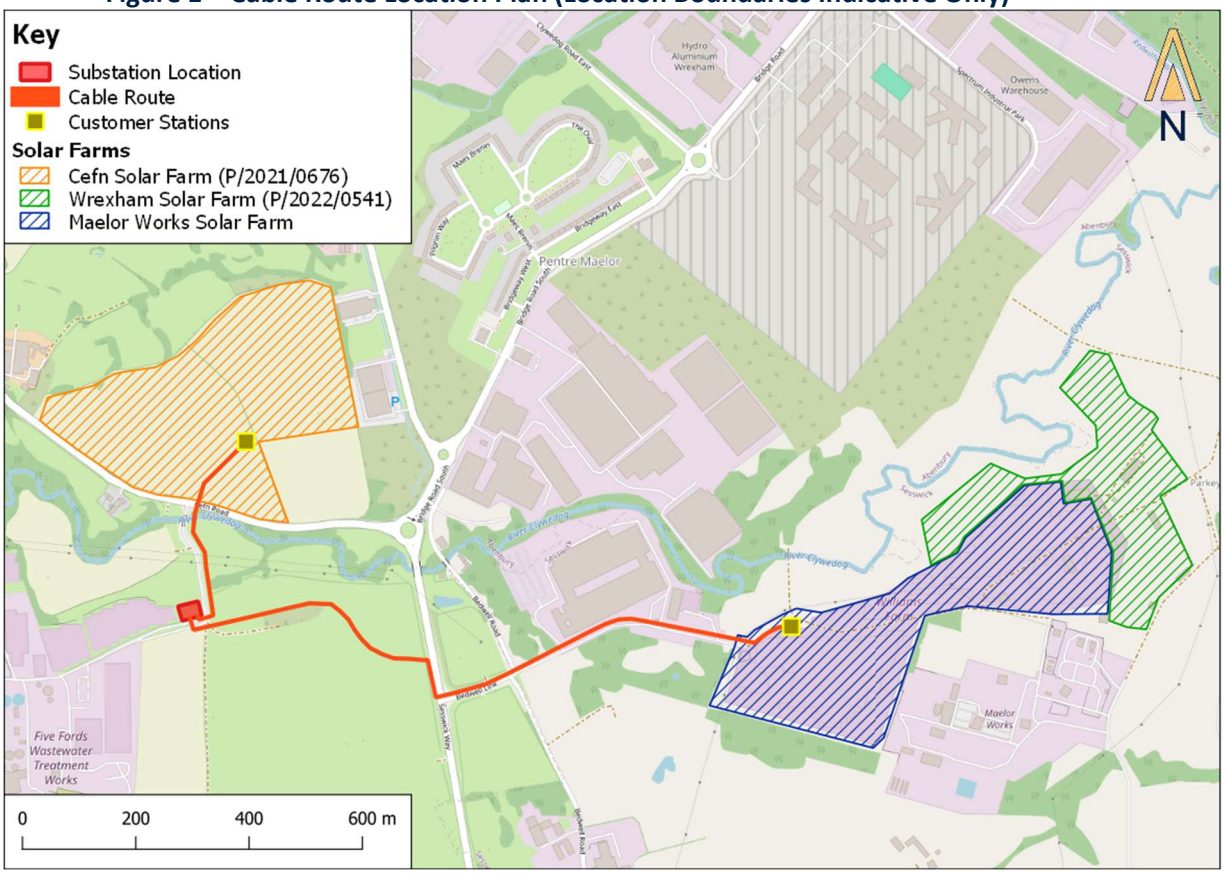
1.2. Development Proposals

1.2.1. The proposed cable route covers two sections running from the substation location:

- The first of these routes runs directly north from the site towards Cefn Road, crossing the River Clywedog. After this, the site crosses Cefn Road into the approved Cefn Solar Farm and connects to one of the customer substations. The route is approximately 380m long.
- The second route runs east from the substation, crossing Public Footway Marchwiel 39 and running between two fields until it reaches Sesswick Way. The route crosses Sesswick Way and runs along the northern side of Bedwell Link to the Maelor Works Solar Farm. The route is approximately 1,200m long.

1.2.2. The routes in relation to the nearby solar farms and the local highway network is shown in Figure 1 below.

Figure 1 – Cable Route Location Plan (Location Boundaries Indicative Only)



Source: QGIS, with basemap data from OpenStreetMap

1.2.3. The proposed route is also attached at **Appendix A.**

1.3. Original Application Documents

1.3.1. The application for the installation of a High-Voltage Electricity Cable (HVEC) (planning reference: P/2023/0752) was accompanied by a series of documents, some of which are referenced in this report. The documents submitted as part of the application are listed below:

- Planning and Design and Access Statement, prepared by Innova Renewables Limited;
- Ecological Appraisal, prepared by Etive Ecology;
- Hedgerow Appraisal, Prepared by Etive Ecology;
- Archaeological Desk-Based Assessment, Wessex Archaeology;
- Wrexham Cable Route Method Statement, prepared by JSM;
- Cable Route Plan; and
- Pre-Application Consultation Document.

1.4. Report Structure

1.4.1. This report sets out a management plan to ensure that the construction works are organised and delivered in a manner that safeguards the highway impact, highway safety, and amenity of the area surrounding the proposed laying of the cable route.

1.4.2. The remainder of this CTMP is structured as follows:

- **Section 2: Construction Details –** Summarises the different phases of work and sets out the construction methodology and working hours.
- **Section 3: Proposed Access and Construction Route –** Provides an appraisal of the highway geometry of the identified construction route, having regard to current design guidance in combination with the volume and type of traffic generated by the proposed development.
- **Section 4: Cable Route Construction –** Details the locations where the cable route crosses Public Rights of Way or parts of the local road network, and details mitigation measures and construction strategies for these locations.
- **Section 5: Measures, Management and Control Processes –** Focuses on the proposals to ensure that a suitable management strategy and structure is in place to control activity on site and to ensure a suitable reporting procedure for local residents and stakeholders**.**
- **Section 6: Environmental Impact Measures –** Identifies how the environmental impacts of the development in relation to transport will be managed and mitigated.
- **Section 7: Construction Travel Plan –** Sets out the Construction Travel Plan measures and the duration of these.
- **Section 8: Summary and Conclusions.**

2. Construction Details

2.1. Introduction

2.1.1. This section outlines the indicative development schedule, construction methodology and the way in which deliveries will be controlled with regard to the local highway network.

