



# **Construction Traffic Management Plan**

Penpergwm Solar Farm

21/01/2022





## Disclaimer

*Neo Environmental Limited shall have no liability for any loss, damage, injury, claim, expense, cost or other consequence arising as a result of use or reliance upon any information contained in or omitted from this document.*

Copyright © 2022

Neo Environmental Ltd	
<p>Head Office - Glasgow:  Wright Business Centre,  1 Lonmay Road,  Glasgow.  G33 4EL  T 0141 773 6262  E: <a href="mailto:info@neo-environmental.co.uk">info@neo-environmental.co.uk</a></p>	
<p>Warrington Office:  Cinnamon House,  Crab Lane,  Warrington,  WA2 0XP.  T: 01925 661 716  E: <a href="mailto:info@neo-environmental.co.uk">info@neo-environmental.co.uk</a></p>	<p>Rugby Office:  Valiant Suites,  Lumonics House, Valley Drive,  Swift Valley, Rugby,  Warwickshire, CV21 1TQ.  T: 01788 297012  E: <a href="mailto:info@neo-environmental.co.uk">info@neo-environmental.co.uk</a></p>
<p>Ireland Office:  Johnstown Business Centre,  Johnstown House,  Naas,  Co. Kildare.  T: 00 353 (0)45 844250  E: <a href="mailto:info@neo-environmental.ie">info@neo-environmental.ie</a></p>	<p>Northern Ireland Office:  83-85 Bridge Street,  Ballymena,  Northern Ireland,  BT42 5EN.  T: 0282 565 04 13  E: <a href="mailto:info@neo-environmental.co.uk">info@neo-environmental.co.uk</a></p>



## Prepared For:


Great House Energy Centre Ltd



## Prepared By:

Michael McGhee BSc TechIOA



	Name	Date
Edited By:	Michael McGhee	21/01/2022
Checked By:	Nicole Beckett	21/01/2022
	Name	Signature
Approved By	Paul Neary	



## Contents

1. EXECUTIVE SUMMARY.....	6
2. INTRODUCTION .....	8
3. LEGISLATION .....	12
4. TRAFFIC ROUTE IDENTIFICATION AND ASSESSMENT .....	15
5. CONSTRUCTION TRAFFIC MANAGEMENT .....	20
6. MITIGATION.....	26
7. CONCLUSION .....	28
8. APPENDICES .....	29
9. BIBLIOGRAPHY .....	30
10. GLOSSARY .....	31







# 1. EXECUTIVE SUMMARY

- 1.1. This Construction Traffic Management Plan (CTMP) outlines the overall framework for managing the movement of construction and delivery traffic to and from the proposed Penpergwm Solar Farm, as well as considering the type of traffic it will generate. Traffic generation during the operational and decommissioning phases is also considered.
- 1.2. Impacts from the operational phase of the site will only consist of between 10-15 Light Goods Vehicles (LGVs) per year. Most of the impacts will be during the short-term construction phase and therefore a CTMP would be more appropriate than undertaking a full Transport Assessment (TA). This CTMP considers elements of TAN18: Transport which are relevant to this project, namely, to include details of the existing conditions and issues relating to the Proposed Development.
- 1.3. Increased volumes of traffic will be generated by the Proposed Development during the construction period. However, these will be quite low overall. During the anticipated six-month construction period, a total of 711 Heavy Goods Vehicle (HGV) deliveries will be made to the Application Site. During the peak construction period there will be an approximate maximum of 15 daily HGV deliveries.
- 1.4. Delivery vehicles will travel along the A40 which is located to the west and south of the Application Site and exit onto The B4598. They will travel along this road, for approximately 4km before turning left at Penpergwm onto the local access road which serves the Proposed development. The access point is approximately 0.7km along this local access road.
- 1.5. The junction between the B4598 and site entrance **has an 'Unsuitable for HGVs' sign which is in relation to HGVs travelling on the** local road from this junction. Although this road is narrow, the section of road up to the site access point is suitable for HGV use, it is only beyond this point that the road becomes unsuitable. The sign is advisory only and it is likely that the main reason it is there is due to the beforementioned unsuitable turn. That being said, additional traffic management measures will be in place for the 800m stretch of road between the junction with the B4598 and the site access point.
- 1.6. An Automatic Traffic Count (ATC) survey took place on the local road at the site entrance, on the 28th November 2020 and was left in place for one week. The 70m x 2.4m visibility splays which were required are achievable with the realignment of 58.1m of hedgerow, as well as the trimming back of 50.5m of hedgerow.



- 1.7. Initial swept path analysis suggests the existing entrance point will need to be widened to approximately 14m, in order to facilitate the construction vehicles and 10.6m of hedgerow will need to be removed.
- 1.8. A dedicated and suitably qualified person will be appointed for the management of the delivery booking system during the construction stage. Temporary construction gates will be in place to stop vehicles passing over the Public Right of Way (PRoW)/Other Routes with Public Access (**ORPA's**) freely and a banksman will be required to make sure there are no members of the public in the vicinity when vehicles are passing through.
- 1.9. This 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.
- 1.10. This CTMP conforms to the policies and objectives of the Monmouthshire County Council Local Plan and **'Future Wales: The National Plan 2040'**.



## 2. INTRODUCTION

### BACKGROUND

- 2.1. Neo Environmental Ltd has been appointed by Great House Energy Centre Ltd **(the "Applicant")** to undertake a CTMP for a proposed solar farm and associated infrastructure **(the "Proposed Development")** on land circa 0.5km north of Penpergwm and c. 3.9km southeast of Abergavenny, Monmouthshire **(the "Application Site")**.
- 2.2. Please see Figure 4 of the Planning Application Drawings for the layout of the Proposed Development.

### DEVELOPMENT DESCRIPTION

- 2.3. The Proposed Development consists of the construction of a 37MW solar farm and will comprise PV panels mounted on metal frames, inverters and transformer units, new access tracks, underground cabling, perimeter fencing with CCTV cameras and access gates, a temporary construction compound and all ancillary grid infrastructure and associated works.

