

PREMIER FOODS BAKERY SOLAR FARM

TRAFFIC MANAGEMENT PLAN

01 September 2023

EVOKE

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TRAFFIC MANAGEMENT PLAN

PROJECT DETAILS

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1. Introduction

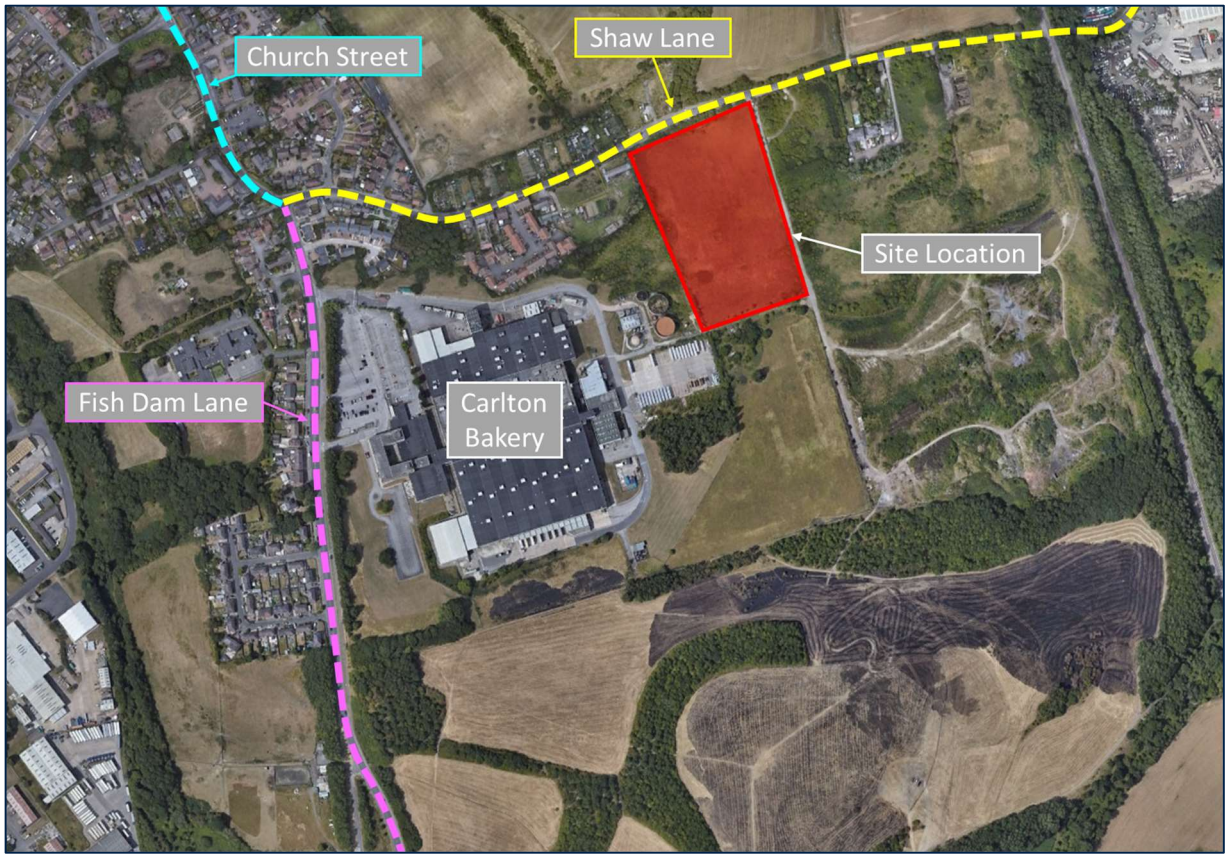
1.1. Context

1.1.1. This Traffic Management Plan (TMP) has been prepared by Evoke Transport Planning Consultants Ltd (Evoke) on behalf of Premier Foods Plc in support of a planning application for the installation and operation of a Solar Farm together with all associated works, equipment and necessary infrastructure, to deliver up to 2MW of electricity on land adjacent to Premier Foods Bakery.

1.2. Existing Site

1.2.1. The Application Site is located in Carlton to the north east of Barnsley and comprises an area of approximately 2.7 hectares to the east of the Premier Foods site (Carlton Bakery). To the north, the Site is bound by Shaw Lane, to the south and east by undeveloped land and to the west by the Carlton Bakery. At present, a secure access to the Application Site is provided via the internal Carlton Bakery highway network in the south western corner of the Site. The general location of the Application Site is shown at Figure 1.

Figure 1 – Site Location Plan



Source: Google Maps

1.3. Consultation

1.3.1. A pre-application submission was made by tor&co to BMBC outlining the proposed development of a solar farm to provide up to 50% of Premier Food's Carlton Bakery power needs. A response was received from BMBC in May 2023. In respect of transport, the main points within BMBC's response have been outlined below:

- The Pre-application Planning Statement produced by tor&co. highlights the fact that vehicle movements will be negligible once the solar farm is up and running. Highway Development Control (HDC) have no objections to the principle of development.
- It is proposed that a Transport Statement and a Construction Environmental Management incorporating Traffic Management Plan will be submitted to the planning application, for the Highways Authority's review and consideration. These documents will provide details of how the construction phase will be managed, to ensure that residential amenity and the local transport network is not unduly impacted.
- Highways DC welcome the intention to submit these details as part of a full application. The required Construction Management Plan should include but not be restricted to:

  i. Phasing of the works
  ii. Site working hours
  iii. Delivery hours which should avoid peak hours
  iv. Means of access for construction traffic including delivery routes
  v. Phasing of unloading of plant and materials
  vi. The parking of vehicles of site operatives and visitors
  vii. Storage of plant and materials used in constructing the development
  viii. Measures to prevent mud/debris being deposited on the public highway

1.3.2. The response has been taken into account in the production of this TMP and the separate Transport Statement which will be submitted with this application.