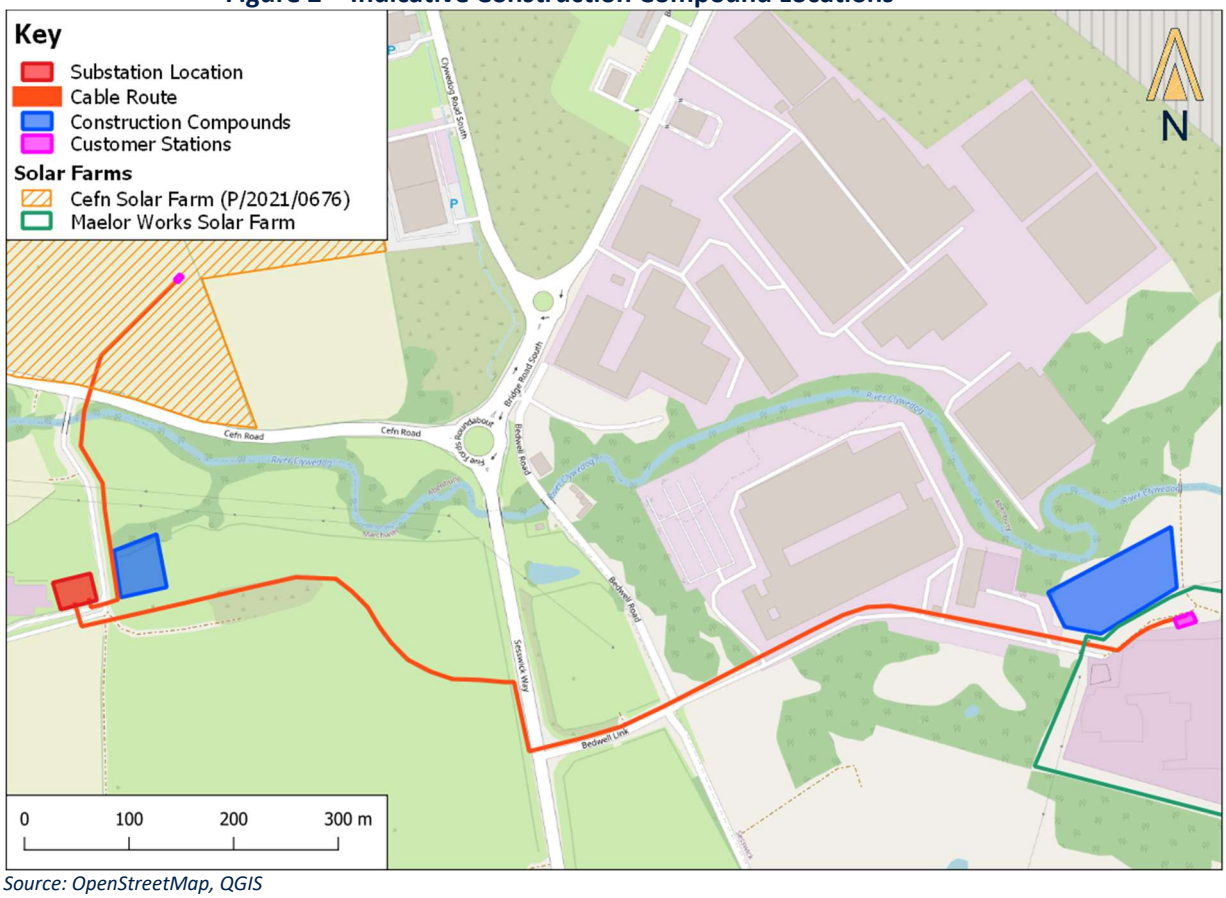
2.2. Development Schedule

2.2.1. The cable route construction is scheduled to start in early-March 2025, subject to successfully discharging the relevant planning conditions, and is scheduled to last for approximately twenty-six weeks with an estimated maximum laying speed of 100m per day. It should be noted however that the construction programme may be subject to change prior to and during construction, due to ground conditions having a significant impact on the timescales and any potential unknown complexities that may arise during the works.

2.3. Construction Compounds

2.3.1. The construction of the cable routing will utilise two construction compounds due to the length of the route, with the primary compound located at the western extent nearest to the substation and one located at the eastern extent next to Maelor Works Solar Farm. The secondary compound in the east is primarily dedicated for construction of the Wrexham Solar Farm, however there is potential to store slow-moving heavy machinery at this compound to reduce the number of slow moving traffic movements on the local road network. The locations of the construction compounds in relation to the site is shown in Figure 2.

Figure 2 – Indicative Construction Compound Locations



Source: OpenStreetMap, QGIS

2.3.2. The construction compounds will be provided within the client's land ownership and will include provision for staff and welfare offices, storage, staff and van parking, wheel washing facilities, and loading and unloading areas.

2.4. Delivery of Plant and Materials

2.4.1. All materials and plant associated with the development process will be stored within the footprint of the construction compounds. The deliveries will primarily be limited to the drilling and digging machinery and the cabling rolls.

2.4.2. A loading and unloading area for plant and materials will be provided. The majority of deliveries will be made via rigid Heavy Goods Vehicles (HGVs) and articulated low loader vehicles, which are also classified as HGVs.

2.4.3. Away from main vehicular route, temporary trackways would be utilised throughout to minimise disruption to the ground conditions during the construction phase.

2.5. Working Hours

2.5.1. All works will be conducted between the hours of 07:30 to 18:00 Monday to Friday and between 09:00 and 14:00 on Saturdays. No construction activities will take place on Sundays or Bank Holiday. Works undertaken outside of these timings will only occur should any electrical shutdowns be required.

2.5.2. To minimise the impact of the construction on the local highway network, deliveries will be restricted during the traditional peak hour periods of 08:00-09:00 and 17:00-18:00, where possible.

2.6. Construction Workers

2.6.1. The construction of the cabling route is anticipated to generate approximately 12-16 full-time staff during the construction period.

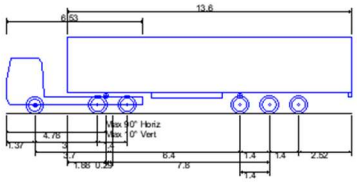
2.7. Construction Vehicle Types

2.7.1. A variety of vehicles will need to access the site during construction. These will include low loaders, articulated vehicles of the maximum legal length, and rigid HGVs delivering the requisite materials (primarily the cable itself). Where feasible all soil will be backfilled on site to minimise the need for materials to be taken off site.

2.7.2. The dimensions of the largest vehicle types are shown in Figure 3 below. There will be no abnormal loads accessing the site.

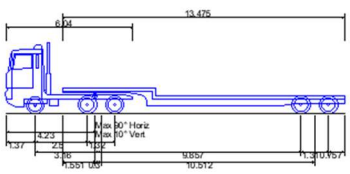
Figure 3 – Construction Vehicle Types

Max Legal Length (UK) Articulated Vehicle (16.5m)



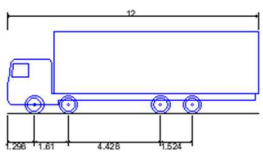
Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

Low Loader



Overall Length	16.154m
Overall Width	2.520m
Overall Body Height	3.393m
Min Body Ground Clearance	0.318m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.990m

Rigid Truck



Overall Length	12.000m
Overall Width	2.500m
Overall Body Height	3.928m
Min Body Ground Clearance	0.412m
Track Width	2.471m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	11.900m

Source: AutoCAD

2.8. Construction Vehicle Numbers

2.8.1. The greatest number of deliveries would comprise deliveries of the digging and drilling machinery which will be delivered in 2-3 HGV deliveries (4-6 movements) and then taken away post construction in a similar number of movements.

2.8.2. The remainder of HGV movements would be the delivery of cable rolls which are usually in 50m sections. As such, approximately 32 rolls will be required for the approximate 1.6km combined cable route with these typically delivered in batches of six by low loaders. As such, the delivery of the cable rolls will likely result in up to 6 HGV deliveries (12 two way movements). It is likely that empty cable drums will be backloaded on delivery vehicles to minimise the number of movements. When considering a worst case scenario, the pick-up of cable drums could result in an additional 6 HGV deliveries (12 two way movements).

2.8.3. As such, as a robust assessment the cable route is likely to result in a total of 36 two way HGV movements (18 inbound and 18 outbound). These movements will be staggered over the 26-week construction programme resulting in approximately 1-2 HGV deliveries per week outside of the initial setup and shutdown periods (2-4 two-way weekly movements).

3. Proposed Access and Construction Route

3.1. Introduction

3.1.1. This section of the report sets out an appraisal of the highway characteristics and geometries along the identified access route along with safety considerations to ensure that vehicles are able to travel safely and efficiently to the cable routes, having due regard to the traffic volumes and vehicle types identified previously.

3.2. Local Highway Network

3.2.1. Access to both construction compounds comes from the Strategic Road Network (SRN) via Sesswick Way, a single carriageway rural road subject to the National Speed Limit and measuring approximately 9.2m in width. Sesswick Way connects to the A525 Bangor Road in the south via the Cross Lanes Roundabout, and to Cefn Road and Bridge Road South in the north via the Five Fords Roundabout.

