

Construction Traffic Management Plan

Land North and South of National Road, Cilfynydd.

On behalf of REWE 2 Limited.

Date: February 2025 | Pegasus Ref: P22-2733-TR-R001

Author: AJ



Document Management.

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1. Introduction

- 1.1. This Construction Traffic Management Plan (CTMP) has been prepared by Pegasus Group on behalf of REWE 2 Limited to consider and address where appropriate the traffic and transportation matters associated with Proposed Battery Energy Storage System (BESS) with associated infrastructure, including a substation, earthworks, access, drainage, landscaping and an underground cable route connection.
- 1.2. The built development is arranged over land north (referred to as the 'northern parcel') and south (referred to as the 'southern parcel') of National Road, as set out on the Site Location plan provided at **Appendix A**.

Background

- 1.3. This CTMP is submitted alongside a "Transport Statement" (TS) document and should be read in conjunction with that document.

Policy Context

- 1.4. The proposed BESS aligns with national and local planning policies aimed at promoting renewable energy infrastructure. At the national level, Planning Policy Wales (Welsh Government, 2024) sets out the Welsh Government's commitment to sustainable development, emphasising the importance of reducing carbon emissions and supporting renewable energy projects. Additionally, Future Wales: The National Plan 2040 sets out the national development framework for Wales including the growth of sustainable and renewable energy. Locally, the Rhondda Cynon Taf Local Development Plan (2011) supports increasing the supply of renewable energy from a range of sources. Additionally, one of the key objectives of the Caerphilly Local Development Plan (2010) is promoting environmentally acceptable renewable energy to help reduce our impact on climate change.
- 1.5. This TS and CTMP are provided with a forthcoming planning application. These will set out appropriate mitigation of the transport impacts associated with the construction and operation of the site. Therefore, the development is considered to be in accordance with national and local planning policy.

CTMP Report Structure

- 1.6. The structure of the remainder of this CTMP is set out below:
- **Section 2** – A summary of the site context including the local highway network and any existing Public Rights of Way. It considers the suitability of National Road, and further afield where relevant to accommodate the anticipated trips to / from the development proposals.
 - **Section 3** – A description of the proposed site arrangements which includes:
 - o The proposed access strategy;
 - o A description of proposed cabling;

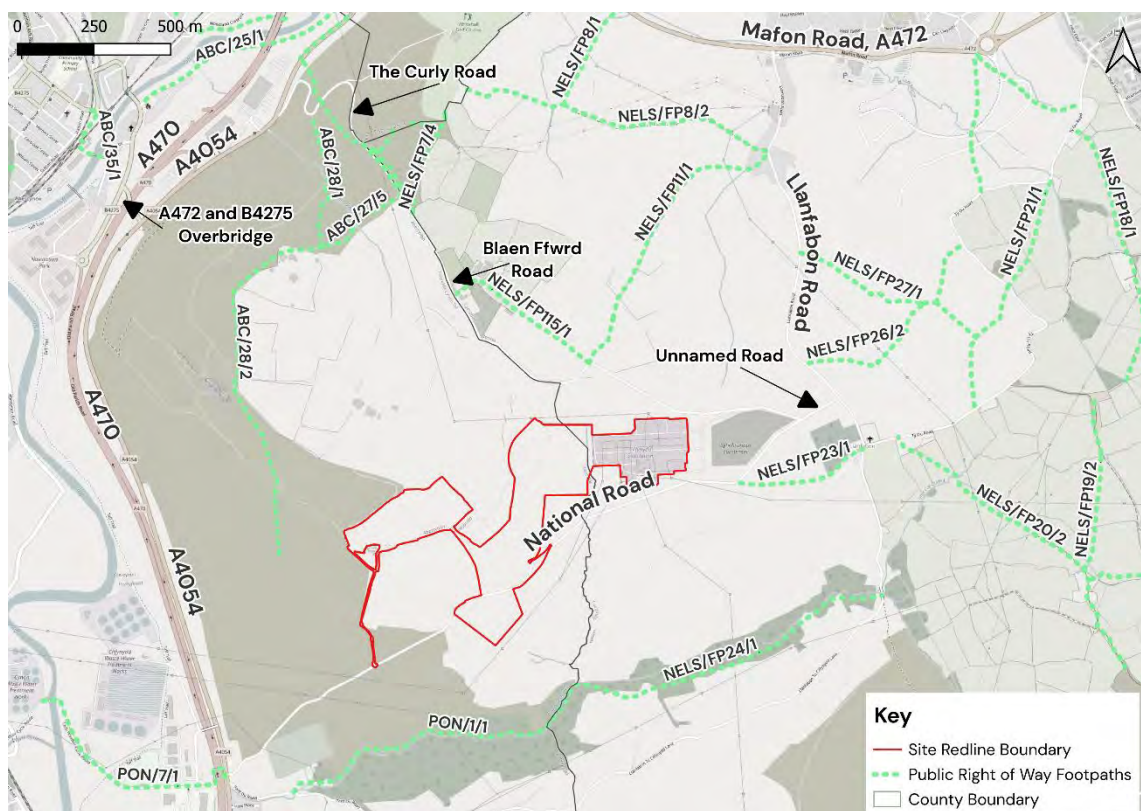
- o A description of the proposed construction routes to and from the site and site access points with visibility splays and swept path analysis; and
 - o Details of construction compounds and internal routing.
 - **Section 4** – Detail of the length of the period of construction; the expected size of the vehicles and the amount of anticipated HGV trips and construction worker trips associated with the construction period.
 - **Section 5** – Provides a summary of proposed mitigation techniques that will be employed to minimise the potential effects of the development area on surrounding highways; and
 - **Section 6** – A summary reviewing the contents of the document.
- 1.7. It will be the responsibility of the appointed contractor to comply with all statutory regulations and guidelines as appropriate, in relation to construction and movement activities.
- 1.8. The appointed contractor(s) will be provided with a copy of this CTMP and will adhere to it as part of the planning consent. The CTMP will form part of the information provided as part of the construction personnel's on-site induction processes. The contact details of the contractor, including a 24-hour emergency contact number, and those of the highway department at the Rhondda Cynon Taf County Borough Council will be exchanged before commencement of the works on the site.

2. Existing Conditions

Site Location

- 2.1. The development site is located across parcels of land north and south of National Road, referred to henceforth as “the northern parcel” and the “southern parcel” respectively.
- 2.2. The context of the local area, including points of interest referenced in the report, is illustrated in **Plate 2.1** below as well as on the Site Location Plan, included at **Appendix A**.