### SITE DESCRIPTION

- 2.4. The Application Site is located on land 0.5km north of Penpergwm and c. 3.9km southeast of Abergavenny, Monmouthshire; the approximate centre point of which is Grid Reference E332954, N211435. Comprising 14 agricultural fields, the Application Site measures 70.17 hectares (ha) in total with only c. 31.4 hectares of the landscape under the solar arrays themselves.
- 2.5. Land within the Application Site itself is undulating, ranging between 61 – 140m Above Ordnance Datum (AOD) and consists of fields typically of medium scale, bound by a mixture of grassy field margins, semi-mature hedgerows, and intermittent trees (see Figure 3 of the planning drawings for field numbers).
- 2.6. The Application Site is in an area with existing electricity infrastructure with a pylon line crossing Field 3 to the north and running in a north – south direction between Fields 6 and 7 and to the west of Field 8.



- 2.7. The local area is largely agricultural in nature, punctuated by individual properties and farmsteads; the nearest residential areas are the villages of Penpergwm and The Bryn; located 0.5km and 0.9km north respectively. Recreational Routes include two PRoWs which pass through Fields 8, 9, 10 and 11 in the southern section of the site and an ORPA which passes from Great House along the eastern boundary of Field 14 and through the treeline on the southern border of Fields 5, 6 and 7. Another PRoW passes along the northern boundary of Fields 1, 3 and 4.
- 2.8. While there are a number of drains and watercourses throughout the Application Site, including a small tributary of the Ffrwd Brook bordering Field 11, the site is entirely contained within Flood Zone A, an area described as having a "*Low probability*" of flooding.
- 2.9. The Application Site will be accessed via an improved farm access situated on the southern boundary. Traffic will approach the site entrance from the south using a local road from Penpergwm for approximately 800m. Traffic will be routed to Penpergwm from the north via the B4598. This road connects to the strategic road network south of Abergavenny at the A40 / A465 interchange.

## SCOPE OF THE ASSESSMENT

- 2.10. The purpose of this CTMP 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 impacts of traffic during the operation and decommissioning periods are also assessed.
- 2.11. This CTMP will provide details of:
- Traffic route identification and assessment;
  - Swept path analysis; and
  - Construction traffic management procedures.
- 2.12. This report is supported by the following appendices:
- Appendix A: Figures
    - Figure 1: Proposed Haul Route
    - Figure 2: Swept Path Analysis
    - Figure 3: Visibility Splay



– Figure 4: Bridleway Crossings Plan

## STATEMENT OF AUTHORITY

- 2.13. This CTMP 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 CTMPs across the UK and Ireland, as well as more detailed transport statements for major developments.

## CONSULTATION

- 2.14. A pre-application response was received from Monmouthshire Council (the “Council”) on the 5<sup>th</sup> August 2020. With regards to transport, the response stated:

***“Highway Impact Policy MV1 required development to have an acceptable impact on the existing highway network. The Highway Officer attended the pre-application and provided verbal comments, but the written comments have not yet been received. They will be forwarded to the agent on receipt. In summary, the main concerns were in relation to traffic movement in commissioning and decommissioning the site. There was concern regarding the proposed access via a rural lane which is narrow and may not be suitable in its current form to accommodate the level of traffic and type of vehicles required to commission the site. It is recommended that additional information is submitted in respect of the traffic impact of the implementation of the development and how this will be managed to prevent an adverse impact on the local road network. It must also include details of the number and type of vehicles requires and any works required to improve the access road to facilitate commissioning of the site. Traffic implications of the decommissioning will also be required to demonstrate that reinstatement of the land is possible without adversely affecting the local highway network and, therefore, the impact is reversible. It is advisable that additional information is provided and a follow up pre-application meeting held to address the highway impacts in more detail. The impact in terms of the highway impact cannot be determined at this stage”.***

- 2.15. The Highways Officer, Mark Davies, provided his feedback on the 23<sup>rd</sup> November 2020 and stated:



***"I have no comments to make, the access and CTMP referenced in the EIAs statement is fine, we would not require any further information / details to support a development of this scale".***

- 2.16. The original plan was for the construction traffic to access site from the north; however, this proposal was subsequently changed and therefore Mr Davies was reconsulted to ascertain his views on the new route which would come from Penpergwm from the south, he stated:

***"I would agree and actively encourage anything that can be done to prevent overuse of the immediate local network with construction vehicles.***

***I would not offer objection to utilising an existing field access that reduces the distance construction vehicles travel on the local network from the junction with the B4596".***

- 2.17. In addition, Mr Davies provided the following feedback on the application on the 15<sup>th</sup> December 2021:

***"Highways would be looking for the following to support the application in addition to a transport statement/assessment that may not be that necessary a robust and detailed construction traffic management plan that addresses not just the construction phase that would have the most impact but the on-going maintenance and potential de-commissioning etc".***

- 2.18. This supports the decision to provide a robust CTMP, which also includes details on the operational and decommissioning stages, rather than providing a Transport Statement and a CTMP.



### 3. LEGISLATION

3.1. Future Wales – the National Plan 2040 (NP) is the national development framework, setting the direction for development in Wales to 2040 (Wales Government, 2021). It provides a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities.

3.2. Policy 18 (Renewable and Low Carbon Energy Developments of National Significance) states that proposals for renewable and low carbon energy projects (including repowering) qualifying as Developments of National Significance (DNSs) will be permitted subject to Policy 17 (which is not related to transport) and the following criteria:

***"there are no unacceptable adverse impacts on the transport network through the transportation of components or source fuels during its construction and/or ongoing operation".***

3.3. This CTMP will provide measures which limit any unacceptable adverse impacts on the transport network. Due to the location of the site and the nature of the works, some local impacts are likely to be unavoidable during the short construction period, however mitigation measures will be presented to limit these as far as possible.