3.2.2. Cefn Road leads to the primary construction compound in the west. Cefn Road is a single carriageway rural road subject to a 40mph speed restriction and measures approximately 5.8m in width. Cefn Road leads to the access road to the Five Fords Wastewater Treatment Works from which the construction compound is accessed. This access road is subject to a 10mph speed restriction and measures approximately 6.5m in width.

3.2.3. To access the eastern construction compound, vehicles leave Sesswick Way onto Bedwell Link which is a small connecting road between Sesswick Way and Bedwell Road. Bedwell Link is an unclassified road measuring approximately 7.5m in width and leading to Tetra Park Road, a private road continuing west which measures approximately 6.5m in width.

3.3. Proposed Access Points

3.3.1. It is proposed that the primary construction compound would be accessed via an existing farm access which would be used for all deliveries to the site associated with the cabling route. The access is located within the 10mph section of the private access road to the Five Fords Wastewater Treatment Works. Figure 4 below shows the existing arrangements.

Figure 4 – Access to Western Construction Compound



Source: Google Maps

3.3.2. The existing access will be widened to 8.5m in width to allow a low-loader, the largest vehicle expected to require access during the construction process, to access the construction compound and site. The use of banksmen and a delivery booking system will ensure that an HGV is not accessing at the same time as an HGV egressing. To accommodate the widening, existing fencing will need to be temporarily removed. Following the completion of the construction process, the access will be returned to its current width, with the fencing reinstated.

3.3.3. Beyond the access, it is proposed that tracks will be provided a minimum width of 3.0m throughout the compound. The road will be constructed using temporary trackways throughout the construction period to facilitate the movement of construction vehicles.

3.3.4. Further temporary surfacing materials would be utilised throughout the construction period in order to minimise the impact and movement of soil. Away from the main vehicular routes, temporary trackways would be utilised throughout the site to minimise disruption to the ground conditions during the construction phase.

3.3.5. Swept path analysis has been undertaken, attached at **Appendix B**, to show that the largest construction vehicle can enter and exit the proposed access and construction compound.

3.3.6. From the compound the individual rolls of cable will likely be transported to the dig / drilling area by a smaller transit style van.

3.3.7. For works on the cable route taking place to the east of Sesswick Way, the secondary construction compound will be used for storing elements of the cable and construction equipment. The access fronts directly on to the internal road network used by the Maelor Works Solar Farm and will operate in accordance with existing arrangements.

Movement Along Cable Route

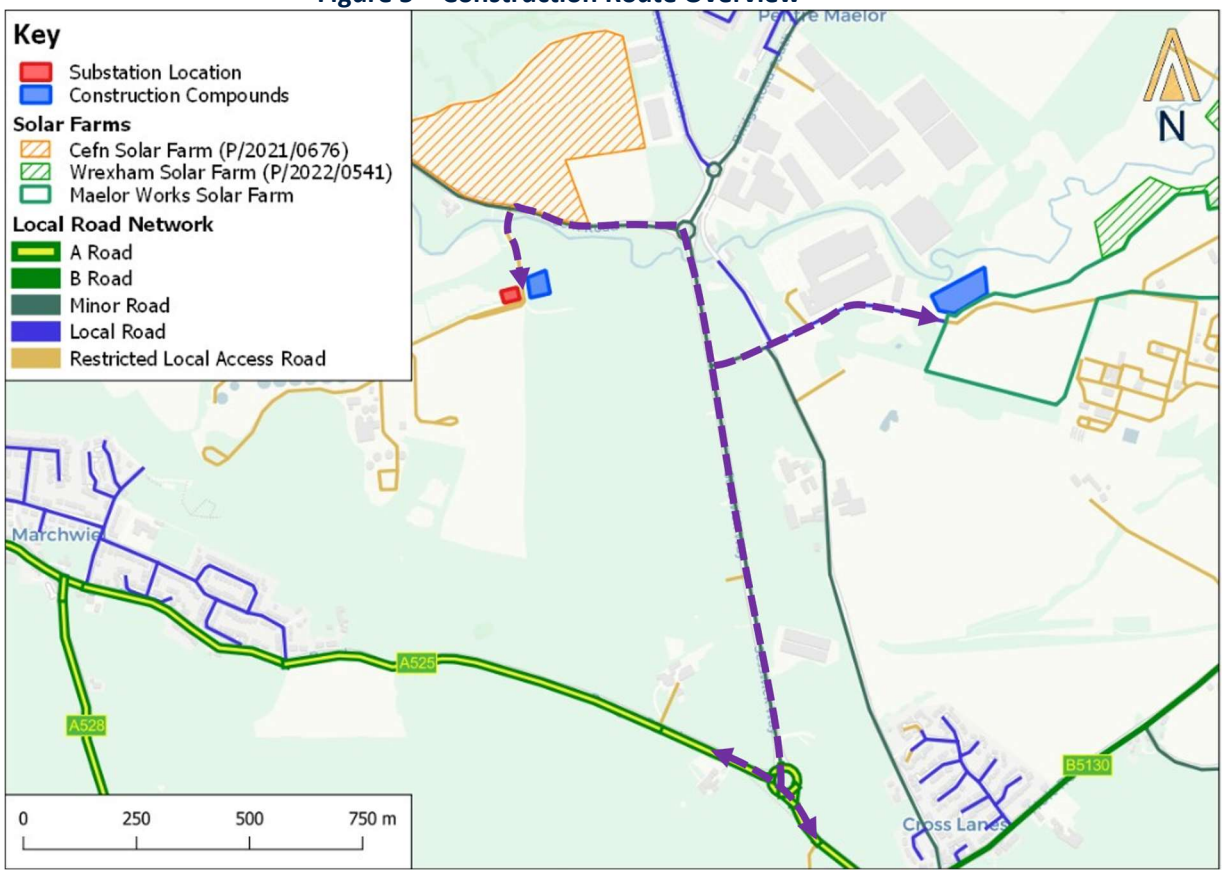
3.3.8. Permeable temporary trackway grids will be used over the ground in all other locations to offer protection to the soil / earth around the site and to limit the movement of debris and mud towards the highway. Together with the provision of wheel washing facilities and routine checks by site personnel, this approach would limit the potential for mud and debris entering the highway throughout the construction period.

3.3.9. A jet wash facility will be provided at connections to the public highway network to clean vehicle wheels before entering the highway, however depending on ground conditions, a more robust system may be required, including road washing daily where required.

3.4. Proposed Construction Vehicle Route

3.4.1. This section of the report outlines the proposed routing strategy to be enforced during the construction of the cable route. Figure 5 identifies the primary construction route for HGVs accessing and egressing both of the construction compounds.

Figure 5 – Construction Route Overview



Source: QGIS, OpenStreetMap, CartoDB

3.4.2. Construction vehicles will use a single route option to access and egress the site. All deliveries to the site during construction will travel on the agreed route from the A525 which comprises travelling along Sesswick Way, before either turning right off Sesswick way to access the eastern, secondary compound or continuing onto Cefn Road and then to the western construction compound. The length of the route to the primary compound is approximately 1.8km. Vehicles routing to the secondary construction compound in the east will turn off from Sesswick way onto Bedwell Link before continuing east to the compound area. The length of this route is approximately 1.45km. Vehicles exiting the site will travel back to the A525 along the same route.

3.4.3. There are no restrictions along the route, separate carriageways are present throughout, and the routes vary between 10mph, 40mph, and National Speed Limit (60mph) sections. The route likely already accommodates a large number of vehicles, including HGVs, due to the presence of nearby industrial estates like Wrexham Industrial Estate to the north. Therefore the route is considered suitable to accommodate the increase in HGV movements associated with the construction of the development.

3.4.4. The proposed routing presents the most sensible option through reducing impact on villages and residents, whilst offering the most direct route to the strategic road network.

3.5. Access Management Measures

3.5.1. Management measures will be implemented to ensure that construction HGVs can access and exit the site safely.

3.5.2. Construction HGVs will be subject to a booking system with fixed arrival times. A banksman will be utilised and situated at the site accesses to assist HGVs in accessing and egressing the site and will only

instruct HGVs to depart the site when the relevant connecting road is clear of traffic in the vicinity of the site accesses, and it is safe to do so.