1.4. Proposed Development

1.4.1. The proposed development consists of the installation and operation of a Solar Farm together with all associated works, equipment and necessary infrastructure, to deliver up to 2MW of electricity on land adjacent to Premier Foods Bakery. The existing field entrance will be utilised to facilitate occasional operational traffic as well as construction traffic. This will also utilise the existing internal highway network within the Carlton Bakery site. No additional car and cycle parking will be provided as part of the proposed development; the existing facilities within the Carlton Bakery site will be utilised. A copy of the proposed plan has been attached at **Appendix A.**

1.5. Report Structure

1.5.1. The principle aim of this TMP is to ensure that the construction works, and operational period are organised and delivered in a manner that safeguards the highway impact, highway safety and amenity of the area surrounding the Application Site.

- **Section 2: Construction Process;** summarises the different phases of work and sets out the construction methodology and working hours.
- **Section 3: Traffic Generation;** outlines the anticipated composition and volume of traffic during the construction phase of the development along with the proposed routing of traffic.
- **Section 4: 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 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;** discusses the anticipated trip generation from the site, sustainable travel measures which can be put in to the place to reduce vehicle trips.
- **Section 8: Summary and Conclusion;** summarises the details and findings of the report.

2. Construction Process

2.1. Introduction

2.1.1. This section outlines the proposed 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 proposed construction is scheduled to last for up to six months (24 weeks). The construction can broadly be split into the following phases;

- Site Setup – including site tracks, perimeter fencing, site welfare, construction compound;
- Solar Panel Frames – including setting out positions, installing piles, constructing frames;
- Cabling and Ducting – including installing AC cables, DC mains, earthing system and ducts; and
- Modules and Commissioning – including connecting LV DC and AC, installing modules and overall commissioning.

2.2.2. It should be noted however that the construction programme may be subject to change prior to work commencing on site. Likewise, the CTMP is a live document, should any changes be required these will be agreed with the Local Planning Authority in consultation with the Local Highway Authority.

2.3. Delivery of Plant and Materials

2.3.1. The existing field entrance will be utilised to facilitate occasional operational traffic as well as construction traffic. To accommodate construction vehicles minor widening of the field gate access may be utilised during the construction phase, however this is anticipated to comprise of small scale hedge removal which would be reinstated following completion of the construction phase.

2.3.2. With regards to the suitability of the existing internal highway network within the Carlton Bakery site, the roads measure approximately 8.0m in width which is sufficient to allow the simultaneous two-way flow of HGVs. As such, given that the route is safe and suitable to accommodate the HGV movements associated with the bakery, no widening or improvement works are proposed on the internal network for the construction period. The proposed routing strategy is shown below in Figure 2.

Figure 2 – Proposed Routing Strategy



2.3.3. Further to this, two construction compounds will be located within the wider Carlton Bakery site for the construction period which would not disrupt the day to day operation of the bakery. It is of note that both options will be managed by both Premier Foods and Photon Energy. Swept path analysis demonstrating the suitability of these routes has been attached at **Appendix B.**

2.3.4. Vehicle access to the application site will be taken from a private track to the north of the HGV parking area, as shown below in Figure 3.

Figure 3 – Application Site Access Route



2.4. Working Hours

2.4.1. All works will be conducted between the hours of 08:00 to 18:00 hours Monday to Friday with limited construction activities on Saturday mornings (08:00-13:00) foreseen. No construction activities will take place on a Sunday's or Bank Holiday. Works undertaken outside of these timings will only occur should any electrical shutdowns be required.

3. Traffic Generation

3.1. Introduction

3.1.1. This section of the report sets out the estimated volume and type of vehicles that will be generated throughout the construction and operational phase of the development. This information has been used in subsequent sections that consider the safety of the adjoining highway networks, in order to inform the suite of management measures proposed.

3.1.2. It should be noted that the construction programme and corresponding construction traffic strategy may be subject to change prior to work commencing on site. Any substantial changes in the build program and / or number of vehicular movements will be agreed with the local planning and highway authority in advance of construction.

3.2. Construction Vehicles

3.2.1. The trip generation potential of the construction phase of the development has been informed through discussion with the applicant on the anticipated construction programme and is based on experience of delivering similar developments in the United Kingdom.

3.2.2. The construction period is estimated to last for up to six months (24 weeks), with deliveries fluctuating within this period. It is envisaged that the majority of movements would be Monday to Friday with only a limited number of movements on a Saturday. All deliveries will be instructed to avoid the network peak hours of 08:00-09:00 and 17:00-18:00 along with key school drop-off and collection periods (08:00-09:30 and 14:30-16:00).

3.2.3. A summary of the anticipated vehicle movements across the construction period has been outlined below in Table 1.

Table 1 – Construction Vehicle Movements

Type of Vehicle	Number of Vehicles
Articulated Truck	Approximately 8, mostly during the first 4-6 weeks
Curtain Sided Lorry	6 lorries over 4 weeks (in the middle of the project) for PV modules delivery
Waste Management	Collection of skip and container approximately 1 per week. Total 10.
Articulated Low Loader	Approximately 6 throughout construction period. (For the delivery of construction machinery.)
Rigid Lorries – for equipment deliveries	Approximately 15 over the first 4 months of the project
Hiab	2 deliveries due at the end of the project
JCB	1 near the middle of the project for a day

3.2.4. As noted above, the overall number of vehicle movements associated with the construction of the solar farm is anticipated to be approximately 48 which equates to 96 two-way movements over the construction phase (24 weeks), excluding trips undertaken by workers. Deliveries will vary in amount per week, however on average the construction phase is anticipated to generate between 2-6 deliveries per week (4-12 two-way HGV movements), however as noted within Table 1, once the majority of materials are on site there will be days throughout the construction period where there will be no HGV movements associated with the construction.