### PLANNING POLICY WALES (PPW): EDITION 11

3.4. Planning Policy Wales (PPW) Edition 11 was adopted by the Welsh Government in February 2021 (Wales Government, 2021). This replaced the previously adopted PPW and sets out the land use planning policy for Wales. Chapter 5 of the PPW outlines the planning policy in relation to 'Renewable and Low Carbon Energy'. With regards to transport, it states:

***"Planning authorities should also identify and require suitable ways to avoid, mitigate or compensate adverse impacts of renewable and low carbon energy development. The construction, operation, decommissioning, remediation and aftercare of proposals should take into account:***

- the capacity of, and effects on the transportation network"***



- 3.5. It also goes on to state, in Chapter 4 'Active and Social Places', that *"Planning applications for developments, including changes of use, falling into the categories identified in TAN 18: Transport must be accompanied by a Transport Assessment"*. The Proposed Development type isn't outlined in Tan 18, and it is felt that due to the limited number of operational movements associated with the project, a Transport Assessment is not required. All of the potential transport impacts will be during the short-term construction phase and therefore a CTMP is more appropriate. This CTMP will consider elements of TAN18 which are relevant to this project, namely to include details of the existing conditions and issues relating to the Proposed Development (Wales Government, 2007).
- 3.6. TAN 18 also outlines standard visibility splay dimensions. This is outlined in Table A of Annex B which can be viewed in Table 1.

Table 1: Table A from Annex B of TAN 18

Where road traffic speed known: (85th percentile wet weather)						
Observed traffic speed (kph)	120	100	85	70	60	50
(mph)	75	62	53	44	37	30
SSD (metres)	295	215	160	120	90	70

## REVIEW OF DEVELOPMENT PLAN POLICY

### Monmouthshire County Council Adopted Local Plan 2011 - 2021

- 3.7. The Monmouthshire County Council Adopted Local Plan (2011 – 2021) (LP) was adopted by the Council in February 2014 and sets out the vision and objectives for the development and use of land in Monmouthshire, together with the policies and proposals to implement them over a 10 year period to 2021 (Monmouthshire County Council, 2011). Policies relevant to the Proposed Development include:

#### Policy MV1 – Proposed Developments and Highway Considerations

*All planning applications for developments which are likely to have a significant impact on trip generation and travel demand must, as appropriate, be accompanied by a Transport Assessment that includes a*



*Transport Implementation Strategy for the development detailing the measures proposed to improve access by public transport, walking and cycling and reduce the number and impacts of car journeys associated with the proposal.*

*Development that is likely to create significant and unacceptable additional traffic growth in relation to the capacity of the existing road network and / or fails to provide a safe and easy access for road users will not be permitted, unless appropriate proposals for related improvements to the highway system or a contribution towards mitigating traffic management / reduction measures are made.*

*Where appropriate, development proposals will be expected to satisfy:*

- a) the adopted highway design guide; and*
- b) the adopted parking guidelines.*

*In town centres, if the parking provision cannot reasonably be achieved on-site, then suitable alternative provision should be made”.*

#### Policy MV3 – Public Rights of Way

*Development that would obstruct or adversely affect a public right of way will not be permitted unless satisfactory provision is made which maintains the convenience, safety and visual amenity offered by the original right of way and this will be reflected in the layout and conditions / obligations on any permission granted.*

*Proposals to improve or create public rights of way will be permitted where they add to the utility and enjoyment of the network, including providing missing links in otherwise continuous routes, upgrading paths to bridleways or enhancing the green infrastructure network, provided they give rise to no unacceptable amenity or environmental impacts and comply with legislative requirements. Such proposals should be designed with the convenience, safety and visual amenity of users in mind and should also take into account the needs of those with limited mobility, the impact on the adjoining rights of way network and connectivity of that network.*

- 3.8. The LP also states: **“PPW (Chapter 8 Transport) and TAN 18 set out clear statements of national planning policy in relation to traffic management, development control considerations, transport assessments, travel plans and access to development and should be referred to accordingly”**, and these documents have both been considered within this plan.



## 4. TRAFFIC ROUTE IDENTIFICATION AND ASSESSMENT

- 4.1. The CTMP, including the chosen delivery route, 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

- 4.2. The Application Site will be accessed from the local road which runs north from Penpergwm. The speed limit on local rural roads such as these is 60mph as there are no repeater signs or street lighting. However, it was observed that vehicles are highly likely to travel at speeds lower than the statutory speed limit near the site entrance, as there is a sharp bend on the road nearby with limited visibility. This section of road, at the site entrance, contains no carriageway markings and is approximately 3.5 metres wide. There are no pedestrian facilities along this section of road and the carriageway is in good condition.
- 4.3. An ATC survey took place on the local road at the site entrance, on the 28th November 2020 and was left in place for one week. This was to collect real time data to determine the speed of road users. The survey concluded that the 85<sup>th</sup> percentile speed along this road averaged 33.6mph eastbound and 32.2mph westbound. Using SSD calculations, this equates **to a required visibility splay dimension of 60m in the 'y' direction** and 2.4m **in the 'x' direction**. TAN18 however sets out visibility dimensions based on the 85-percentile speed and this suggests that a 'y' direction of 70m is required. The 70m x 2.4m visibility splays are achievable with the realignment of 58.1m of hedgerow, as well as the trimming back of 50.5m of hedgerow, see Figure 3: Appendix A.
- 4.4. Initial swept path analysis suggests the existing entrance point will need to be widened to facilitate the construction vehicles. Figure 2: Appendix A shows the revised access point where there will need to be 10.6m of hedgerow removed.
- 4.5. The Applicant will conduct a pre- and post-construction condition survey of the local road from the access point to its junction with the B4598, (see Figure 1: Appendix A), with the Applicant liable to repair any damage to



the road that can be directly attributed to the construction of the Proposed Development.

## INTERNAL SITE TRACKS

- 4.6. 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.
- 4.7. Tracks will measure 4m wide, however, this will be increased 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 drawing Figure 6 of the Planning Application Drawings.
- 4.8. Load bearing crane hardstanding areas with a high load bearing capacity will be required during construction to support cranes as they lift the transformers from the delivery vehicles. The site tracks can be used for this purpose, with some localised widening where required.
- 4.9. 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.
- 4.10. 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

- 4.11. 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 site.
- 4.12. Delivery vehicles will travel along the A40, located to the west and south of the Application Site and exit onto The B4598. They will travel along this



road, for approximately 4km before turning left at Penpergwm onto the local access road which serves the Proposed Development. The access point is approximately 0.7km along this local access road.