3.5.3. Temporary signage will be located in the vicinity of the site accesses during the construction period to warn drivers of the site accesses, as shown in Figure 6.

Figure 6 – Temporary Signage at Site Access



3.5.4. Additional signage will advise motorists of HGVs turning at the site accesses as shown in Figure 7.

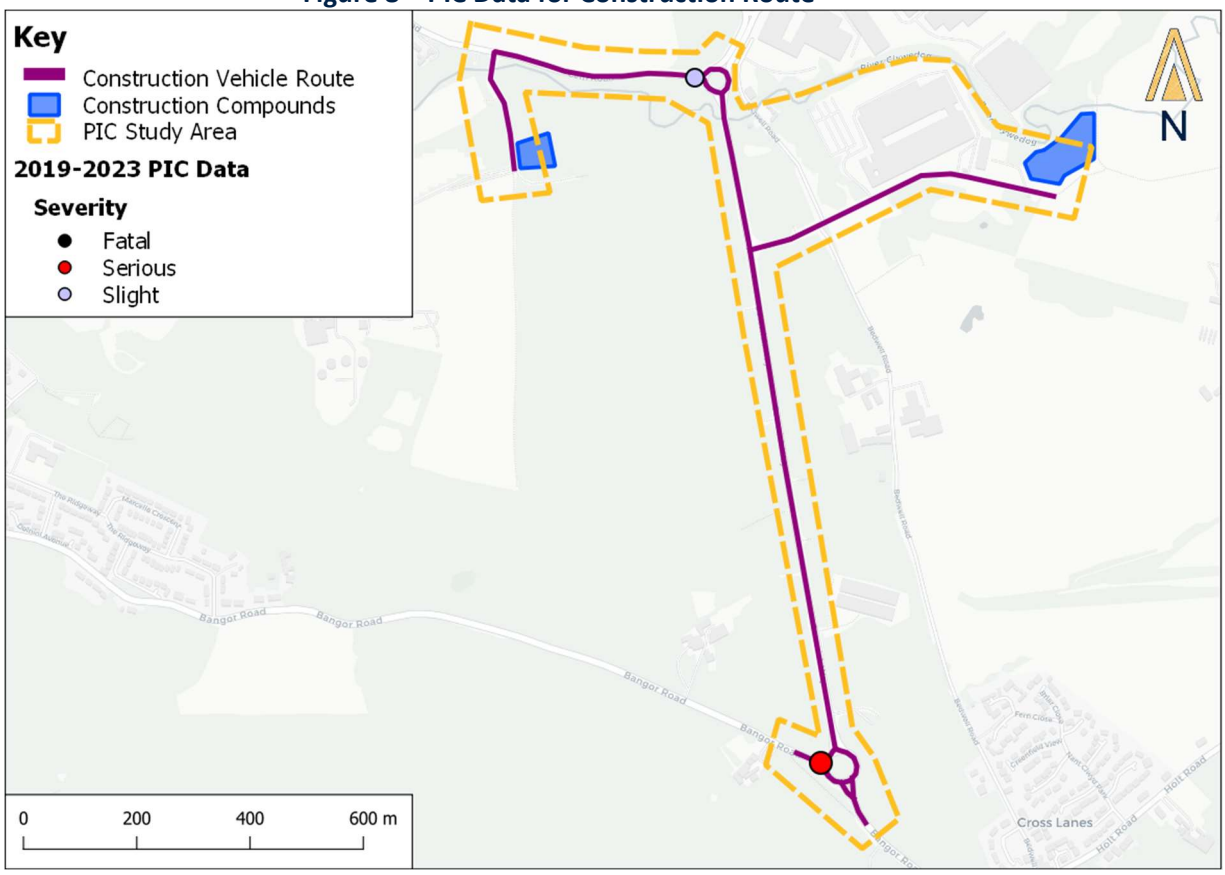
Figure 7 – Temporary Signage along Cefn Road and Sesswick Way



3.6. Highway Safety

3.6.1. An investigation of Personal Injury Collision (PIC) data in the immediate vicinity of the site access has been undertaken using Department for Transport data. PIC incidents between 2019 and 2023 along the proposed construction vehicle route have been analysed, with the results presented in Figure 8.

Figure 8 – PIC Data for Construction Route



Source: QGIS, Department for Transport

3.6.2. As can be seen from the figure, two collisions resulting in injury have been reported on the proposed construction route in the most recently available 5-year dataset.

3.6.3. The incident classified as 'serious' occurred on the 20th of June 2019 at 20:08 in the evening, in daylight and fine conditions. A motorcycle was travelling around the roundabout when it skidded and impacted the offside of a car waiting to enter the roundabout. The rider of the motorcycle received injuries classified as 'serious'.

3.6.4. The other incident occurred on the 13th of September 2020 and involved a lone motorcycle skidding and causing injuries to the rider of the motorcycle.

3.6.5. It is of note that no recorded incidents involved goods vehicles. Whilst any incident is regrettable, due to the sporadic nature and small number of incidents that have occurred over this large stretch of road in the most recently available 5-year period, it can be concluded that there are no existing road safety issues present in the vicinity of the site or along the primary route for construction vehicles that may be exacerbated by an increase in HGV traffic generated by the site.

4. Cable Route Construction

4.1. Introduction

4.1.1. Along the cable route are a number of transport-related obstacles for which the methodology of dealing with is laid out in this chapter.

4.2. General Construction Methodology

4.2.1. As was discussed in the Method Statement submitted by JSM as part of the application for the cable route, the following methodology will be used when constructing the vast majority of the cable routes, which has been confirmed has by the appointed contractor, OCU:

- OCU to provide Full Barrier/ Heras Fencing and Signage;
- Operatives will be NRSWA/EUSR accredited and trained;
- Scan inside and outside of working Area with CAT and Genny;
- Mark out identified utilities inside and outside of the excavated area with waterproof spray;
- Excavate as per HSG 47 to expose all existing utilities present;
- Installation of ducts/ pipes to be installed as per DNO/IDNO approved specification design;
- Joint bays to be excavated along the route with approved TWD;
- Ducts will be tested and cleaned before cable installation;
- Cables to be installed from joint bay to joint bay;
- Cables to be sheaf/continuity tested then jointed;
- OCU Close board TW drawings to be used when installing shuttering along the trench;
- Back Fill and Reinstate to approved design/HAUC specification; and
- Clear Site.