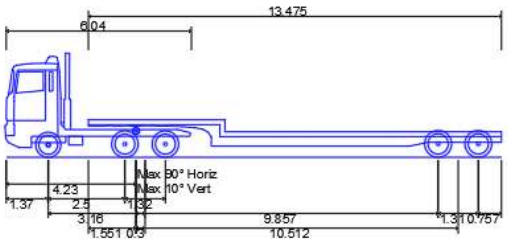
3.2.5. The most intensive period during construction will occur during the initial site set up.

3.3. Construction Vehicle Types

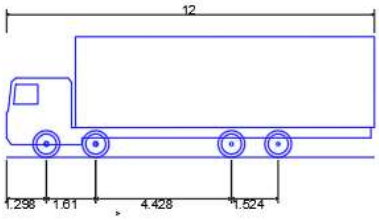
3.3.1. It is noted that a variety of vehicles will need to access the Application Site during construction. These will include low loaders and rigid HGVs delivering the requisite materials (including aggregate, mounting frames and the solar panels). The dimensions of the vehicle types are shown in Figure 4 below.

3.3.2. There will be no abnormal loads accessing the site for the entirety of the construction process.

Figure 4 – Construction Vehicle Types



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

3.4. Dwell Times

3.4.1. Delivery vehicles are likely to attend the Application Site for approximately one hour per vehicle. There are sufficient spaces within the curtilage of the Application Site to ensure that no vehicles would have to wait on the surrounding highway network.

3.4.2. Further measures that will be employed to control the number and frequency of vehicles arriving at the Application Site are detailed within Section 5 of this report.

3.5. Construction Staff

3.5.1. During construction, there is a balance to be made between the intensity of on-site activity and the duration of that activity. In terms of employment generated by the solar park, the construction phase will generate approximately 10-15 full time jobs. Car sharing will be employed to minimise traffic so far as is practically possible.

3.5.2. All staff are anticipated to arrive at the site in the 30-minute periods preceding the start of the operating day (i.e. 07:30 to 08:00hrs) and depart in the 30-minute period that follows the end of the operating day (i.e. 18:00 to 18:30hrs). Staff trips are likely to travel to / from different origins / destinations and hence spread their movement across the highway network.

3.5.3. Premier Foods will allow construction workers to park in the existing employee car park on site to avoid obstruction to the operation of the public highway, and use of this car park shall be strictly enforced. The material in Section 7 outlines full details on construction worker trips and the measures within the Construction Travel Plan that will seek to minimise construction workers travel.

3.6. Operational Period

3.6.1. Once operational, the proposed development will not require significant maintenance, with the exception of routine visits made by 4x4 vehicles or panel van vehicles which would equate to one x two-way vehicle trip per month.

3.6.2. The impact of maintenance vehicles is considered to be negligible given the low and sporadic nature of the maintenance visits.

4. Site Access and Construction Route

4.1. Introduction

4.1.1. 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 Application Site, having due regard to the traffic volumes and vehicle types identified previously.

4.2. Site Access and Visibility

4.2.1. Access to the Application Site will be taken from the existing Premier Foods access on to Fish Dam Lane. At the access location, Fish Dam Lane is a two-way single carriageway road subject to a 30mph speed limit. A ghost island right turn lane is provided at the main access allowing for through carriageway widths of 3.6-3.9m in width.

4.2.2. The construction access will be provided via an existing track connecting the Premier Foods internal highway network to the site via an existing gated field access. To accommodate construction vehicles minor widening of the field gate access may be utilised during the construction phase, however this is anticipated to comprise of small scale hedge removal which would be reinstated following completion of the construction phase.