Plate 2.1 – Site Plan

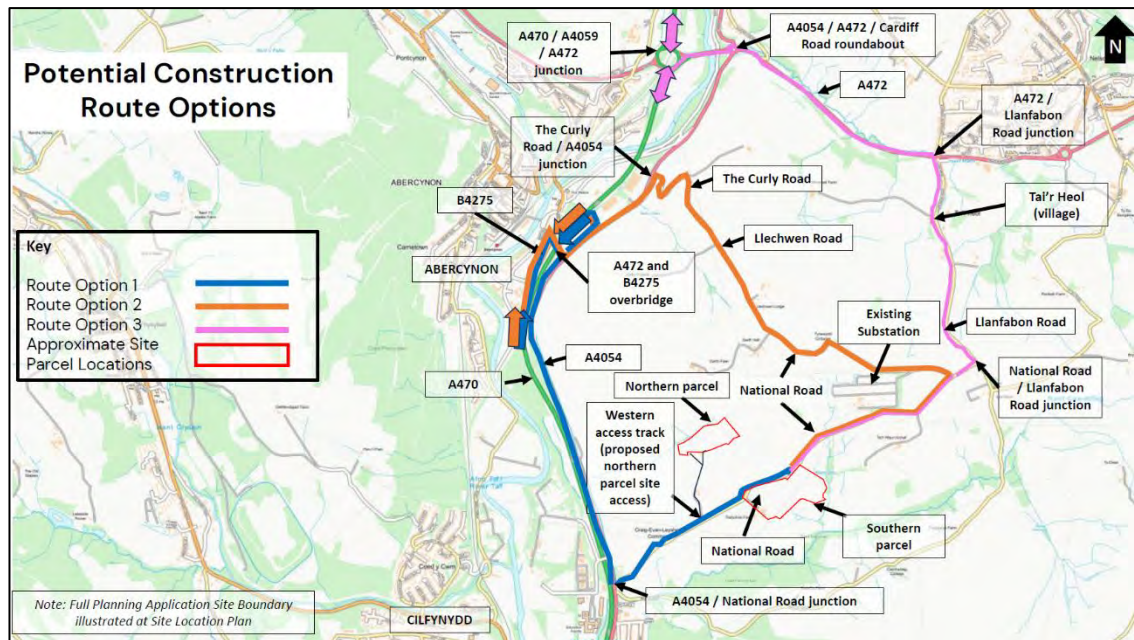


Source: OpenStreetMaps

Local Highway Network

- 2.3. As part of the scheme, three potential routes to the site have been assessed which are illustrated in **Plate 2.2** below. The assessment is set out within **Section 3** which concludes that the most preferable option for routing is Route Option 1, with Route Option 3 being a possible alternative.

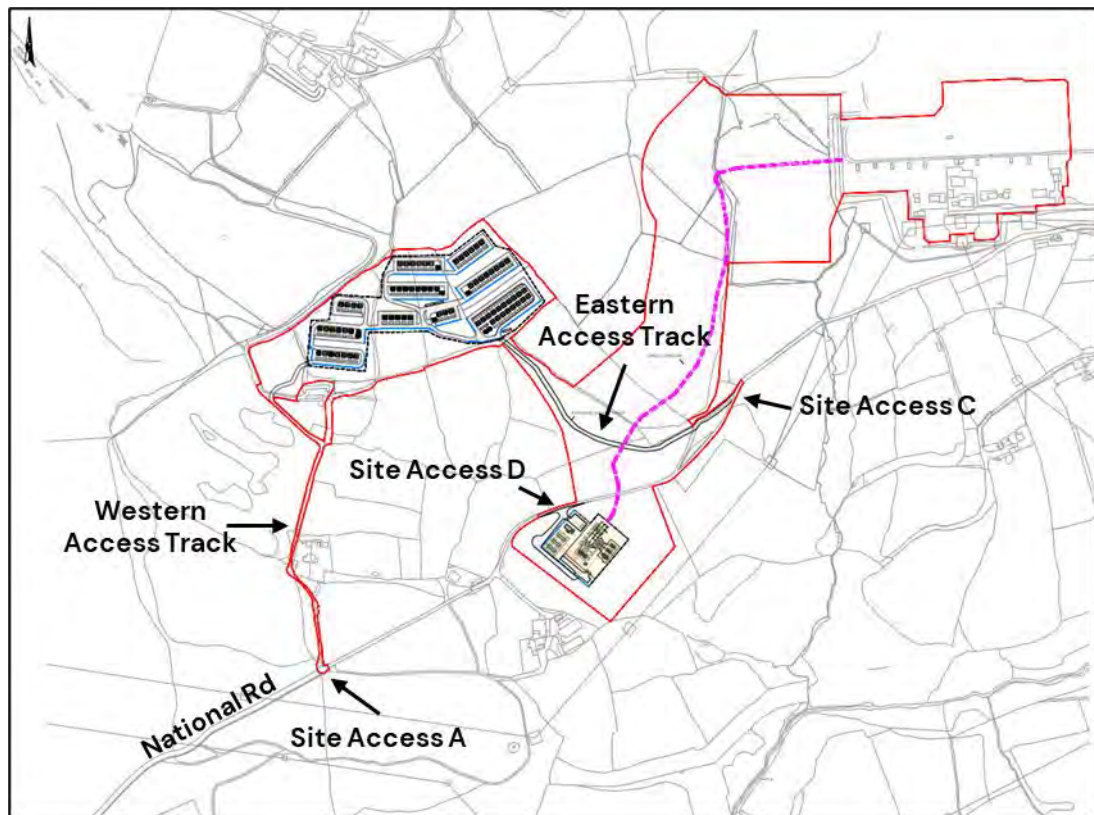
Plate 2.2 – Construction Routing Options



National Road (routing northeast / southwest)

- 2.4. National Road (routing northeast / southwest) extends 2.3km northeast from the A4054 via a simple priority T junction (minor arm) where the carriageway continues as an unnamed road for a further 150m before forming the minor arm of a simple priority junction with Llanfaban Road.
- 2.5. National Road is a two-way, single lane carriageway, measuring circa 6m southwest of the access to the site's western access track. This access track and associated site access is shown on **Plate 2.3** below and is further discussed in **Section 3 – Proposed Site Accesses**.
- 2.6. Northeast of Site Access A (which provides access to the western access track), National Road narrows to circa 2.5m through till Llanfaban Road. National Road is subject to the 60mph national speed limit for its full extent. There are no weight or height restrictions present on National Road, nor are there any footways or street lighting provided.