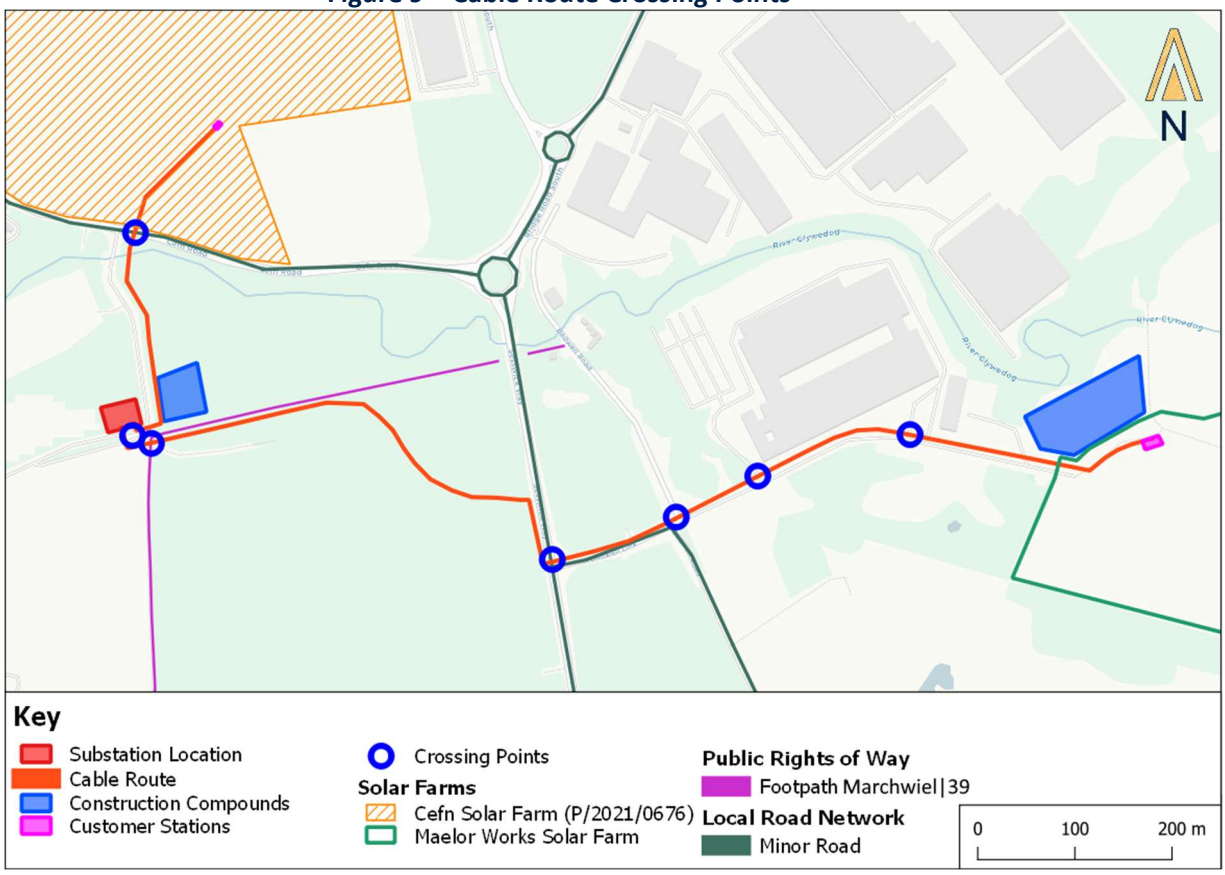
4.2.2. Furthermore, details are provided for dealing with any sections involving level changes:

- “The works [will] be undertaken with the traditional open cut method [to] achieve the minimum depth cover throughout the entirety of the route. The minimum depth of the apparatus to be achieved will be inclusive of the ducted preformed bends, used for construction taking into account the change in the ground levels. This will be achieved with a wide tracked excavator to negotiate the gradients of the ground level changes.”

4.3. Cable Route Crossing Points

4.3.1. There are a number of locations where the proposed cable routes intersect with either Public Rights of Way (PRoWs) or roads. One of these locations crosses a PRoW and the remaining six involve crossing either private or public roads. These locations are highlighted in Figure 10.

Figure 9 – Cable Route Crossing Points



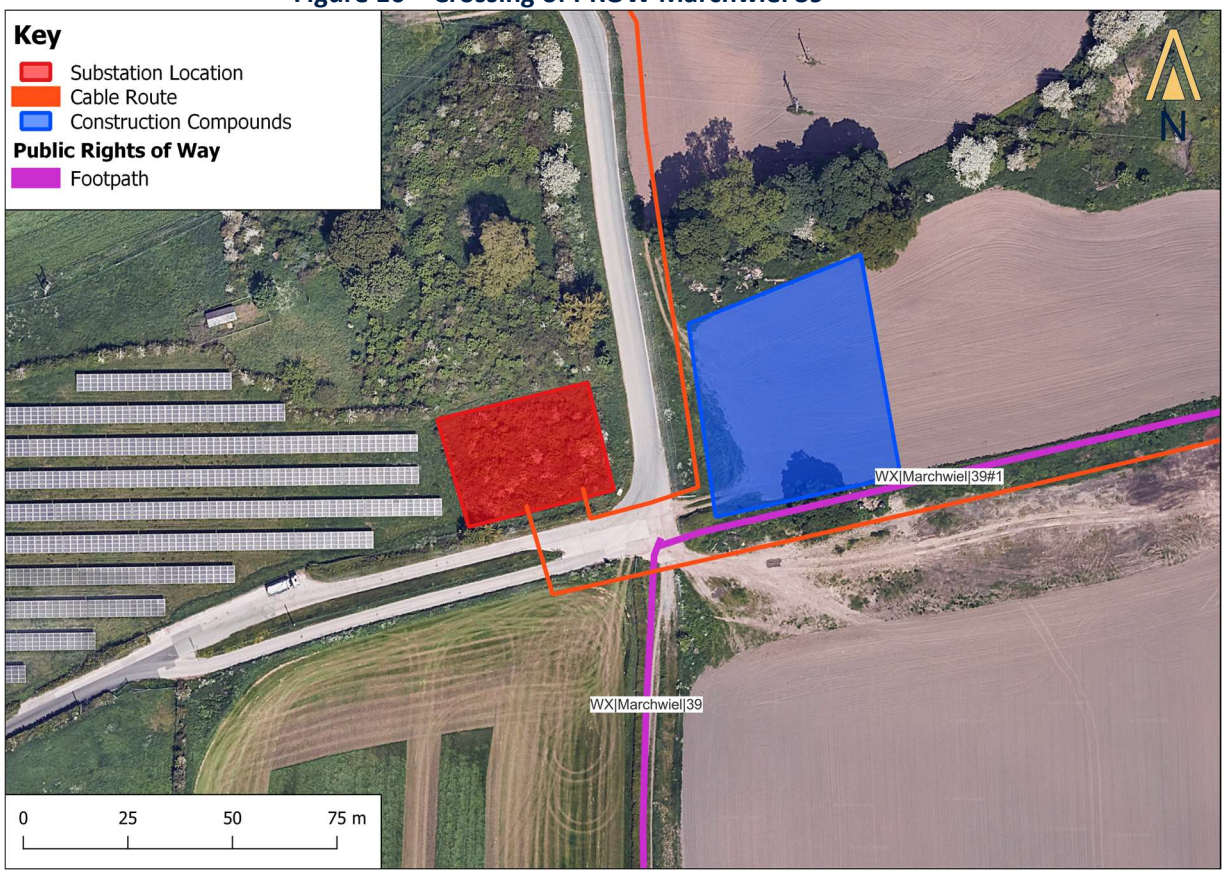
Source: QGIS, OpenStreetMap, CartoDB

4.3.2. The proposed measures for crossing these points are detailed below.

Measures for Crossing Public Footway Marchwiel 39

4.3.3. The only PRoW crossing is located approximately 10m from the proposed substation location and involves the eastern cable route crossing Public Footpath Marchwiel 39 before running parallel to the PRoW. The location of the crossing point in relation to the substation location and the PRoW itself is shown in Figure 10.

Figure 10 – Crossing of PROW Marchwiel 39



Source: QGIS and Google Maps

4.3.4. As a result, a temporary closure of the right of way will be sought when the date is known. This application will be for the minimum closure time of five days, and will involve the application for a Temporary Full Order under Section 14(1).

4.3.5. Signage will be erected along the route to advise of the closure and fencing will be erected on either side of the closure to ensure pedestrians do not cross the route. Following the route closure the applicant will remove all diversion route signage.

4.3.6. Public Footpath Marchwiel 39#1 (which will be temporary isolated by the closure) does not lead to any dwellings, buildings, or other paths and therefore the temporary closure is anticipated to have a minimal impact on existing users. Furthermore, pedestrian access via the northern access road to Cefn Road will be maintained to provide pedestrians with a through-route. Appropriate measures, including signage and fencing will be installed along the route to ensure pedestrian safety.

Measures for Road Crossings

4.3.7. Six sections of the route require the crossing of roads; the site access road to the west, Cefn Road, Sesswick Way, Bedwell Road, and two access points to Mainetti House (the large recycling centre adjacent to Maelor Works Solar Farm). These six locations are shown in Figure 11.