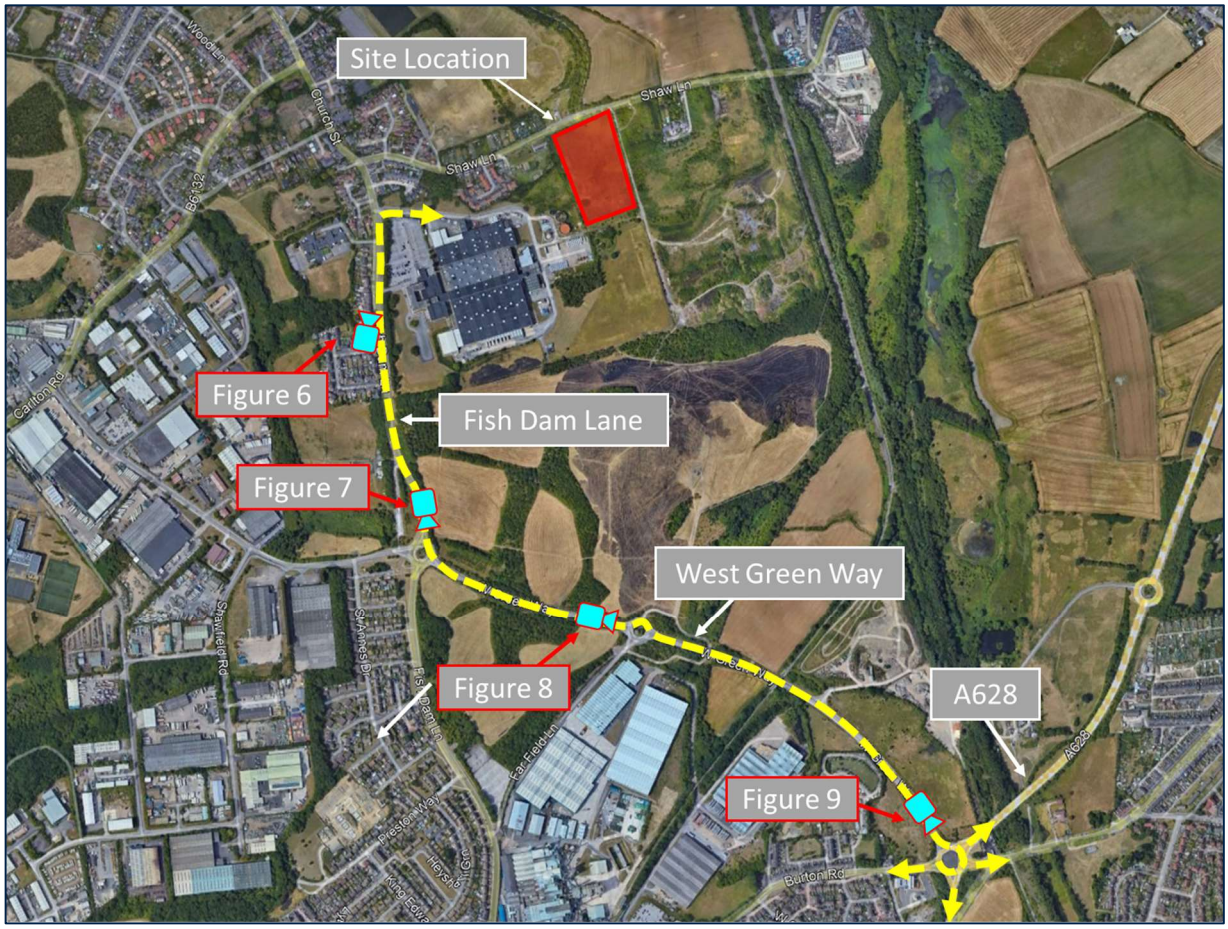
4.2.3. It is proposed that temporary signage is used to direct construction traffic to the site along the proposed construction traffic route utilising existing street furniture.

4.3. Proposed Construction Route

4.3.1. Due to the nature of the surrounding transport network, local road restrictions, and to minimise the impact on any one section of road, construction vehicles will be permitted to use a single route option. All traffic accessing the Application Site for construction purposes will be required to do so by travelling to the site from the Strategic Road Network (SRN) via West Green Way and Fish Dam Lane.

4.3.2. A summary of the proposed construction route is outlined in Figure 5, with the locations of images along the route marked on to the map.

Figure 5 – Route Overview



Source: Google Maps

4.3.3. The construction route connects the A628 and the proposed site via West Green Way and Fish Dam Lane. As demonstrated in Figure 5, the route passes by a number of employment and commercial uses, as such HGV use on the network is considered to be established.

Figure 6 – Fish Dam Lane Looking North



4.3.4. Fish Dam Lane continues south until it intersects Industry Road and West Green Way, where construction traffic will take the first exit on to West Green Way.

Figure 7 – Fish Dam Lane / West Green Way Roundabout



Source: Google Maps

4.3.5. West Green Way then proceeds to the east where it intersects the Far Field Lane / West Green Way roundabout, where construction traffic will route straight over to continue on West Green Way.

Figure 8 – West Green Way / Far Field Lane Roundabout



Source: Google Maps

4.3.6. West Green Way continues to the south-east before intersecting with the Strategic Road Network at the A628, where a five-armed roundabout connects West Green Way, the A628, Barnsley Road, and Burton Road.

Figure 9 – West Green Way / A628 Roundabout



Source: Google Maps

4.3.7. In summary, this route provides sufficient road width to accommodate the minor temporary increase in HGV movements associated with the construction traffic. During on site investigations, it was evident that the route to the wider strategic highway network is already trafficked by HGVs, and as such a minor uplift in vehicle movements is not anticipated to result in a severe impact to the existing highway network.

4.3.8. The route will provide the preferred route for construction traffic during the initial construction phase of the development as it is the most direct route to the wider highway network and the route already accommodates a greater number of HGV movements on a daily basis.

4.4. Access Management Measures

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

4.4.2. Construction HGVs will be subject to a booking system with fixed arrival times. A banksman will be utilised and situated at the site access to assist HGVs in accessing and egressing the site and will only instruct HGVs to depart the site when Fish Dam Lane is clear of traffic in the vicinity of the site access, and it is safe to do so.

4.4.3. Temporary signage will be located in the vicinity of the site access during the construction period to warn drivers of the site access. Figure 10 and Figure 11 provide illustrative examples of the types of signage that will be installed.

Figure 10 – Temporary Signage at Site Access



4.4.4. Additional signage will advise motorists of HGVs turning through the site access as shown in Figure 11

Figure 11 – Temporary Signage along Fish Dam Lane



4.5. Road Condition Survey

4.5.1. Given the low level of HGVs forecast for the construction of the proposed Solar Farm coupled with the existing HGV use of Fish Dam Lane and West Green Way, it is not considered necessary to undertake a Road Condition Survey pre or post construction of the proposed Solar Farm.

4.6. Highway Safety

4.6.1. An investigation of Personal injury Accident data in the immediate vicinity of the site access has been undertaken using www.crashmap.co.uk. Personal Injury Accidents between 2017 and 2021 (the most recently available period) along Fish Dam Lane in the vicinity of the site access have been analysed.

4.6.2. Whilst an in-depth study of all incidents in the area has been undertaken in the accompanying TS, this review focuses on solely incidents which have involved HGVs.

4.6.3. To summarise the TS's more wide-ranging analysis, the data indicates that there were no clusters of injury accidents within the study area and no collisions at the site access junction. Based on the recorded injury accident data there is not considered to be an undue road safety problem within the vicinity of the Application Site.