- 4.13. The junction between the B4598 and local road **has an 'Unsuitable for HGVs' sign which is in relation to HGVs travelling on the** local road from this junction. Although the road is narrow, the section of road up to the site access point is suitable for HGV use. There is a turn on the road, in between the proposed site access point and the road which leads up to Great House Farm, which is very narrow and the alignment would make it unsuitable for HGVs. The sign is advisory only and it is likely that the main reason it is there is due to the beforementioned unsuitable turn. That being said, additional traffic management measures will be in place for the 800m stretch of road between the junction with the A40 and the site access point. This is likely to be in the form of a banksmen-controlled entry and exit from the site, or temporary traffic lights. This will be agreed prior to the construction stage of the Proposed Development with Monmouthshire County Council's **Highways team**.
- 4.14. A map showing the proposed local access route is presented in Figure 1: Appendix A.
- 4.15. Autotrack analysis was carried out at a junction on the haul route for a 16.5m articulated vehicle representing the largest vehicle that will be used to access the Application Site for the Proposed Development (Figure 2: Appendix A).

## ROUTE ASSESSMENT

- 4.16. 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.
- 4.17. As per the specifications provided, the most onerous loads for the purpose of the swept path are the deliveries of the modules and mounting systems. As part of the swept path analysis, the following vehicle was used:
- UK Max Length Articulated Vehicle of 16.5m in total length
- 4.18. The exact dimensions of this vehicle and turning details can be found on the drawing in Figures 2: Appendix A.
- 4.19. The analysis was conducted using Ordnance Survey (OS) mapping data.



- 4.20. 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.
- 4.21. The load bearing capacity of any bridges or structures has not been measured. As the Proposed Development will not require abnormal roads, any bridges on the main transport network should be capable of carrying all the transport loads. As there will be no abnormal roads, the consultation point regarding the protection of bridges, culverts and other structures will not apply.
- 4.22. 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 planning condition attached to any grant of planning permission.
- 4.23. Table 2 provides a brief commentary of the route analysis at specific points on the haul route. These points can also be viewed on Figure 2 Appendix A.

Table 2: Route Analysis

Ref	Manoeuvre Required	Analysis	Required Action	Swept Path Drawings
1	Vehicles will need to take a left-hand turn from the local access road into the site entrance point.	The redesigned access point has been designed so that the largest construction vehicles can access the site.	Small section of hedgerow will need to be removed	Figure 2 of Appendix A

## SUMMARY OF ENABLING WORKS

- 4.24. As the proposal includes an upgraded access point (see Figure 2 Appendix A), enabling work will be required for access into the Application Site. This will include top soil strip and land clearing as well as the removal of 10.6m of hedgerow. Design details of the access track can be found in drawing Figure 6 of the Planning Application Drawings.



- 4.25. The 70m x 2.4m visibility splays are achievable the realignment of 58.1m of hedgerow, as well as the trimming back of 50.5m, see Figure 3: Appendix A).



## 5. CONSTRUCTION TRAFFIC MANAGEMENT

### CONSTRUCTION PROGRAMME

- 5.1. 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 first few weeks of construction, reducing in numbers towards the final weeks. Car/van movements are expected to be fairly constant throughout.
- 5.2. Table 3 shows the estimated amount of deliveries and movements for the main infrastructure.

Table 3: Estimates HGV Deliveries for construction equipment and infrastructure

TRANSPORT	ESTIMATED NUMBER OF VEHICLES	MOVEMENTS
Delivery of Mounting Frames	75	150
Delivery of Modules	140	280
Delivery of Inverters/Transformers/Grid	25	50
Delivery of Cables	30	60
Delivery of Plant Equipment	25	50
Delivery of Gravel Hard Core Material	396	792
Delivery of Fencing	20	40
Total	711	1422

- 5.3. 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 711



HGV deliveries over the six-month construction period. A daily maximum of approximately 15 HGV deliveries (30 HGV movements) is anticipated.

- 5.4. 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

- 5.5. 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 construction deliveries are managed in an efficient manner, with minimal disruptions or delays.
- 5.6. It is proposed that temporary signage would be used to highlight the entrance to the 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.
- 5.7. 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.
- 5.8. To avoid any vehicles idling, sufficient time will be provided between deliveries to allow for any delays (such as loading/unloading taking longer than expected).
- 5.9. Deliveries will be managed and scheduled to ensure that no vehicles would have to wait on the surrounding road network.

## TIMING RESTRICTIONS

- 5.10. 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. No deliveries will be made on Sundays or Public Holidays. 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 Applicant retrospectively notifies the Council of such works within 24 hours of their occurrence.



- 5.11. 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

- 5.12. A temporary construction compound (see Figure 7 of the Planning Application Drawings) will be required during the construction phase of the Proposed Development. The proposed location of the compound is shown on the submitted planning drawings and consists of an area of approximately 4000m<sup>2</sup> in size, in an abnormal shape. The compound 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

- 5.13. It is forecast that there will be a maximum of 80 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 80 staff vehicles (estimated maximum at 40 per day at peak construction periods) are expected to arrive on site each day. Labour vehicle sharing will be actively encouraged to reduce vehicular movements.



- 5.14. Upon entrance/exit to and from the site, workers vehicles will report directly to the area of hard standing at the temporary site construction compound near the site entrance (see Figure 7 of the 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.
- 5.15. 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

- 5.16. The construction compound has been designed to provide adequate space for vehicle manoeuvring and turning, and all HGV deliveries will report here for unloading (see Figure 7 of the Planning Application Drawings). The turning area will ensure that all vehicles will ingress and egress in a forward gear to maintain safety on the public highway.
- 5.17. The haulage vehicles transporting the site transformers will be required to access the final installation locations. There are turning areas installed at each location whilst the internal access track follows a circular route around the three site areas and therefore these vehicles have two different options available to them so as to ensure they will exit in a forward gear onto the public highway.