Plate 2.3 – Site Accesses and Access Tracks



- 2.7. To inform this CTMP, five Automatic Traffic Count (ATC) surveys were undertaken (between 14 and 20 September 2023) on National Road on either side of the two proposed site accesses (which are proposed to service the site). The results of these surveys are detailed in full in the TS, which should be read in conjunction with this report and informs the site strategy. In summary, the roads to and from the site currently facilitate between 6.8% – 16.2% HGV traffic and as such are considered to already accommodate construction type vehicles.

National Road (routing northwest / southeast) / Llanwechan Road / Blaen Ffrwdd Road / The Curly Road

- 2.8. National Road (routing northwest/southeast) proceeds from a junction with an unnamed road which connects National Road to an unnamed road (which provides connection to Llanfabon Road after circa 150m) and National Road (routing northeast/southwest) towards the northwest where it becomes Llanwechan Road, Blaen Ffrwdd Road and “The Curly Road”, before joining the A4054 as the minor arm of a ghost island (right turn) junction.
- 2.9. National Road (routing northwest/southeast) / Llanwechan Road / Blaen Ffrwdd Road / The Curly Road are two-way, single-lane carriageway roads measuring between 2.5m–4m in width and subject to the 60mph national speed limit. No weight or height restrictions are present, nor are any footways or street lighting provided.
- 2.10. National Road and The Curly Road (routing northwest / southeast) contains a section of road with limited road widths, tight bends, limited forward visibility and steep gradients which are unlikely to be able to support large HGVs.

Llanfabon Road

- 2.11. Llanfabon Road is a two-way single carriageway, measuring circa 5.5m in width and is subject to a posted 30mph speed limit within Tai'r-Heol village and the 60mph national speed limit south of Tai'r-Heol. There are no weight or height restrictions along its extents. To the north Llanfabon Road routes through Tai'r-Heol village, where it provides connection to the A472 which in turn connects with Nelson and the A470. To the south, it provides connection to an unnamed road (at a simple priority T junction) which in turn connects to National Road after 150m and a second unnamed road towards Senghenydd town.

A472

- 2.12. The A472 is a classified A road, two-way, single carriageway road measuring circa 7.3m in width and is subject to the 60mph national speed limit.
- 2.13. The A472 provides access to the A470 via the A470 / A472 / A4059 roundabout in the west and provides access to the A469 within Ystrad Mynach to the east.

A4054

- 2.14. The A4054 is a classified A road, two-way, single carriageway road which is subject to a posted 40mph speed limit within the vicinity of the junction with the A470 and 20mph within the vicinity of Cilfynydd including the junction with National Road.
- 2.15. The A4054 routes adjacent to the A470 for its full extent and provides connections to the A470 in various locations including via the A472 and B4275 overbridge before National Road and 'The Curly Road'. The A4054 also provides connections to the A472 to the north via the A4054 / A472 / Cardiff Road roundabout.

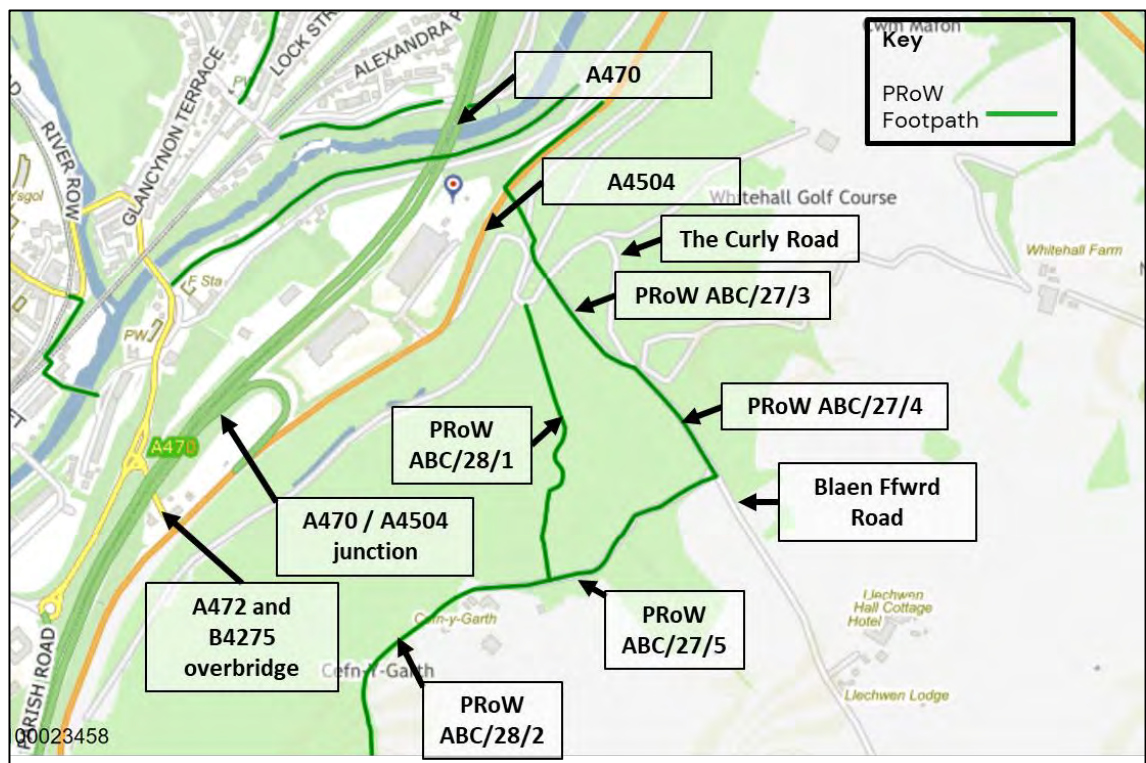
A470

- 2.16. The A470 is a classified A road, dual carriageway trunk road, each carriageway measuring circa 7.3m in width. To the south, the A470 connects to the M4, near Cardiff and to the north it provides access to Merthyr Tydfil. The A470 is subject to the 70mph national speed limit and comprises part of the Welsh Strategic Highway Network (SHN).

Public Rights of Way

- 2.17. No Public Rights of Way (PRoW) route through either parcel of the development site, according to the RCTCBC Public Rights of Way Map (accessed 28 January 2025).
- 2.18. **Plate 2.1** above illustrates the PRoW within the vicinity of the site, with **Plate 2.4** below establishing and identifying existing PRoW which are pertinent to the construction routes within this report. This is a zoomed in extent, please refer to **Plate 2.1** for a wider extent which includes the site. For context, the site is located to the south of this zoomed-in extent. The extent includes a PRoW footpath (reference: ABC/27/4) that routes along a section of Blaen Ffrwdd Road for circa 100m. PRoW ABC/28/1, ABC/27/3 and ABC/27/5 connecting to Blaen Ffrwdd Road / The Curly Road.