4.6.4. The study area for this document is shown below in Figure 12, with HGV-involved incidents marked.

Figure 12 – PIA Study Area



Source: Crashmap

4.6.5. As can be seen from the figure, no HGV accidents have occurred on the route between the site access and the roundabout connecting West Green Way to the A628. One fatality has occurred in the vicinity of the route, on the eastbound Fish Dam Lane / West Green Lane / Industry Lane roundabout. As this incident is isolated and did not occur on the roundabout itself or on the route that HGVs will be taking, it is considered that it does not represent a trend which could be exacerbated by the site construction traffic.

4.6.6. Two incidents have occurred on the roundabout connecting the A628 and West Green Way, one of which resulted in an injury classified as 'serious' and another which resulted in an injury classified as 'slight'.

4.6.7. As a result of this analysis, it can be concluded that the existing highway network is suitable to accommodate the minor increase in HGV traffic that would be generated by the construction of the solar farm. As noted above, the number of vehicle movements is anticipated to be marginal and is likely to fall within day to day variations currently experienced on the local highway network. A range of traffic management measures will also be employed to further manage and promote safe routing by construction vehicles.

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 TMP. 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 and the details will be provided to the Local Planning Authority once confirmed. 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 TMP;
- Vehicle Scheduling;
- Checking for scheduled road works on the https://one.network/uk/barnsley website;
- Checking for scheduled refuse collections with Local Planning Authority;
- 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;
- Site neighbours;
- Other local stakeholders such as emergency services or local transport providers; and
- Local Planning and Highway Authorities.

5.2.3. Regular review meetings and telecommunications will be held between the Site Manager and BMBC 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 BMBC if requested.

5.3. Booking System

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

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

5.3.3. The provision of two construction compounds will provide waiting areas with sufficient capacity for three waiting HGVs. Hauliers will be required to contact the Site Manager to give an indicative delivery time to ensure that the delivery space and banksmen (if required) are ready for their arrival on site.

5.3.4. 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.

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

5.3.6. Where possible, all deliveries by goods vehicles (>3.5 tonnes) will be undertaken outside of the highway peaks of 08:00-09:00 and 17:00-18:00 along with key school drop-off and collection periods (08:00-09:30 and 14:30-16:00). All vehicles ready to depart the application site during these periods shall be held back within the compound area until the appropriate time has passed.

5.4. Route Compliance

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

5.5. Vehicle Compound

5.5.1. The provision of two vehicle compounds enables sufficient space to accommodate a turning vehicle whilst at least one vehicle is parked, to allow for vehicles to be held back during the restricted periods, if required. It should be noted that both options will be managed by both Premier Foods and Photon Energy and will include provision for Staff and Welfare offices, storage, staff and van / minibus parking, wheel washing facilities and loading and unloading areas.

5.6. Site Fencing

5.6.1. A 2.4m tall palisade security fence will be constructed around the application site prior to any construction works taking place. The security fence will be constructed on the inside of hedgerows, so that it will be partially screened by the hedgerows in views of the surrounding area, further mitigating any visual impact.

5.6.2. The fencing of the site will protect members of the public from the ongoing construction works as well as preventing unauthorised personnel accessing the site. Six poles for security cameras will also be erected around the border of the site.

5.6.3. 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.

5.7. Communication Strategy

5.7.1. As identified above, the Site Manager will be responsible for ensuring that there is adequate liaison between all stakeholders and the Local Planning Authority and Highway Authorities throughout the construction period.

5.7.2. Prior to any works taking place, the contractor shall inform neighbours such as Carlton Primary School and residents along Fish Damn Lane which may be affected by noise, dust or vehicle movements arising from the construction work or nature of the works, proposed hours of work and their expected duration. In addition to this a notice will be placed at the main site entrance informing the neighbours of the hours of work.

5.8. Complaints Procedure

5.8.1. Whilst the Site Manager will use reasonable endeavours to ensure that site neighbours are informed of the construction programme and potential impacts it is 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.

5.8.2. 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.

5.8.3. The Site Managers contact details will be provided to the Local Planning and Highway Authority 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 attributable to 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 works the main air pollution emissions are the dust and the fumes from machinery. The contractors will use high pressure hoses to saturate all 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 the use of compressors, generators and portable petrol cut off saws. Any compressors and generators used will of the latest design available with low emission ratings. 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. The water application is designed to dampen any arising debris and dust as well as reduce the wear to the blade. Use of cut off saws without water attachments will not be tolerated under any circumstances.

6.2.3. Burning of materials on site will not be permitted in order to prevent smoke emissions.

6.2.4. Mud and debris on the road are regarded as one of the main environmental nuisances and safety problems arising from construction sites. A wheel washing facility will be provided for the duration of the construction works to ensure levels of mud and debris on roadways near the application site is minimised. The wheel washing facilities will be in the form of a hose down point located adjacent to the construction compound. All vehicle wheels will be cleaned whenever a vehicle leaves the site.

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

6.3. Noise Control

6.3.1. Noise generated by the construction process will be considered and its impact on neighbouring properties mitigated. Suitable mitigation measures to be used include:

- Standard construction hours;
- The 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 where possible thereby minimising transport costs and impact on the local environment. The use of the

booking system for deliveries will also help to ensure that the construction site is serviced in an efficient manner which help to minimise the number of vehicle movements that would be generated.

6.4.2. 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 that are generated, any limited aggregates generated on site during any works will be re-used wherever practical.

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 and refuse and recycling stores.

6.5.3. 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.

6.5.4. It will be requested that the manufacturer supplying the solar panels for the site use packaging that is 100% recyclable. The packaging material collected during the construction by the installation team can then be re-used by the solar panel manufacturer upon completion.

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 as an employer and to staff.