Figure 11 – Road Crossing Locations



Source: QGIS and Bing Maps

4.3.8. To lay the cable route under the roads, cut and fill will be used to cross the stretches of carriages which vary in width from approximately 6.0m to 10.0m. It is proposed that the cable will be laid in two phases, with half of the carriageway drilled and completed, before beginning the next half. This will ensure that the whole section of carriageway does not need to be completely closed. Instead, half of the carriageway will be closed, resulting in one-way vehicle movements only.

4.3.9. Temporary traffic lights will be installed to manage the flow of movements along each road. It is considered that the works along each stretch of carriageway could be completed within 2-3 days and therefore the construction is considered to have a minimal impact on the local highway network.

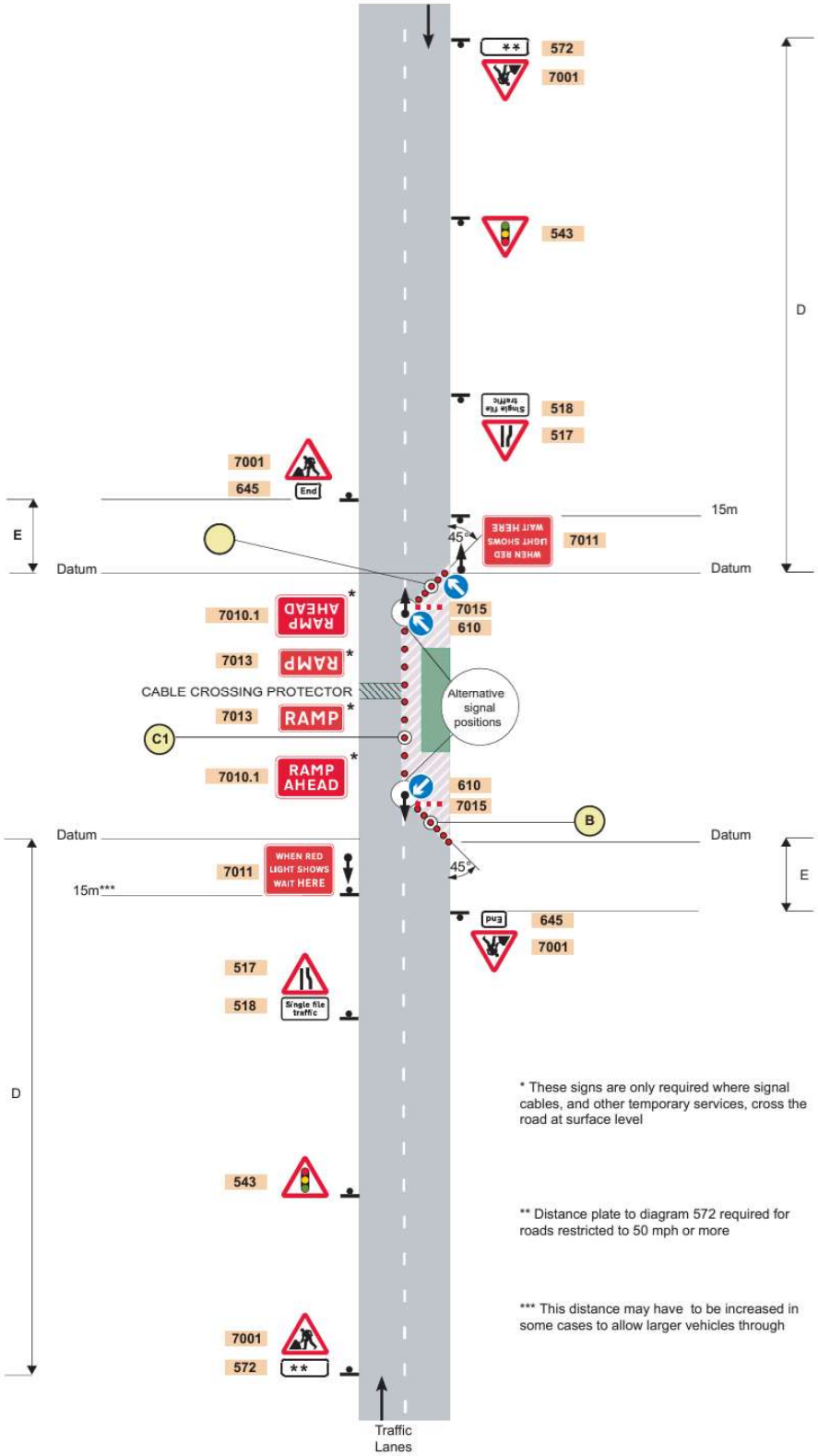
4.3.10. WCBC will be alerted in advance of these works, with the relevant Streetworks / Section 50 licenses obtained. Signage and traffic lights will be in place to alert road users of the work occurring along the road. The relevant license costs will be paid by the applicant with the 28 day minimum notice period adhered to.

4.3.11. All roadworks will be listed on the https://one.network/ portal to ensure that local residents are aware of the minor delays in advance.

4.3.12. It is likely that the temporary signals and signage will be laid out in accordance with Plan SC7 of the Traffic Signs Manual reproduced below in Figure 12, with the closure reversed to the other side following the first section works being completed.

Figure 12 – Temporary Traffic Signals to be put in place

Plan SC7: Portable traffic signals on a two-lane single carriageway road



Source: Traffic Signs Manual

4.4. Summary

4.4.1. Whilst the cable route crosses a number of PRoWs and roads, it has been established that the crossing of these can be undertaken safely and effectively with minimal closures of key roads or public rights of way, reducing the impact on the local highway network and public rights of way network. The proposed mitigation measures aim to ensure the safety of workers and the public.

5. Measures, Management and Control Processes

5.1. Introduction

5.1.1. This section of the report sets out the measures, management structure and control processes that will be put in place to implement, monitor and manage the CTMP. The Site Manager will be responsible for the works which will ensure that the control processes are efficiently communicated and implemented.

5.2. Transport Co-ordination

5.2.1. The Applicant will appoint a Site Manager for the project, with their details provided to WCBC once confirmed. It is likely that this role will be undertaken by the wider Site Manager for the solar farm. The Site Manager for the project will undertake the transport co-ordination role for the site. In this respect, their main responsibilities will include:

- Managing the implementation of the CTMP;
- Vehicle scheduling;
- Checking for scheduled road works on the http://roadworks.org;
- Checking for scheduled refuse collections with WCBC;
- Handling any complaints; and
- Acting as a point of contact for employees, contractors and the general public.

5.2.2. The Site Manager will ensure that there is adequate liaison between the following key stakeholders throughout the construction period:

- The contractor;
- The applicant;
- Other local stakeholders such as emergency services or local transport providers; and
- WCBC.

5.2.3. Regular review meetings and telecommunications will be held between the Site Manager and WCBC if requested. It is envisaged that update meetings / telecommunications will be held on an ad-hoc basis as required. Furthermore, the Site Manager will provide any monitoring data, delivery schedules, complaints or breaches of agreements to WCBC if requested.

5.3. Booking System

5.3.1. On a daily basis the Site Manager will evaluate details of the daily profile of deliveries proposed for the upcoming day. Through discussions with hauliers the Site Manager will, as far as practical, ensure that deliveries are spread out across the week and the day to minimise any potential disruption.

5.3.2. The proposed deliveries will be checked against the daily delivery schedule. This will be overseen by the Site Manager to ensure that construction deliveries are managed in an efficient manner with minimal disruption and delays.

5.3.3. The proposed construction compound will provide a waiting area for HGVs. Hauliers will be required to contact the Site Manager to give a delivery time to ensure that the delivery space and banksmen (if required) are ready for their arrival on site.

5.3.4. Upon arrival at the site, construction HGV's will route toward the construction compound, banksmen will radio to the compound to check that an HGV is not currently navigating the egress. Once cleared to enter, the HGV will navigate the access road to the compound.