Plate 2.4 – Public Rights of Way map on Blaen Ffwrdd Road / The Curly Road



Source: Excerpt from the Rhondda Cynon Taf County Borough Council PRoW Map (accessed 27/09/2023), annotated with relevant PRoW references and road names

- 2.19. To view a wider extent of these PRoW in relation to the proposed site please refer to **Plate 2.1**.

Highway Safety

- 2.20. Highway safety has been assessed within the Transport Statement, which concludes that there are no existing safety issues at the proposed access points or construction routes which could be exacerbated by the proposed development

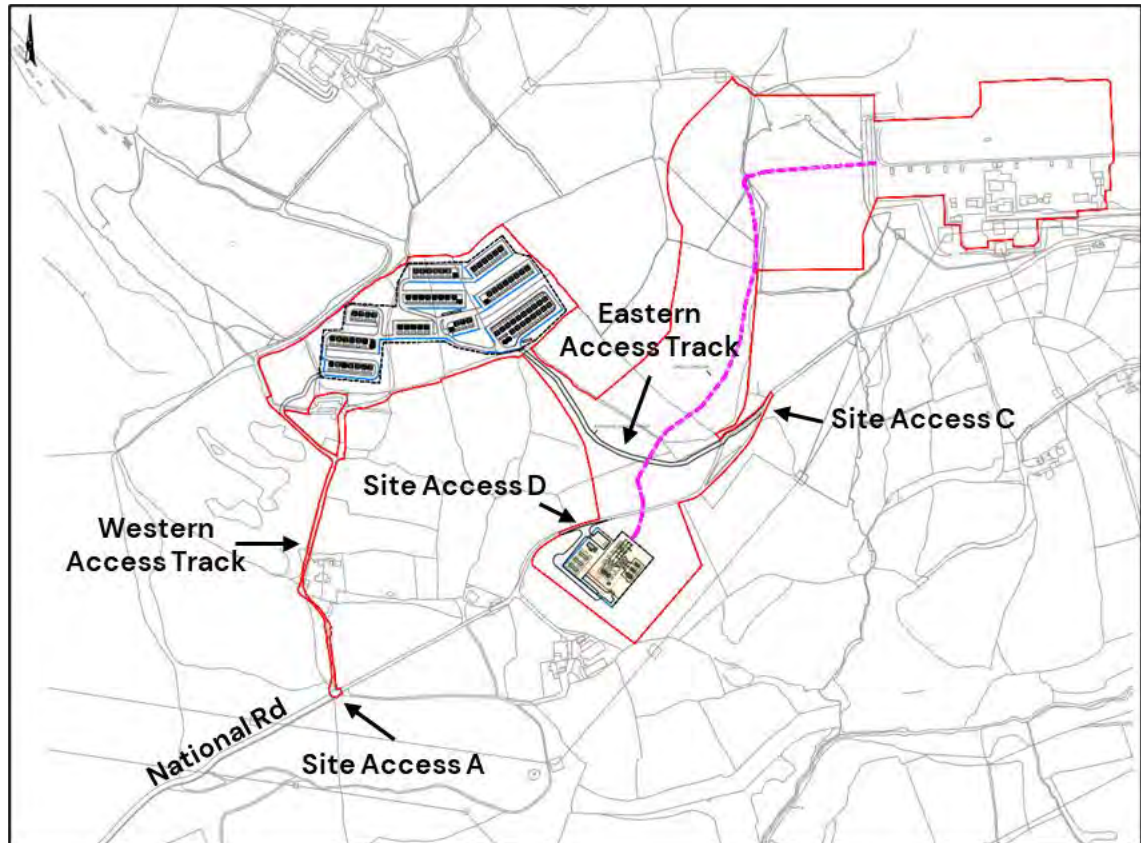
Summary of Existing Site Context

- 2.21. The local highway network is considered safe and suitable for the trips associated with the proposed development, with no existing highway safety issues identified within the vicinity of the site accesses or approaching / departing the site via National Road which is proposed to form the construction route to / from site.
- 2.22. The roads to and from the site currently facilitate between 6.8% – 16.2% HGV traffic and as such already accommodate construction type vehicles. Therefore, it is concluded that the development construction and operational traffic can be adequately and safely accommodated by the local highway network.

3. Site Access and Construction Traffic Routing

- 3.1. The development proposals are a proposed BESS with associated infrastructure, including a substation, earthworks, access, drainage, landscaping and an underground cable route connection.

Plate 3.1 – Site Layout Plan Extract with Additional Annotations



(Drawing Reference: WIN-SOL-02-DR-03-01-01)

- 3.2. The client has confirmed that they have the necessary rights of access to the site and will be in a position with neighbouring landowners to implement this as necessary.

Proposed Site Accesses

- 3.3. For the site access visibility splays, the recommended Stopping Sight Distances (SSD) have been calculated using Manual for Streets (MfS) (based on calculations for HGV SSD for roads with >5% HGVs, which in turn is based on ATC evidence set out within the TS).
- 3.4. The ATCs indicate slow vehicle speeds on the carriageway therefore allowing MfS to be applicable and appropriate to use for SSD values). The data summaries of the ATC data is provided at **Appendix B**.

- 3.5. Further details are provided in the Transport Statement which should be read in conjunction with this CTMP. The calculated required visibility splays parameters in accordance with MfS and TAN 18 are set out in **Table 3.1 and 3.2**.

Northern Parcel Site Accesses

- 3.6. Automatic Traffic Count (ATC) surveys were undertaken on National Road (for a seven-day period beginning the 14 September 2023), demonstrating the measured 85th percentile vehicle speeds.
- 3.7. The measured 85th percentile speeds were significantly below the 60mph national speed limit of National Road within the vicinity of the northern parcel site access.
- 3.8. In accordance with TAN 18 (paragraph B.3), SSD have been calculated utilising MfS which has determined the recommended visibility splays of for each of the site accesses to the northern parcel, as set out at **Table 3.1**.