7.1.2. This TP 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 these different types of travel by promoting travel via sustainable modes and sourcing labour and goods locally, the TP objectives can be achieved.

7.2. Trip Generation

7.2.1. The Applicant estimates that the application site will require up to 10-15 staff on site per day. Table 2 below shows the 'Method of Travel to Work' for the workplace population of Barnsley 002 Middle Super Output Area (MSOA) in which the application site is located. This has been used to estimate the method by which those 100 construction workers could travel to the application site.

Table 2 – 2011 Census JTW Data (Day Time Population)

Mode	Barnsley 002 MSOA	Number of Workers
Train	0.3%	0
Bus	5.0%	1
Taxi	0.6%	0
Motorcycle	1.2%	0
Car Driver	71.3%	7
Car Passenger	10.2%	1
Bicycle	2.4%	0
On foot	8.7%	1
Other	0.3%	0
Total	**100.0%**	**10**

7.2.2. As Table 2 shows, if existing journey to work mode shares of the local area were to be assumed in this instance, it could be anticipated that seven trips to the application site would be undertaken by car with a one trip undertaken via bus, one on foot and one via as a car passenger.

7.2.3. Such mode shares could be considered reasonable without measures to further encourage travel by sustainable modes. However, experience of similar sites has shown that if sustainable measures are adopted and a TMP put into place, many of the anticipated staff trips will be made via car sharing with fellow construction workers. As such, the number of individual car trips as shown in Table 2 is likely to be reduced and the number of car shares is likely to increase.

7.3. Sustainable Transport

7.3.1. 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. The provision of a 2.5m wide footway is provided along Fish Dam Lane to help facilitate this.

7.3.2. Bus stops are provided to the west of the site access along Fish Dam Lane within 100m of the worker site entrance. These stops are served by Services 57 and 59, which provide services approximately every 15 minutes into Barnsley Interchange and to Royston, and services to Wakefield every hour.

7.3.3. Barnsley Interchange Railway Station is located 4.9km to the west of site (an approximately 22-minute cycle, or a 16-minute bus journey) and provides services to various surrounding cities including Sheffield, Leeds, Lincoln, and Huddersfield. Given the distance to the rail station it is unlikely that rail would provide a suitable mode of transport to the site unless combined with cycling, bus, or car sharing.

7.3.4. There is great potential for construction workers to car share to work, especially given the fact that some sub-contractors are likely to be travelling from the same origin (their workplace) to the same destination (the application site).

7.3.5. Car sharing represents a relatively convenient form of travel offering a significant potential to reduce overall private mileage of construction workers and visitors. It is this mode of transport which often forms one of the most convenient methods of sustainable travel for construction workers.

7.3.6. The Site Manager will determine construction staff willingness to car share. Furthermore, looking at workers home postal addresses 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 the share journeys, including information such as their home addresses and working hours and could try and match suitable car sharers.

7.3.7. 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.

7.3.8. 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 further encourage people to travel to the application site by sustainable modes whilst having the added benefit of reducing the number of trips made off site during lunch breaks.

7.4. Measures

7.4.1. As indicated above there is some potential for construction workers to travel to the application site by sustainable modes such as walking, cycling and public transport. There is also great potential for construction workers to car share to the application site. It is therefore deemed appropriate to promote the local services available as well as following the measures to promote sustainable travel by construction staff.

- Include local public transport timetables and route maps within the on-site compound for construction staff to review;
- Providing changing and storage facilities for construction staff;
- Assist in matching car sharers; and
- Minimise where possible the number of contractors on site at any one time to reduce trips generated and promote car sharing.

7.4.2. Further to this the following measures are to be promoted to minimise the environmental impacts of HGV trips generated by the development.

- Initiate a weekly booking system for the delivery of plan and materials to the site;
- 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 routes shall be included as a contractual requirement of the Contractor and will be communicated to all individuals associated with the works;
- Provision of wheel washing facilities at the application site entrance / egress.

7.4.3. The Department for Transport (DfT) have published guidance relating to the efficient use of freight on the network. “Review of Low Carbon Technologies for Heavy Goods Vehicles” (2009) setting out a number of HGV technologies with the potential for reducing carbon emissions. Within this DfT report it assesses a number of vehicle technologies and driver behavioural styles for reducing the environmental impact of HGVs. 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 CO^2 emissions by up to 5%;
- Automatic tyre pressure adjustment – automatically monitors and adjusts tyre pressures which could provide CO^2 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 and improved fuel consumption.

7.5. Residual Impacts

7.5.1. A booking system will be initiated to ensure that construction deliveries are managed efficiently with minimal disruption and delay. Local residents will be informed of the commencement of the construction process. The initiation of the Travel Plan measures alongside the targets will therefore minimise the impacts upon the operation of the local highway network as well as reduce environmental impact.

8. Summary and Conclusion

8.1.1. This Traffic Management Plan (TMP) has been prepared by Evoke Transport Planning Consultants Ltd (Evoke) on behalf of Premier Foods Plc in support of a planning application for the installation and operation of a Solar Farm together with all associated works, equipment and necessary infrastructure, to deliver up to 2MW of electricity on land adjacent to Premier Foods Bakery.

8.1.2. The existing field entrance will be utilised to facilitate occasional operational traffic as well as construction traffic. To accommodate construction vehicles minor widening of the field gate access may be utilised during the construction phase, however this is anticipated to comprise of small scale hedge removal which would be reinstated following completion of the construction phase.

8.1.3. With regards to the suitability of the existing internal highway network within the Carlton Bakery site, the roads measure approximately 8.0m in width which is sufficient to allow the simultaneous two-way flow of HGVs. As such, given that the route is safe and suitable to accommodate the HGV movements associated with the bakery, no widening or improvement works are proposed on the internal network for the construction period. Swept path analysis has been undertaken of the site access and route through the site, together with the vehicle holding / loading areas.