## SITE SECURITY

- 5.18. 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.
- 5.19. Access to the construction site during construction hours will be controlled by personnel located at the site entrance. 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 AND PUBLIC RIGHT OF WAYS (PRoW)

- 5.20. Two Public Rights of Way (PRoW), and an Other Route with Public Access (ORPA) are found in the southern part of the site. Part of PRoW 368/55/1 passes through Fields 8 and 9 to the south connecting Great House with the access to farmsteads to the south. Part of PRoW 368/56/1 passes through Fields 10 and 11 in the south eastern part of the site connecting Great House with the minor road on the south eastern site boundary. The ORPA passes from Great House between Fields 7 and 9 and through the treeline on the southern border of Fields 5, 6 and 7.
- 5.21. Recreational routes are also located close to the Application Site, PRoW 368/182/1 passes along the northern boundary of Fields 1, 3 and 4. PRoW 368/10/1 and, 368/11/1 pass with c. 0.2km of Great House and eastern Fields 4 and 10, providing recreational connectivity north of the Application Site.
- 5.22. These will all remain open during the construction period; however, some sections will need to be closed for short periods of time as vehicles pass through them. At these points, there will be construction gates which will be closed unless a vehicle is required to access them and a banksman will make sure that there are no members of the public on the PRoW/ORPA before opening the construction gates and allowing the traffic to pass through. Figure 4: Appendix A shows a plan of how this gate system will work.

## OPERATIONAL PERIOD

- 5.23. 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 be the same as the one used for the construction period.

## DECOMMISSIONING PERIOD

- 5.24. 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 711 movements, the decommissioning phase will have a total of circa 782 movements (estimate includes a 10% increase on the construction stage). This increase is still not considered to be significant in spite of the 10% increase from the construction stage.



## 6. MITIGATION

6.1. The effects of the Proposed Development would be temporary in nature and associated solely with the construction and decommissioning phases. 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 1: Appendix A), without fail.
- Temporary construction gates (see Figure 4: Appendix A) will be **in place to stop vehicles passing over the PRoW/ORPA's freely and a** banksman will be required to make sure there are no members of the public in the vicinity when vehicles are passing through.
- The Applicant will conduct a pre- and post-construction condition survey of the local road from the access point to its junction with the B4598, with the Applicant liable to repair any damage to the road attributed to the construction of the Proposed Development.
- Traffic movements will be limited to 07:00 - 18:00 on Monday to Friday and 08:00 – 16:00 on Saturdays, unless otherwise agreed in writing with the Council. No traffic movements will occur on Sundays or public holidays. 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 local access road leading to the Proposed Development access, as well as on the B4598 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 5mph 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.



## 7. CONCLUSION

- 7.1. This CTMP outlined 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.
- 7.2. Impacts from the operational phase of the site will only consist of between 10-15 Light Goods Vehicles (LGVs) per year. Most of the impacts will be during the short-term construction phase and therefore a CTMP was considered more appropriate than undertaking a full Transport Assessment (TA).
- 7.3. Increased volumes of traffic will be generated by the Proposed Development during the construction period. However, these will be quite low overall. During the anticipated six-month construction period, a total of 711 Heavy Goods Vehicle (HGV) deliveries will be made to the Application Site. During the peak construction period there will be an approximate maximum of 15 daily HGV deliveries.
- 7.4. 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. However, this increase will only be in the region of 10% and is still not considered to be significant.
- 7.5. A variety of specific mitigation measures have been set out 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.
- 7.6. This CTMP conforms to the policies and objectives of the Monmouthshire County Council Local Plan and 'Future Wales: The National Plan 2040'.