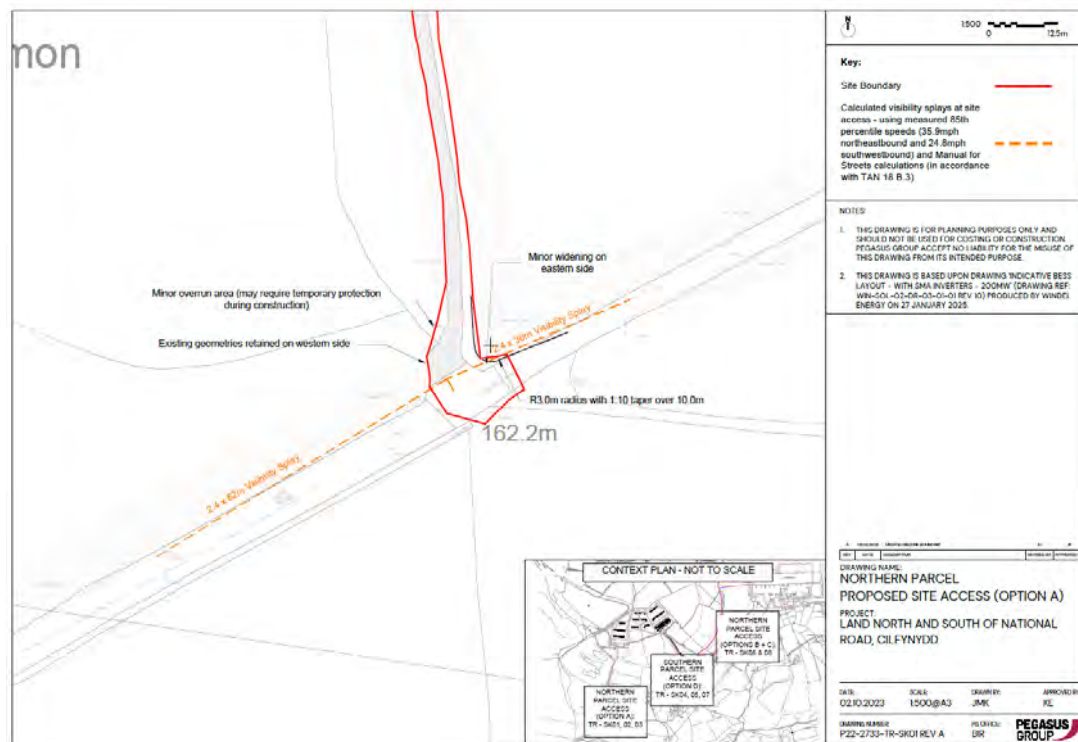
Table 3.1 – Required visibility splay based on measured 85th percentile speeds and Manual for Streets (in accordance with TAN 18) – northern parcel accesses

Site Access Option	Visibility Splay direction	Measured 85 th Percentile Speed (7-day average) (mph)	Calculated Recommended Visibility Splay (MfS)
"Site Access Option A"	SW of the access	35.9	2.4m x 62m
	NE of the access	24.8	2.4m x 36m
"Site Access Option C"	SW of the access	28.2	2.4m x 43m
	NE of the access	24.7	2.4m x 36m

Note: Direction of traffic abbreviated to northeast (NE) and southwest (SW)

- 3.9. Drawings SK01, SK02 and SK06 provided in **Appendix C** illustrate the site accesses and recommended visibility requirements (based on TAN 18 and MfS), as set out in **Table 3.1** above, are achievable for the site accesses.
- 3.10. The main vehicular access to northern parcel is proposed to be taken from "Site Access Option A", via the existing access from National Road (via the western access track) located 600m northeast of the National Road / A4054 junction. An extract of the drawing is provided in **Plate 3.1** below for ease of reference below with the full drawing provided in **Appendix C**.

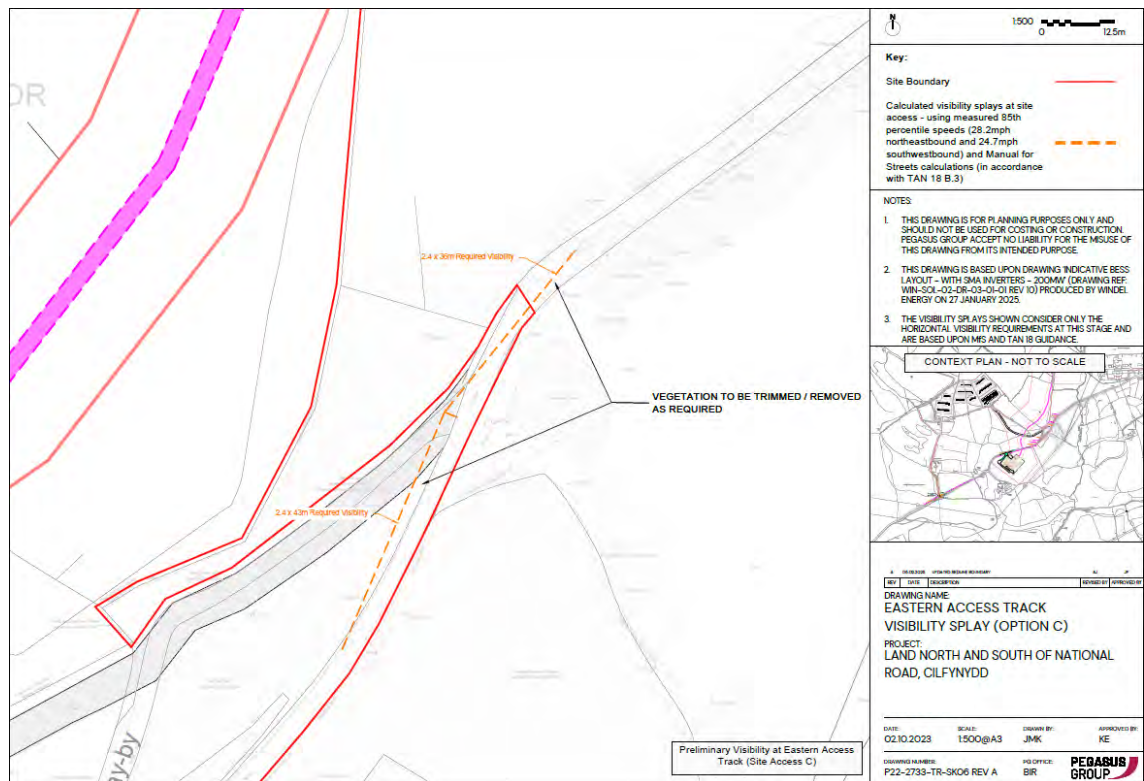
Plate 3.1 – Extract of Proposed Main Site Access to Northern Parcel – “Site Access Option A”