8.1.4. The construction period is estimated to last for up to six months (24 weeks), with deliveries fluctuating within this period. It is envisaged that the majority of movements would be Monday to Friday with only a limited number of movements on a Saturday. All deliveries will be instructed to avoid the network peak hours of 08:00-09:00 and 17:00-18:00 along with key school drop-off and collection periods (08:00-09:30 and 14:30-16:00).

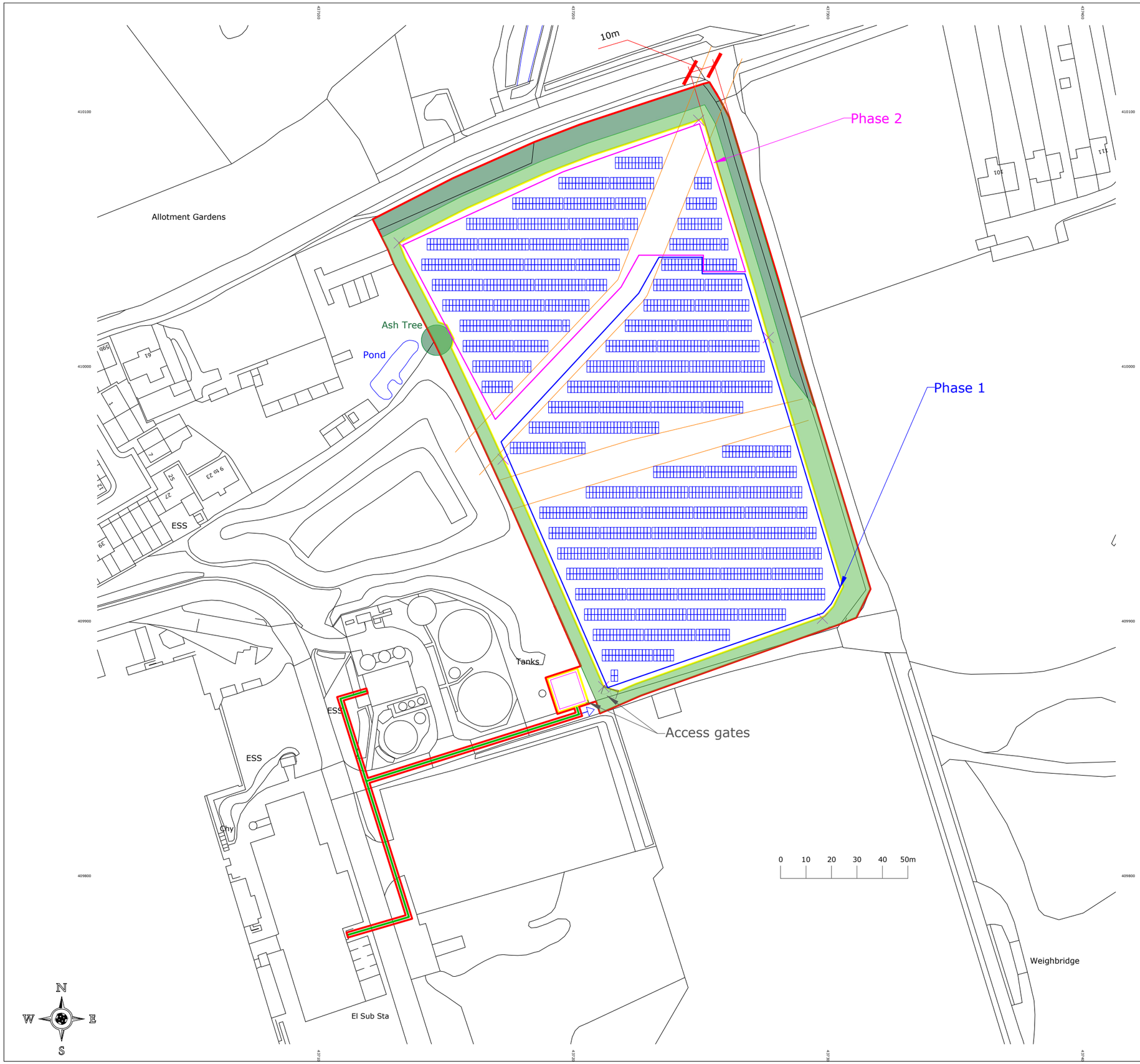
8.1.5. The overall number of construction vehicle movements associated with the construction of the solar farm is anticipated to be approximately 48 which equates to 96 two-way movements over the construction phase (24 weeks), excluding trips undertaken by workers. Deliveries will vary in amount per week, however on average the construction phase is anticipated to generate between 2-6 deliveries per week (4-12 two-way HGV movements), however, once the majority of materials are on site there will be days throughout the construction period where there will be no HGV movements associated with the construction. The most intensive period during construction will occur during the initial site set up and aggregate deliveries for track construction.

8.1.6. The 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 the deliveries are spread out across the week and across the 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.

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

8.1.8. Overall, it is considered that the measures and control processes outlined in this TMP are appropriate to overcome the identified constraints associated with the application site.