5.3.5. Where possible sufficient time will be given between deliveries to allow for any delays as a result of the delivery vehicle getting stuck in traffic or loading / unloading taking longer than expected to avoid any vehicles waiting.

5.3.6. The Applicant will provide banksmen to assist with the manoeuvring of delivery vehicles into and out of the construction compound, as well as any internal movements throughout the application site.

5.3.7. Where possible, all deliveries by goods vehicles (>3.5 tonnes) will be undertaken outside of the highway peaks of 08:00-09:00hrs and 17:00-18:00hrs. All vehicles ready to depart the site during these periods shall be held back within the compound area until the appropriate time has passed. Any vehicle on-route and likely to arrive during the restricted period will be required to park in the nearest lay-by or service station, until the restricted period has passed, drivers legal driving hours permitting.

5.4. Route Compliance

5.4.1. Use of agreed vehicle route or routes shall be included as a contractual requirement with the Contractor and will be communicated to all drivers accessing the Application Site. This will include information on the times of operation, delivery routes and the vehicle booking system.

5.5. Site Fencing

5.5.1. In areas close to the public highway or public rights of way a security fence will be constructed around the area of the cable route due to be dug prior to digging works taking place. The fencing of the site will protect members of the public from the ongoing digging works as well as preventing unauthorised personnel accessing the site.

5.5.2. Mandatory safety signage will be displayed for construction staff entering the site along with contact details for the Site Manager. The fencing will be kept clean and tidy at all times.

5.6. Communication Strategy

5.6.1. As identified above, the Site Manager will be responsible for ensuring that there is adequate liaison between all stakeholders and WCBC throughout the construction period.

5.6.2. As part of the wider construction communication strategy the contractor shall inform relevant stakeholders and residents along the cable route who might be affected by the construction , including by vehicle movements arising from the construction activities. In addition to this, a notice will be placed at the main site entrance informing the neighbours of the hours of work.

5.7. Complaints Procedure

5.7.1. Whilst the Site Manager will use reasonable endeavours to ensure that site neighbours are informed of the construction programme and potential impacts, it remains possible that complaints may be raised by the site's neighbours. The Site Manager will therefore be available to meet and explore issues with concerned neighbours directly via appointment.

5.7.2. Complaints shall be taken seriously and addressed immediately by the construction team. All complaints that are received will be reviewed in weekly site meetings to ensure that any required actions are communicated to all employees.

5.7.3. The Site Managers contact details will be provided to WCBC prior to work commencing on site. Contact details for the Site Manager will also be displayed at the site entrance.

6. Environmental Impact Measures

6.1. Context

6.1.1. It is important that construction impacts in relation to issues that may arise along the local highway network, as well as increases in vehicle emissions and waste as result of the proposed scheme are addressed. Suitable mitigation measures aimed at reducing these impacts with specific regard to transport are identified below.

6.2. Air Pollution, Dust and Dirt Control

6.2.1. During the work, the main air pollution emissions are the dust and fumes from machinery. The contractors will use high pressure hoses to saturate all bulk materials with water during the process, and whilst loading the waste materials for disposal. Machinery exhaust emissions will be kept as low as is practical by using well maintained vehicles and machinery at all times.

6.2.2. The three main potential sources of air pollution emissions during construction works are:

- use of compressors;
- generators; and
- portable petrol cut off saws.

6.2.3. All machinery will be switched off when not in use to minimise emissions as well as noise. Any portable petrol cut off saws will be operated with an automatic water applicator, which is designed to dampen any arising debris and dust as well as reduce the wear of the blade. Use of cut off saws without water attachments will not be tolerated under any circumstances.

6.2.4. In order to prevent smoke emission, burning of materials on site will not be permitted.

6.2.5. Mud and debris on the road are regarded as one of the main environmental nuisances and safety problems that arise from construction sites. A wheel washing facility will be provided for the duration of the construction works in order to ensure minimised/mitigated levels of mud and debris on roadways near the site. The wheel washing facilities will be in the form of a jet wash facility located adjacent to both access points. All vehicle wheels will be cleaned whenever a vehicle leaves the site.

6.2.6. In order to prevent any accumulation of dust and dirt, the contractor will ensure that the area around the application site, including the public highway, is regularly and adequately swept.

6.3. Noise Control

6.3.1. Noise generated by the construction process will be considered, alongside its impact on neighbouring properties and the respective, relevant mitigations.

6.3.2. Suitable mitigation measures to be used include:

- Working within standard construction hours;
- Use of quieter alternative methods or mechanical plant, where reasonably practical;
- Locating plant, equipment, site offices, storage areas and worksites away from neighbouring properties where practical;
- Machines and equipment in intermitted use will be shut down or throttled down to a minimum when not in use; and,
- Maintaining and operating all vehicles, plant and equipment in an appropriate manner, to ensure that extraneous noise from mechanical vibration, creaking and squeaking is kept to a minimum.

6.4. Fuel Consumption

6.4.1. The appointed Construction Contractor will strive to procure local contractors for the project, thereby minimising transport costs and impact on the local environment.

6.4.2. The use of the booking system for deliveries will also help to ensure that the construction site is serviced in an efficient manner which will help to minimise the number of vehicle movements that would be generated. A further measure that will be employed is encouraging all delivery vehicles to switch off engines as they are waiting at the site, thereby preventing unnecessarily idling vehicles.

6.5. Waste Management

6.5.1. In order to seek to reduce the number of HGV trips generated, any limited aggregates generated on site will be re-used wherever practical and soil will be backfilled following the laying of the cable.

6.5.2. All waste materials will be collected and stored in suitable receptacles before they are taken off site. Waste materials will not be allowed to accumulate because of fire/vermin risk. The waste will be separated into recycling types and general waste in designated general waste, refuse and recycling stores. Whenever deliveries are undertaken, banksmen will be used to ensure that materials are transferred into the site as soon as possible to ensure that no dirt or rubbish is left on the public highway.

6.6. Vehicle Emissions Impact Reduction

6.6.1. The Department for Transport (DfT) have published guidance relating to efficient use of freight on the network. 'Review of Low Carbon Technologies for Heavy Goods Vehicles' (2009) set out a number of HGV technologies with potential for reducing carbon emissions. Within this DfT report assessments are conducted of a number of vehicle technologies and driver behavioural styles which could be associated with reducing the environmental impact of HGVs.

6.6.2. It is likely that these measures have been incorporated into the vehicle fleet in order to reduce the environmental impact of generated traffic. Such measures include:

- Aerodynamic improvements to trailers – reduce the aerodynamic drag of the vehicle;
- Spray reduction mud flaps – reduces spray and provides aerodynamic benefits;
- Low rolling resistance tyres – can reduce CO2 emissions by up to 5%;
- Automatic tyre pressure adjustment – automatically monitors and adjusts tyre pressures which could provide CO2 reductions of around 7-8%;
- Predictive cruise control – improves fuel efficiency of vehicles; and
- SAFED Driver Training Scheme – aims at improving accident prevention and reduction, as well as improved fuel consumption.

6.6.3. Moreover, in order to minimise the environmental impacts of HGV trips generated by the development, the following measures are to also be promoted;

- Initiate a weekly booking system for the delivery of plant and materials to the site;
- The Applicant will strive to procure local contractors for the project, thereby minimising transport costs and impact on the local environment;
- All delivery vehicles will be required to switch off their engines as they are waiting at the site, thereby preventing unnecessarily idling vehicles;
- Use of the agreed vehicle route shall be included as a contractual requirement for the Contractor and will be communicated to all individuals associated with the works;
- Provision of wheel washing facilities at the application site entrance / egress in order to minimise dirt and dust build-up and subsequent pollution.

7. Construction Travel Plan

7.1. Introduction

7.1.1. A Travel Plan (TP) is a package of measures aimed at promoting greener, cleaner travel choices and reducing the reliance on the private car. It enables employers to reduce the impact of travel on the environment, whilst also bringing a number of other benefits to the organisation and its employees.