Source: Drawing Reference P22-2733-TR-SK01 REV A

- 3.11. The access will be retained as existing with minor modifications, as shown in drawing P22-2733-TR-SK01 (**Appendix C**). The existing access geometries are to be retained on western side of the access and the grass and gravel is to be made hardstanding. Minor widening of the eastern side of the junction is proposed in order to facilitate a 16.5m x 2.55m articulated HGV, which is the most onerous vehicle proposed to access the site.
- 3.12. Drawings SK02 and SK03, included in **Appendix D**, set out Swept Path Analysis for a 16.5m length HGV (the most onerous vehicle anticipated to require access to the site) and demonstrate vehicles can access the site in forward gear without blocking the public highway.
- 3.13. SK02 also demonstrates that a 16.5m length HGV entering the site can suitably navigate the western access track whilst a second 16.5m length HGV, waiting to exit, remains stationary in a designated waiting area circa 80m north of the access. Drawing SK03 also demonstrates that a 16.5m length HGV, exiting the site, can suitably navigate the western access track whilst a second 16.5m length HGV, waiting to enter, waits in a designated waiting area circa 80m north of the access. However, it should be noted that inbound vehicle movements will be prioritised through the delivery management plan.
- 3.14. A secondary/emergency site access will also be established from National Road at a location referred to as “Site Access Option C”, which is illustrated on Drawing SK06, included at **Appendix C**, with an extract provided below for ease of reference.

Plate 3.2 – Extract of the proposed Secondary/Emergency Access to Northern Parcel – “Site Access Option C”



Source: Drawing Reference: P22-2733-TR-SK06-REV A

3.15. As set out in **Table 3.2** and in accordance with TAN 18, visibility splays of 2.4x43m are illustrated southwest of the site access and 2.4mx36m northeast of the access.

3.16. Drawing SK08 included at **Appendix D** demonstrates the swept path analysis for a 7.7m Fire Tender vehicle. These show that vehicles can access the site in forward gear. The drawing notes that vegetation trimming will be required in an overrun area.

Southern Parcel Site Access

3.17. Vehicular access to the southern parcel is proposed to be taken from National Road via a new simple priority junction (“Site Access Option D”). The location for this access is circa 900 metres northeast of the A4054 / National Road junction.

3.18. Automatic Traffic Count (ATC) surveys were undertaken on National Road (for a seven-day period beginning on 14 September 2023), which provide the existing 85th percentile vehicle speeds. In accordance with TAN 18 (paragraph B.3), SSD has been calculated utilising MfS, which has determined the recommended visibility splays for the proposed access to the southern parcel, as set out at **Table 3.2**.

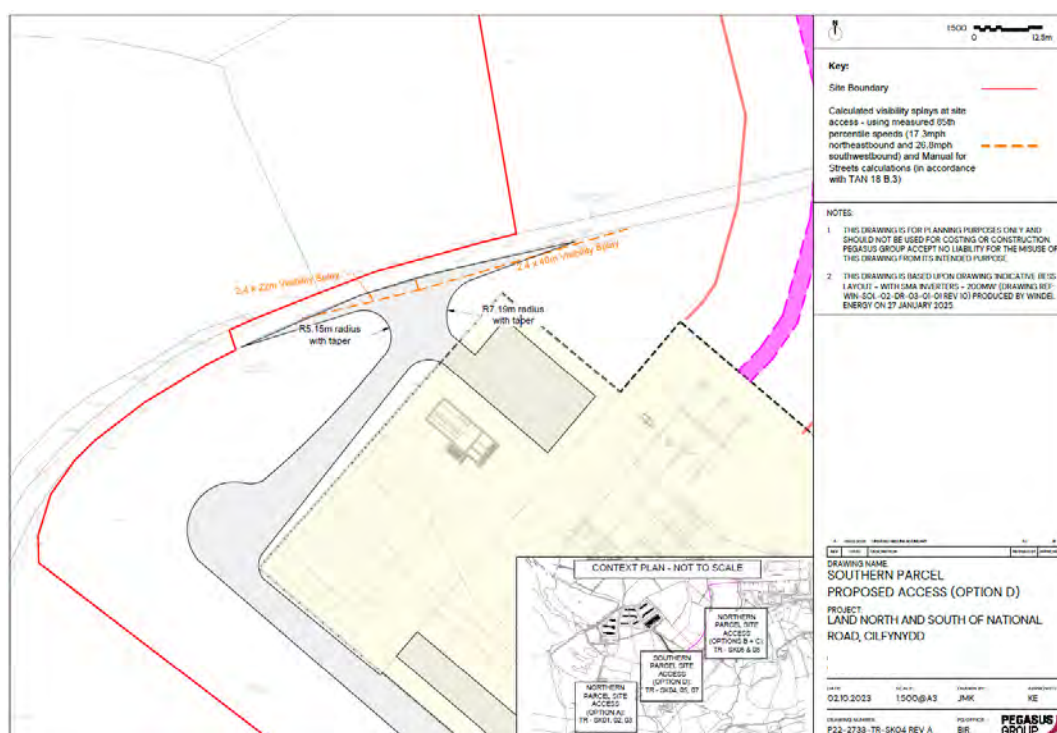
Table 3.2 – Required visibility splay length based on measured 85th percentile speeds and Manual for Streets (in accordance with TAN 18) – southern parcel access

Road and distance from National Road / A4504 junction	Visibility Splay direction	Measured 85 th Percentile Speed (seven day average) (mph)	Calculated Recommended Visibility Splay Length (MfS)
Site Access Option D	SW of the access	17.3	2.4m x 22m
	NE of the access	26.8	2.4m x 40m

Note: Direction of visibility abbreviated to northeast (NE) and southwest (SW)

- 3.19. As set out in **Table 3.2**, and in accordance with TAN 18 (paragraph B.3), recommended visibility splays have been calculated utilising MfS which has determined that visibility splays of 2.4m x 22m are required to the southwest of the proposed northern access and 2.4 x 40m to the northeast. This is demonstrated to be achievable at drawing SK04 at **Appendix C**. An extract of the drawing is provided in **Plate 3.3**. There is vegetation less than 0.6 metres in height, requiring minimal to no vegetation trimming, thus minimising landscape and ecological impacts.

Plate 3.3 – Extract of Proposed Southern Parcel Access



Source: Drawing Reference: P22-2733-TR-SK04 REV A

- 3.20. Drawings SK05 and SK07, included in **Appendix C**, demonstrate Swept Path Analysis for a 16.5m x 2.55m articulated HGV (the most onerous vehicles anticipated to require access to the site) which shows that vehicles can access the site in forward gear and therefore the access is achievable in a safe and suitable manner for the most onerous HGVs anticipated to use the site.

- 3.21. It should be noted that during the construction phase, vehicles will be able to utilise a wider internal area than shown.