Appendix A – Proposed Site Layout



DRAWING LEGEND

1. System Details
   - 1.1. Installed Power: 1992.58 kWp
   - 1.2. Installed Modules: 2974
   - 1.3. Module Power: 670Wp each
   - 1.4. Module Inclination: 20°
   - 1.5. Mounting System: Hi-tech

PV Modules: STP670S-D66/Wmh
Power: 670Wp
Dimensions: 2384x1303x35mm

Landscape screening / biodiversity enhancement zone

H2A - Hedgerow (priority habitat)

Application Site Boundary

2.4m Mesh weld fencing in colour: moss green

Substation area (transformer enclosed within 2.4m green mesh weld fencing with single access gate)

Existing secure access retained

Double leaf gate - 2 x 3m wide green mesh gates with green frame

6m high CCTV poles

Easement zone due to pipes

Cable Routes

Rev	Description	Dwn	Chck	Date
G	Revised gate position	SA	JP	06/09/2023
F	Orange MH omitted	CR	FB	29/08/2023
E	Phase 2 boundary amended	FB	CR	24/08/2023
D	Changed type of fence	SA	CR	22/08/2023
C	Hatched green area redone	SA	CR	16/08/2023
B	Revised layout with easement zones	SA	CR	14/08/2023
A	Revised Biodiversity boundary	SA	CR	20/06/2023

PHOTON ENERGY

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Project Number: I2010

Project Name: Premier Foods

Drawing By: Sara Abdel Ahad

Scale: 1:1500 @ A3

Checked By: Cathy Ross

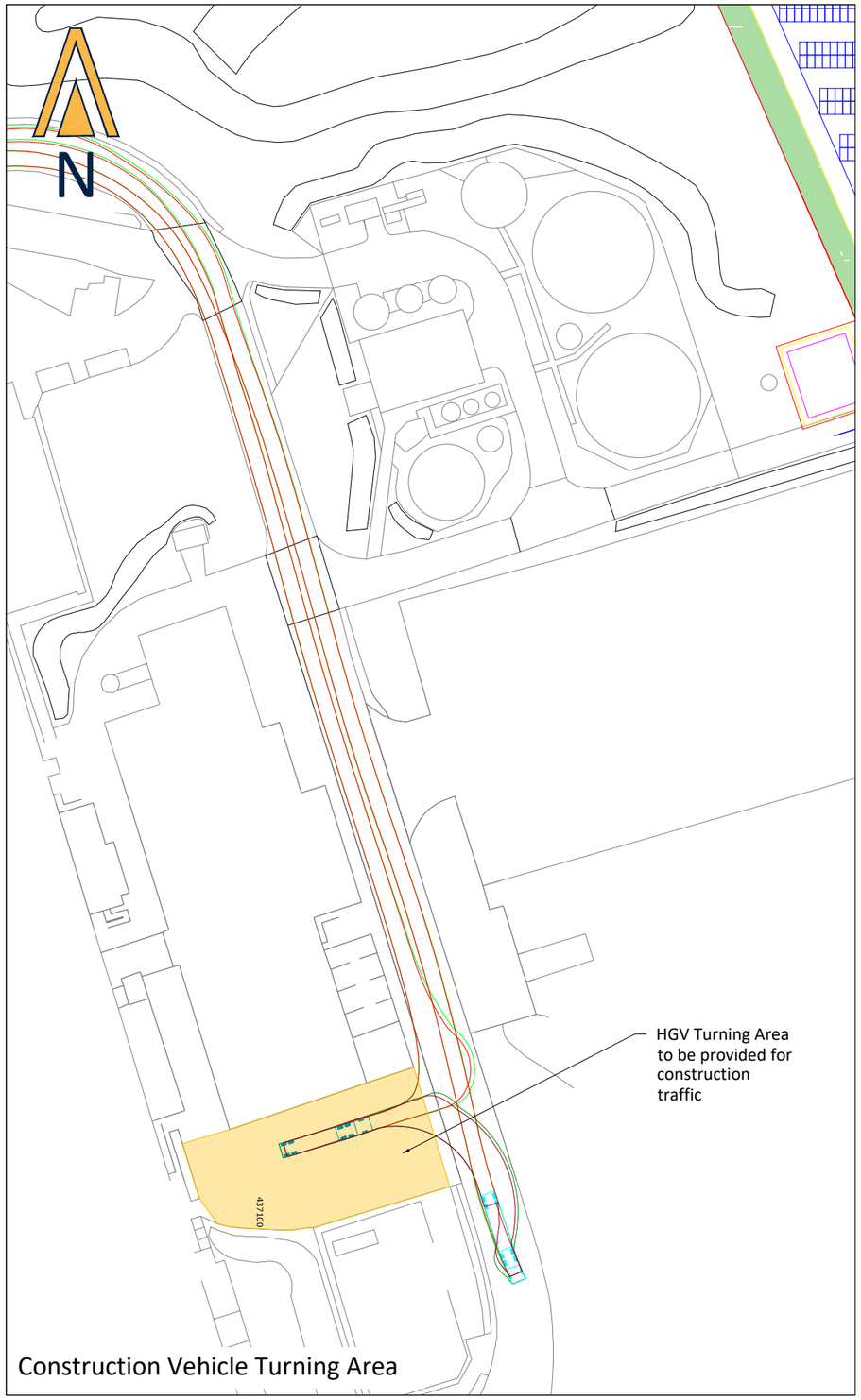
Date: 15/06/2023

Drawing Name: Planning PV layout

Drawing No: I2010-000-01

Rev: G

Appendix B – Swept Path Analysis



Construction Vehicle Turning Area

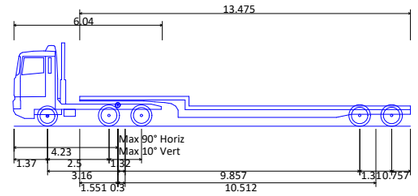


Construction Vehicle Turning Area - Prior To Solar Array Installation

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

Rev	Amendment	Drn	App	Date

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Project Name: PREMIER FOODS BAKERY SOLAR FARM

Drawing Title: SWEPT PATH ANALYSIS - LOW LOADER

Client: PREMIER FOODS PLC

Drawn by	Approved by	Date
RH	JW	01.09.2023

Scale	Job No
1:1000 @ A3	B-23-0022

Drawing No	Rev
B-23-0022-SPA-001	-

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