## 8. APPENDICES

### APPENDIX A - FIGURES

Figure 1: Proposed Haul Route

Figure 2: Swept Path Analysis

Figure 3: Visibility Splay

Figure 4: Bridleway Crossings Plan





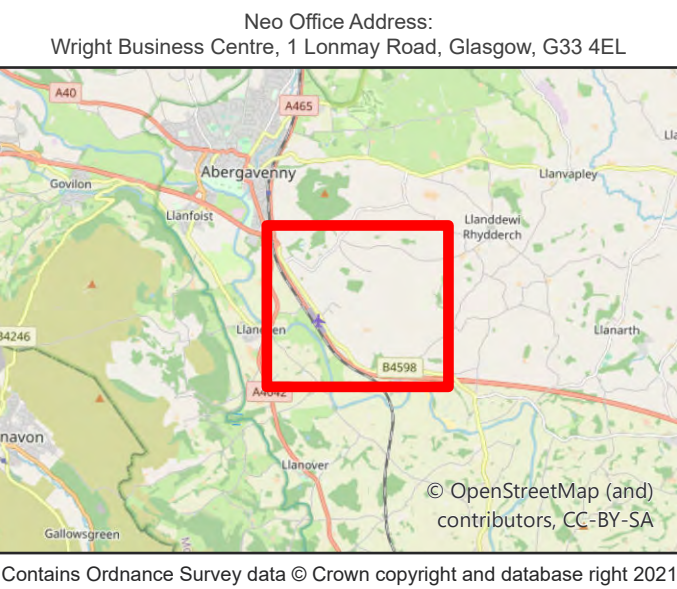
## **Appendix A: Figures**





# Penpergwm Solar Farm Proposed Haul Route Figure 1

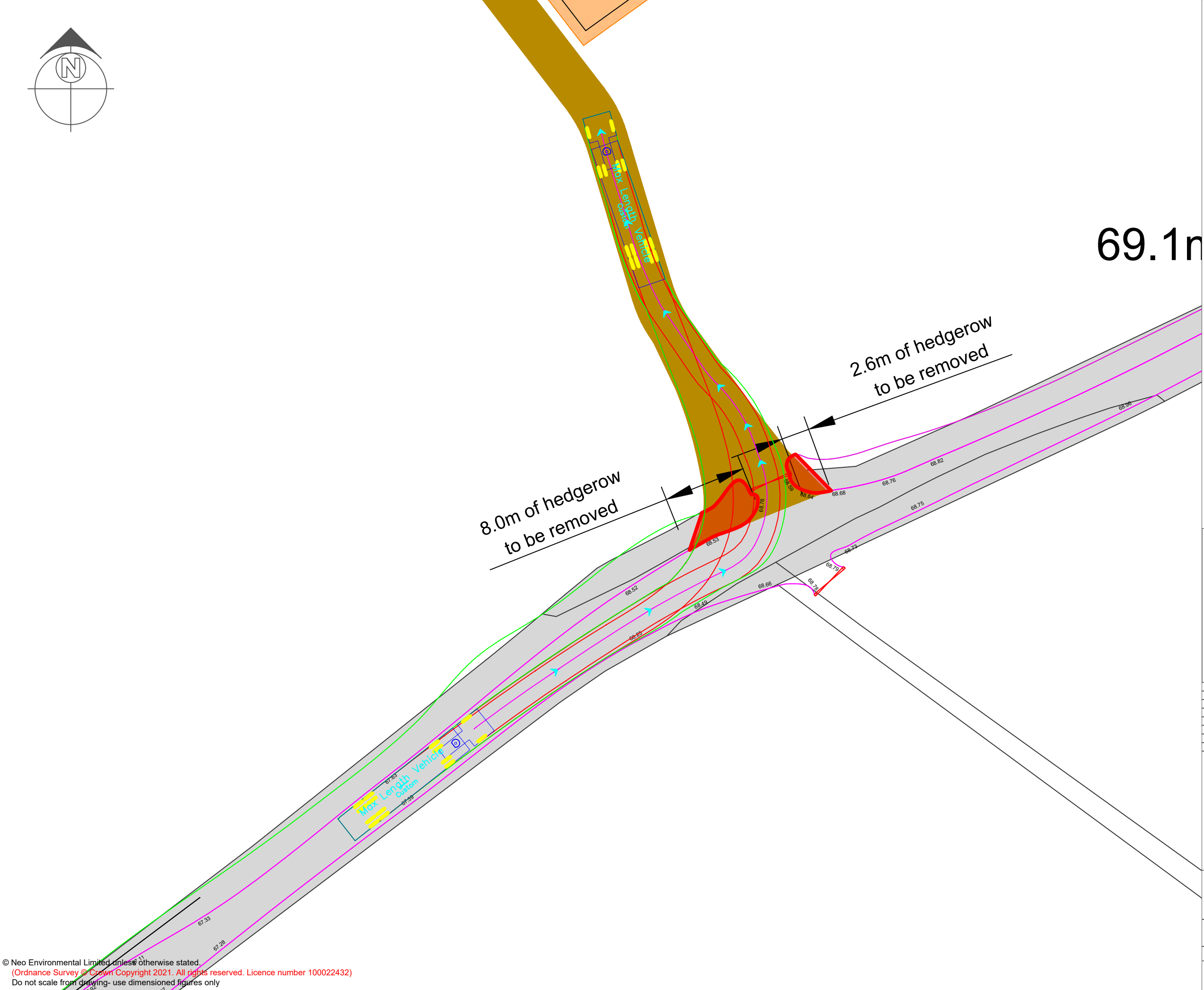
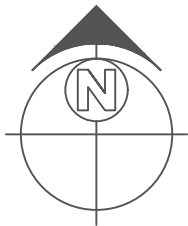
- Key
- Proposed Haul Route
  - Route Analysis
  - Condition Survey Extents
  - Development Boundary



Date: 06/12/2021  
Drawn By: Michael McGhee  
Scale (A3): 1:12,000  
Drawing No: NEO00668/0721/B







Key

- Wheel Swept Path
- Vehicle Overhang Swept Path
- Vehicle Centre Line
- Vehicle
- Hedgerow to be removed

Drawn By: Jamie McGhee  
Address: Wright Business Centre  
1 Lonmay Road  
Glasgow  
G33 4EL

Notes:

- Simulated Speed - 5mph
- Actual vehicle dimensions may vary. Route should be assessed by haulier with regard to the vehicle combinations prior to transport.
- No allowances made for rear steering.
- Does not show load.

Disclaimer:

- This drawing is copyright and must not be copied in part or in whole unless agreed in writing by Neo Environmental Ltd.
- All dimensions are to be checked by the contractor prior to the commencement of work. Any discrepancy should be reported immediately to Neo Environmental Ltd.
- All work to be carried out in accordance with local authority, statutory authority and health & safety requirements.

Max Length Vehicle

Tractor Width	: 2.55	Lock to Lock Time	: 6.0
Trailer Width	: 2.55	Steering Angle	: 50.0
Tractor Track	: 2.55	Articulating Angle	: 70.0
Trailer Track	: 2.55		

Ver.	Date	Comments
A	28/04/2021	

Warrington Office: T: 01925 661716 E: info@neo-environmental.co.uk  
Glasgow Office: T: 0141 773 6262 E: info@neo-environmental.co.uk  
Naas Office: T: 00353 (0)45 844250 E: info@neo-environmental.ie  
Ballymena Office: T: 0282 565 0413 E: info@neo-environmental.co.uk