Operation Phase Access

- 3.22. During the operation phase, the accesses will be used for operational purposes following the completion of the site construction period. The site is proposed to generate 1 LGVs trip per month, equivalent to 12 per year, which is not anticipated to materially intensify the existing traffic on National Road, and therefore, no further work will be required post-construction.

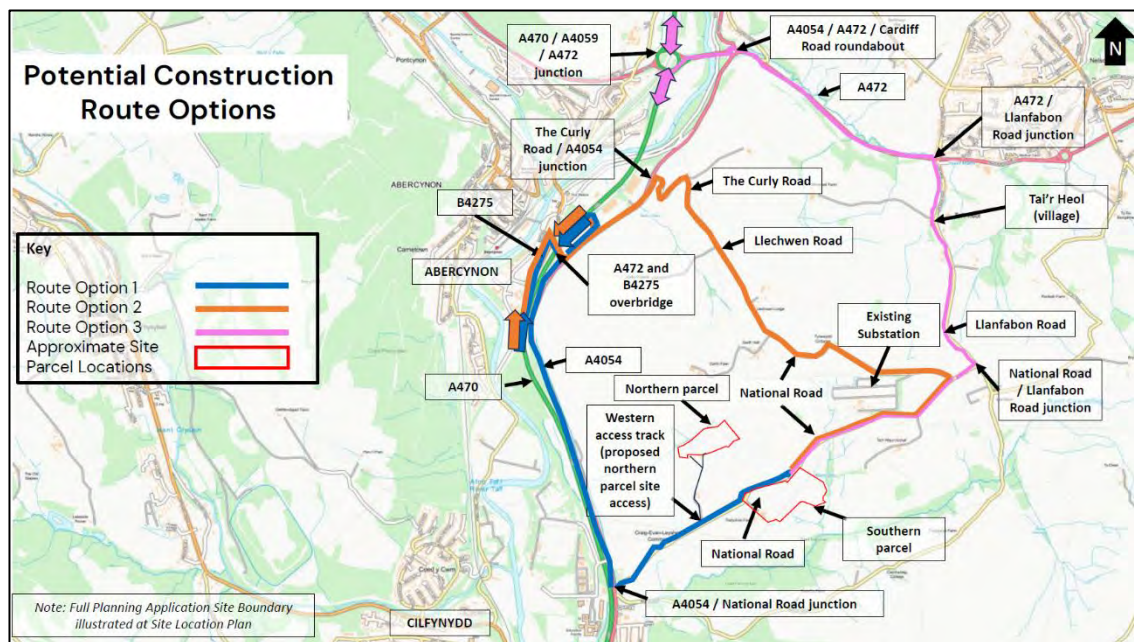
Cable Routing

- 3.23. The impacts of laying the cable route would be temporary and is anticipated to last 5–8 weeks per mile of 33KV cable and 10 – 15 weeks per mile of 400KV cable. If required, suitable temporary traffic management measures would be implemented to ensure safe operation and to reduce the impact of the cable route works on the local highway network as far as is reasonably practical. However, it is currently anticipated that the cable route will be mainly through private land and will only route across public highway between the northern and southern development parcels.
- 3.24. It will be the responsibility of the appointed contractor to comply with all statutory regulations and guidelines as appropriate in relation to construction and movement activities.

Construction Traffic Route

- 3.25. An illustration of the construction traffic route plan is shown at **Appendix E** and provided in **Plate 3.4** below. The construction traffic route plan considers multiple different options for routing to determine a preferred option for construction routing, of which the assessment is set out below.

Plate 3.3 – Potential Construction Route Options



Route Option 1 (Preferred)

3.26. Route Option 1 from the A470 is illustrated in blue and can be described as:

- The route to the proposed sites begins at the A470;
- Construction traffic will exit the A470 via a slip road near Abercynon where it reaches a roundabout where it will take the second exit onto the B4275;
- Traffic will turn right at the bridge before turning right onto the A4054;
- Traffic will route along the A4054 for circa 2km before turning left onto National Road;
- Traffic will continue along National Road for circa 1km before turning into one of the accesses set out above.

3.27. Route Option 1 largely uses roads which route through an area which is predominantly agricultural in nature and avoids residential areas once it leaves the A470 exit at Abercynon.

3.28. It should be noted that National Road passes over Nant Ddu (a stream) via a bridge. No weight restriction, height restriction or width restriction signage was in place at the time of the site visit and therefore the bridge is considered to be suitable to accommodate HGV construction traffic.

Route Option 2

3.29. Route Option 2 from the A470 is illustrated in orange. It can be described as:

- Construction traffic will exit the A470 via a slip road near Abercynon where it reaches a roundabout where it will take the second exit onto the B4275;

- Traffic will turn right at the bridge before turning left onto the A4054;
- It will continue on the A4054 for circa 350m before turning right onto The Curly Road;
- Traffic will continue on The Curly Road / Blaen Ffrwd Road / Llechwen Road / National for circa 2.2km; and
- Traffic will turn right onto National Road on which it will continue for circa 1km before turning into one of the accesses set out above.

3.30. Route Option 2 largely uses roads which route through an area which is predominantly agricultural in nature and avoids residential areas where possible. However, 'The Curly Road' is not likely to adequately support the most onerous vehicle anticipated to serve the site due to the steep gradient, limited road widths, tight bends, and limited forward visibility due to the road layout.

Route Option 3 (Alternative)

3.31. Route Option 3 from the A470 is illustrated in pink and can be described as:

- The route to the proposed sites begins at the A470;
- Construction traffic will exit the A470 at the A470 / A4059 / A472 roundabout where it will take the third exit onto the A472;
- Traffic will continue along the A472 for circa 1.5km until it reaches Llanfabon Road where it will turn right;
- Traffic will continue along Llanfabon Road for circa 1km until it reaches the Llanfabon Road / National Road junction;
- Traffic will continue on National Road for circa 1.5km before turning into one of the accesses set out above.

3.32. Route Option 3 passes via the village of Tai'r-Heol, at which point Llanfabon Road is subject to informal parking on both sides of the carriageway. Llanfabon Road is also subject to areas of low tree canopy, which may require trimming / further mitigation, and overhead lines (OHL), which may require additional consideration (subject to the proposed maximum vehicle height which is to be confirmed by the Applicant).

3.33. Route Option 3 is shortest route to the site (when measuring from the A470) out of the three routes discussed above.

Route Options Comparison

3.34. Traffic is proposed to exit the site using the inverse the routes set out above.

3.35. Route Option 2 routes via "the Curly Road" which was determined from a site visit to have multiple potential constraints including steep gradients, limited road widths, tight bends, and limited forward visibility due to the road layout, thereby being unsuitable for the anticipated 16.5m HGV construction routing. For these reasons, from a transport perspective, Route Option 2 is not recommended.