7.1.2. This chapter seeks to address activities related to the construction of the application site which includes commuter journeys for construction workers, material supplies, and deliveries. By successfully addressing the different types of travel, and by promoting travel via sustainable modes, as well as sourcing labour and goods locally, the TP's objectives can be achieved.

7.2. Access by Sustainable Transport

7.2.1. The contractor, where feasible, will seek to recruit construction workers from the local area. This will help maximise the potential for construction workers to travel to the site sustainably and reduce total journey distances by car. There are approximately 1,800 people living within a 25-minute walk of the site (the generally accepted maximum comfortable walking distance) and approximately 28,000 people living within a 15-minute cycle of the site.

7.2.2. The construction site will provide facilities in accordance with requirements set out in HSE guidelines. As such the application site will provide a drying room, storage facilities, toilets and offices. This will support people travelling to the site by sustainable modes whilst having the added benefit of reducing the number of trips made off site during lunch breaks.

Railway Stations

7.2.3. The nearest railway stations are Wrexham Central Railway Station and Wrexham General Railway Station, which are located approximated 4.5-5.0km west of the site (a 20-minute cycle).

7.2.4. Given the distances to the railway stations it is unlikely that rail would provide a suitable mode of transport to the site unless combined with bus or car-sharing. Should there be significant demand for travel to and from the station than the Site Manager will consider pooling staff on to a shared taxi shuttle service.

Car Sharing

7.2.5. Car sharing represents a convenient form of travel, offering a significant potential to reduce overall private mileage of construction workers and visitors. This mode of transport forms one of the most convenient methods of sustainable travel for construction workers.

7.2.6. The Site Manager will determine construction staff willingness to car share. Furthermore, looking at workers home postal addresses, or address of local hotels, it would become evident whether there are any area groupings of people that would make the principle of car sharing a reasonable prospect of being successful. The Site Manager will then investigate setting up a database of construction workers willing to car share journeys, including information such as their home addresses and working hours.

7.2.7. The Site Manager would promote car-sharing scheme throughout the construction program. The Site Manager would also make construction workers aware of existing car sharing schemes such as https://liftshare.com/uk.

7.2.8. Furthermore, the Site Manager will explore the potential to organise minibus travel for the employees if it is found that it would be feasible to transport employees to or from similar areas.

7.3. Measures

7.3.1. There is potential for construction workers to travel to site by sustainable modes such as walking, cycling and public transport. There is also great potential for construction workers to car share or travel by minibus / shared taxi to the application site. Therefore, it is deemed appropriate to promote the local services available as well as the following the measures, in order to promote sustainable travel by construction staff:

- Provide changing and storage facilities for construction staff;
- Assist in matching car sharers;
- Assist in the potential provision of the taxis / minibus to transport staff from hotels / lodgings or to the station;
- Coordinate contractors start and end times to promote car sharing / public transport use and to reduce trips generated.

8. Summary and Conclusion

8.1.1. Evoke Transport Planning Consultants Ltd (Evoke) has been commissioned by Innova Renewable Developments Ltd to produce a Construction Traffic Management Plan to satisfy Condition 9 of the approved planning application for the installation of a High-Voltage Electricity Cable (HVEC) (planning reference: P/2023/0752) to support the approved Cefn Solar Farm and the approved Wrexham Solar Farm.

8.1.2. The proposed construction is scheduled to last for approximately 26 weeks with an estimated laying speed of up to 100m per day.

8.1.3. This document has demonstrated the anticipated construction programme and traffic strategy for the construction and laying of the cable route. Any substantial changes in the build program and / or number of vehicular movements will be communicated to the local planning and highway authority in advance of construction.

8.1.4. The applicant estimates that the application site will require approximately 12-16 staff on site during the construction period. The Travel Plan section seeks to minimise travel by single occupancy vehicles and promote the opportunity to car share.

8.1.5. The proposed routing strategy is considered the most sensible option through reducing impact on villages and residents, whilst offering the most direct route to the strategic road network.

8.1.6. All materials and plant associated with the development process will be stored within the temporary construction compounds.

8.1.7. The Site Manager will evaluate details of the daily profile of deliveries proposed. Through discussions with hauliers the Site Manager will ensure that any deliveries for both the solar farms and cable route are spread out across the week and day to minimise any potential disruption. All deliveries will then be met by a member of staff who will assist vehicles entering, exiting and manoeuvring around the site.

8.1.8. The construction process will be managed by the appointed Site Manager employed by the contractor. The Site Manager's responsibilities will include acting as a point of contact for the local authority, stakeholders and members of the public. Further to this, the Site Manager will also be responsible for delivery scheduling, construction route compliance and managing other contractors employed on-site.

8.1.9. To further control the environmental impacts of the proposed development, measures to be employed include covering any materials being on or off site, wheel washing facilities, mitigation measures for noise, employing local contractors and the implementation of a waste management strategy.

8.1.10. The scale and volume of vehicle movements associated with the cable route laying is not significant. Based on the levels and appraisal herein, there are not considered to be any significant impacts on the operation of the local highway network.

8.1.11. Overall, it is considered that the measures and control processes outlined in this report are appropriate and will ensure that the proposals do not lead to a severe impact on the local highway network.

Appendix A – Proposed Cable Route

Maelor

Wilkinson
Business Park

Apex Centre

PV Array 2

PV Array 1

Little
Llwyn Onn

Glanrafon
Cottage

Substation
Area

Drain

Drain

PD

Wrexham Industrial Estate

Depot

Linden House

Ystad Ddiwydiannol Wrecsam
/ Wrexham Industrial Estate

Pum-Rhyd
Mill Cottage

Pipeline

Cyfnfan Five Fords /
Five Fords Roundabout

FB

FB

HM Pris

Track

Drain

Pum-rhyd

Parkey
Farm

Maelor
Abattoir

0 m 100 m 200 m 300 m 400 m 500 m

Scale Bar
1: 5000

KEY:

- Substation Location
- Planning Application Boundary
- Planned Cable Routes
- Customer Stations

novus

DATE:	14/12/2022
PROJECT TITLE:	Cefn Park & Wrexham PV
DRAWING TITLE:	Cable Route Constraints Plan
DRAWING VERSION NUMBER:	Final
SCALE:	1:5000
PAGE SIZE:	A3
DRAWN BY:	AS
APPROVED BY:	SM

Appendix B – Swept Path Analysis



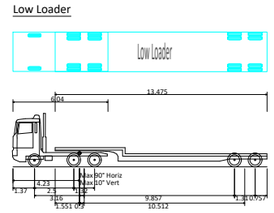


NOTES

1. DO NOT SCALE FROM THIS DRAWING. WORK FROM FIGURED DIMENSIONS ONLY.
2. EVOKE TRANSPORT PLANNING CONSULTANTS LIMITED ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF THIRD PARTY INFORMATION - THIS MUST BE TREATED AS INDICATIVE ONLY.

VEHICLE PROFILE

Low Loader



Overall Length	16.154m
Overall Width	2.520m
Overall Body Height	3.393m
Min Body Ground Clearance	0.318m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.990m

VEHICLE TRACKING KEY

- BODY OUTLINE FORWARD MANOEUVRE
- BODY OUTLINE REVERSE MANOEUVRE
- CHASSIS OUTLINE FORWARD MANOEUVRE
- CHASSIS OUTLINE REVERSE MANOEUVRE

Rev	Amendment	Drn	App	Date
-	Initial Drawing	TW	OH	24.10.24

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Project Name: MAELOR WORKS, WREXHAM

Drawing Title: LOW LOADER ACCESS AND EGRESS SWEPT PATH ANALYSIS

Client: INNOVA RENEWABLES DEVELOPMENTS LIMITED

Drawn by	Approved by	Date
TW	OH	24.10.24

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