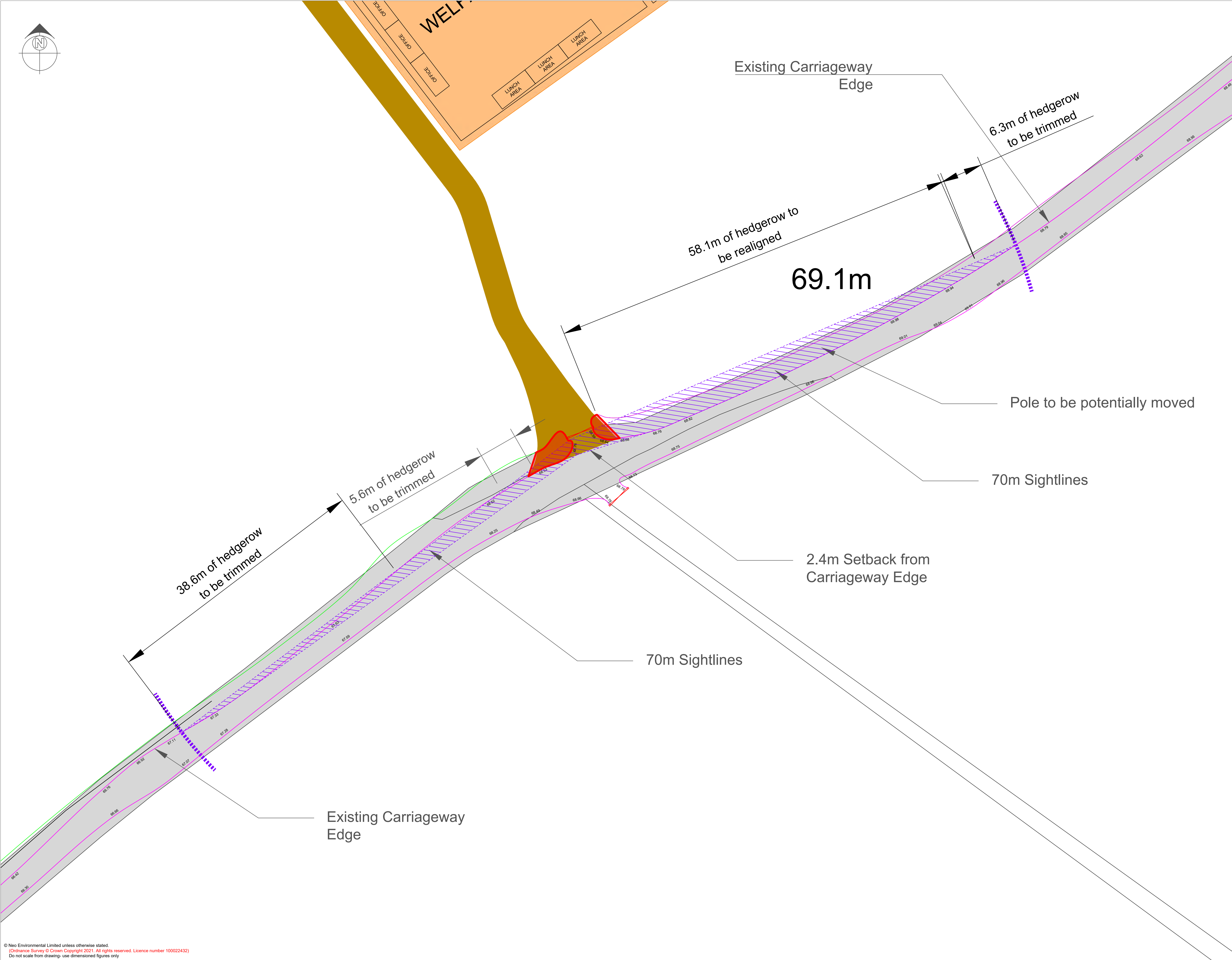
Project: Penpergwm Solar Farm  
Client: Renewable Connections

Drawing: Swept Path Analysis

Project No.: NEO00668  
Drawing No.: NEO00788\_0471\_A Figure 2

Drawn: JM	Checked: MM	Approved: PN
Scale: 1:375 @ A3		Revision: A
Date: 28 April 2021		





**Key**

- Visibility Splay
- Hedgerow to be removed  
Note: Removed as part of the access track upgrades.  
(See Figure 5.2)

Drawn By: Jamie McGhee  
Address: Wright Business Centre  
1 Lonmay Road  
Glasgow  
G33 4EL

Ver.	Date	Comments
A	28/04/2021	

Warrington Office: T:01925 661 716 E: info@neo-environmental.co.uk  
Glasgow Office: T: 0141 773 8262 E: info@neo-environmental.co.uk  
Naas Office: T:00353 (0)45 644250 E: info@neo-environmental.ie  
Ballymena Office: T:0282 565 0413 E: info@neo-environmental.co.uk

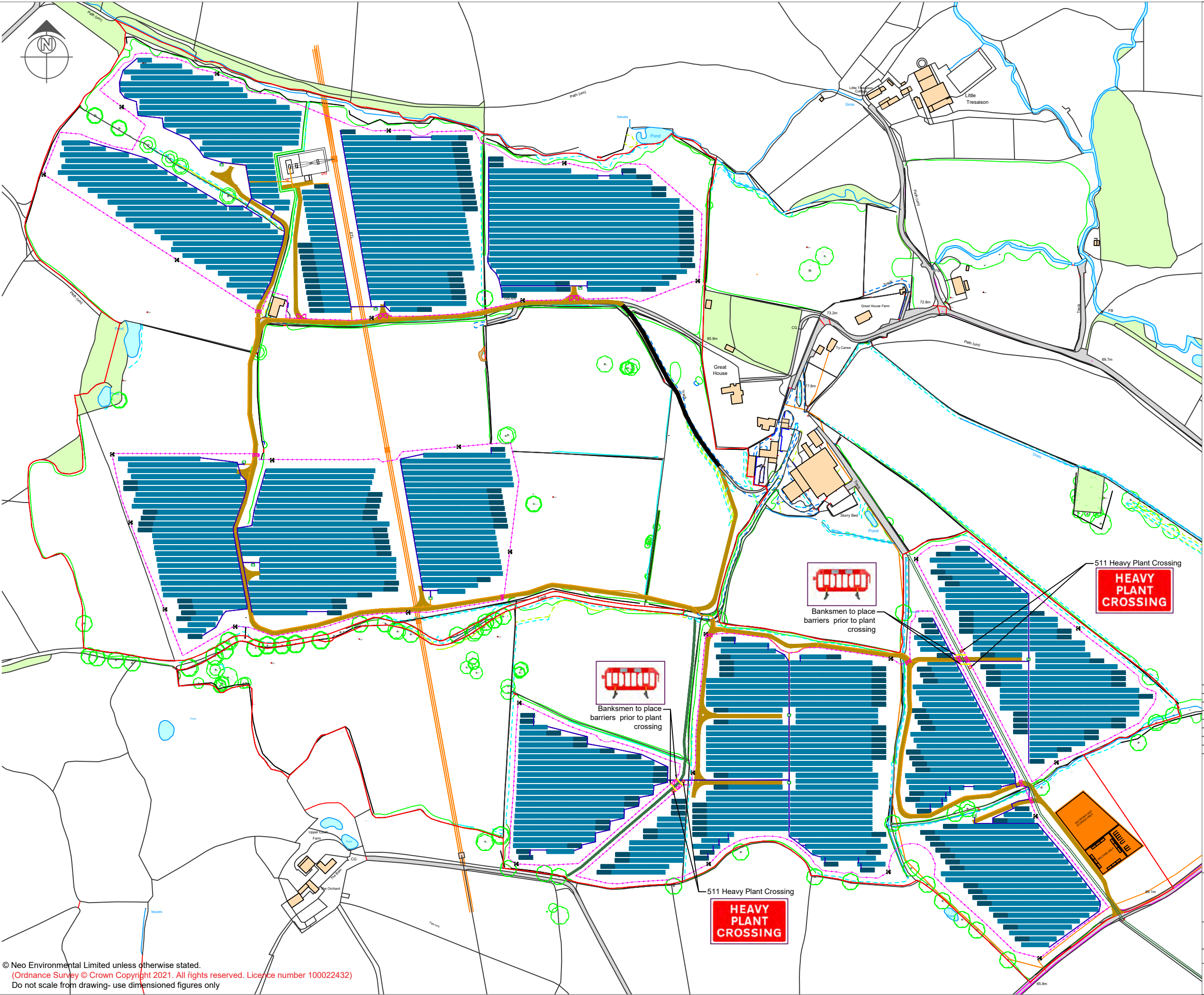
**Project:** Penpergwm Solar Farm  
**Client:** Renewable Connection  
**Drawing:** Visibility Splay

**Project No.:** NEO00668  
**Drawing No. :** NEO00668\_048I\_A Figure 3  
**Drawn:** JM **Checked:** MM **Approved:** PN

**Scale:** 1:250 @ A1 **Revision:**  
**Date:** 28 April 2021 **A**

© Neo Environmental Limited unless otherwise stated.  
(Ordnance Survey © Crown Copyright 2021. All rights reserved. Licence number 100022432)  
Do not scale from drawing- use dimensioned figures only





**Key**

- Development Boundary
- Solar PV Array
- Access Track
- Upgraded/Existing Access Track
- Construction Compound
- Transformer
- Substation
- Security Fencing
- Existing Vegetation
- CCTV
- Root Protection Areas
- Existing PRoW
- Gate
- MV Cable
- LV Cable
- Barriers
- Warning Sign

Ver.	Date	Comments
A	20/01/2022	

Warrington Office: T:01925 661716 E: info@neo-environmental.co.uk  
Glasgow Office: T: 0141 773 6262 E: info@neo-environmental.co.uk  
Naas Office: T:00353 (0)45 844250 E: info@neo-environmental.ie  
Ballymena Office: T:0282 565 0413 E: info@neo-environmental.co.uk

<b>Project:</b>	Penpergwm Solar Farm	
<b>Client:</b>	Renewable Connections	
<b>Drawing:</b>	PROW Management Plan	
<b>Project No.:</b>	NEO00668	
<b>Drawing No.:</b>	NEO00668_1231_C Figure 4	
<b>Drawn:</b> JM	<b>Checked:</b> MM	<b>Approved:</b> PN
<b>Scale:</b>	1:4,000 @ A3	<b>Revision:</b> A
<b>Date:</b>	20 January 2022	



## 9. BIBLIOGRAPHY

Monmouthshire County Council, 2011. *Monmouthshire County Council Adopted Local Plan 2011 - 2021*. [Online]

Available at:

<https://www.monmouthshire.gov.uk/app/uploads/2017/05/Adopted-Local-Development-Plan-with-PDF-tags.pdf>

Wales Government, 2007. *Technical Advice Note 18: Transport*. [Online]

Available at: <https://gov.wales/sites/default/files/publications/2018-09/tan18-transport.pdf>

Wales Government, 2021. *Future Wales: The National Plan 2040*. [Online]

Available at: <https://gov.wales/sites/default/files/publications/2021-02/future-wales-the-national-plan-2040.pdf>

Wales Government, 2021. *Planning Policy Wales 11th Edition*. [Online]

Available at: [https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11\\_0.pdf](https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf)



## 10. GLOSSARY

- Automatic Traffic Counter - Automatic traffic counters are normally identified as two rubber tubes laid across the carriageway linked to a road side recorder box. These tubes can measure both speed and number of vehicle movements and in some cases the weight of **vehicles passing over, e.g. cars or HGV's.**
- Swept Path Analysis - A Swept Path Analysis is the calculation and analysis, using software, of the movement and path of different parts of a vehicle when that vehicle is undertaking a turning manoeuvre.
- Visibility Splay - A visibility splay is a drawing plan than visualises the angle and distance from which drivers emerging from an access can see and be seen by drivers proceeding along the priority road. it ensures that any buildings works for entrances and exits have good visibility to prevent motor accidents.
- Light Goods Vehicles - A light goods vehicle, or LGV, can be defined as a commercial motor vehicle with a total gross weight of 3,500kg or less. Light goods vehicles include commercial vehicles such as vans, pick-up trucks and three-wheelers.
- Heavy Goods Vehicles - A heavy goods vehicle, or HGV, can be defined as a commercial vehicle with a total gross weight of over 3,500kg.
- Standard Stopping Distance - The stopping distance is the distance covered between the time when a user decides to stop a moving vehicle and the time when the vehicle stops entirely. The stopping distance relates to various factors including road surface, reflexes of the car's driver, etc.
- 85-percentile speed - The **"85th percentile" speed is a speed** at which 85% of traffic will be travelling at, or below, along a street or road (under free flow conditions). It's typically associated with the setting of speed limits.





## GLASGOW - HEAD OFFICE

Wright Business Centre, 1 Lonmay Road, Glasgow G33 4EL  
T: 0141 773 6262  
[www.neo-environmental.co.uk](http://www.neo-environmental.co.uk)

### N. IRELAND OFFICE

83-85 Bridge Street  
Ballymena, Co. Antrim  
Northern Ireland  
BT43 5EN  
T: 0282 565 04 13

### IRELAND OFFICE

Johnstown Business Centre  
Johnstown House, Naas  
Co. Kildare  
T: 00 353 (0)45 844250  
E: [info@neo-environmental.ie](mailto:info@neo-environmental.ie)

### RUGBY OFFICE

Valiant Office Suites  
Lumonics House, Valley Drive,  
Swift Valley, Rugby,  
Warwickshire, CV21 1TQ  
T: 01788 297012

### WARRINGTON OFFICE

Cinnamon House, Cinnamon Park  
Crab Lane, Fearnhead  
Warrington  
Cheshire  
T: 01925 661 716