- 3.36. Route Options 1 and 3 both have advantages and constraints but are considered to be suitable. At this stage, Route Option 1 is the preferred option as it does not route through any residential areas, whereas Route Option 3 routes through Tai'r-Heol.

Construction Compounds and Internal Routing

- 3.37. RCTCBC Highways commented that *“submitted plans should clearly define the location and number of off-street parking spaces, together with turning area(s) to enable vehicles to leave the site in a forward gear”*.
- 3.38. During the construction phase, vehicles will be instructed not to park on any public highway within the vicinity of the site. Designated car parking areas will be provided within the site for workers. Visitors will be advised of the parking arrangements in advance of travelling to the site.
- 3.39. The compound will be suitable for an articulated vehicle to enter, turn and exit in a forward gear and will also include areas for the storage of plant and equipment, where necessary.

4. Vehicle Trip Generation

Construction Phase

Forecast Construction Traffic

- 4.1. The construction phase is anticipated to last approximately 12 months.
- 4.2. The daily average forecast one-way deliveries during the construction period is 27 vehicles. This equates to 54 daily average two-way vehicle movements.
- 4.3. Deliveries are anticipated to occur between 08:00–17:00 from Monday to Saturday.
- 4.4. The peak number of daily two-way construction trips is anticipated to be up to circa 82 two-way construction vehicle trips per day.
- 4.5. Therefore, for the purpose of robustness, the peak vehicle movements of 82 two-way construction vehicle trips are used for this CTMP. However, it should be acknowledged that this is temporary and the average over the whole construction period will be significantly lower.

Vehicle Mix

- 4.6. The maximum sized (non-ALL) construction-related vehicle is anticipated to be a rigid mobile crane that is 14.87m x minimum length and 2.75 m in width, however smaller HGVs, rigid trucks and LGVs will be used where possible.
- 4.7. For robustness, it has been demonstrated as above that a 16.5m length articulated HGV can safely enter and exit the proposed site (drawings provided in **Appendix D**) as the most onerous vehicle proposed to access the site.
- 4.8. Deliveries shall be reported to the site manager and will be made on the smallest possible vehicles for each item or volume. However, it should be acknowledged that the use of larger vehicles will, in some instances, allow additional items and materials to be transported together, reducing the overall number of trips to the site.

Forecast Staff Trips

- 4.9. An average of 50 and a maximum of 150 construction operatives during the peak are anticipated to be on-site on a single day.
- 4.10. It is proposed to transport staff to site via minibuses. For the purposes of this report, it has been assumed that staff will be transported to and from site via car/van sharing as well as using 10-seater minibus, although the details will be confirmed at a later date. Under these assumptions, during the peak of the construction period, staff commuting trips will contribute up to an additional 15 vehicle arrivals in the morning and 15 vehicle departures in the evening, totalling 30 trips per day. At this stage, operatives are proposed to work on site for a six-day work week from Monday to Saturday.

Forecast Increase in Traffic on National Road

- 4.11. During the peak construction period, the site is forecast to generate up to 112 two-way daily vehicle trips (comprising 82 construction trips and 30 staff trips).
- 4.12. The number of trips per day will fluctuate depending on the construction phase, and as such, it should be noted that the average daily trips for the majority of the construction period will be significantly lower.
- 4.13. The traffic associated with the site is temporary in nature and will occur during the construction period only. Therefore, with appropriate mitigation set out in this CTMP, it is not anticipated to have an undue effect on the safety and operation of the existing local highway network.
- 4.14. Construction traffic is proposed to route via the A470. The A470 comprises part of the SHN. Once traffic reaches the A470, trips will dissipate along the wider SHN. Background traffic and HGV volumes along the SHN are likely to be significantly higher, and therefore, the development impact will represent a lower percentage impact. The development impacts during the temporary construction phase are, therefore, not considered to have a material impact.

Assessment of Cumulative Traffic Impacts

- 4.15. We are aware of a potentially relevant planning applications in terms of transport which have been submitted/approved in the region at the time of writing, which is:
 - 23/O427/DNS – Twyn Hywel Wind Farm
- 4.16. An assessment of transport impacts of the proposed site in relation to this site will be undertaken and an appropriate consideration of cumulative transport impacts will be provided in the CTMP within four weeks prior to construction commencing on site. This is because more relevant/up-to-date information on the construction programme will be available at that time. From an initial assessment, the construction traffic associated with this wind farm is not proposed to route via National Road and therefore any cumulative impacts would occur on major A-roads which have a higher design specification and are suitable for accommodating heavy goods vehicles and construction traffic.

Operational Phase

- 4.17. The same accesses will be used during the operational phase as the construction phase. It is anticipated that the sites will operate predominately by remote access and is only visited on an occasional basis with minimal effect on the surrounding local network, it is anticipated that there could be 1 LGVs accessing the sites per month, equating to up to 12 LGV trips per year in the operational phase.
- 4.18. Operational visits will be undertaken by maintenance staff in vehicles which are unlikely to be larger than 7.5t vans. HGVs are not anticipated to be required during the operational phase, unless in the event of a replacement of a major component.
- 4.19. There will be sufficient space within the sites to allow for operational vehicles and service vehicles to enter, manoeuvre, park and subsequently exit the site in forward gear. There is



also an emergency access provided, which is suitable for fire tender vehicles to ingress and egress as shown on Drawing SK08, available at **Appendix D**.

5. Proposed Mitigation Works

- 5.1. A comprehensive package of mitigation measures will be implemented to minimise the effects of construction works on the local highway network if deemed necessary. The arrival and departure of HGVs at the site will be strictly managed by the Site Manager(s).
- 5.2. All HGVs will be routed via the A470, avoiding urban areas where possible to minimise the effects of HGV traffic on the local highway network.
- 5.3. The contractor that is appointed to carry out the development works will introduce measures to minimise the effect on the local highway network resulting from construction activities as necessary. These will be managed by the Project Manager and the Site Manager.
- 5.4. The Site Manager will assume responsibility for the operation of the site. The details of the Site Manager will be provided to the Local Highway Authorities (LHA) for each site in advance of any works being carried out.
- 5.5. Additional mitigation measures could be anticipated to include a variety of measures to be agreed between the contractor and LHA's in due course. This could typically include:
 - i. Construction signage will be placed at strategic locations along the route for vehicles approaching the site, in accordance with the relevant Transport Wales guidance. All signs installed as part of the construction phase will be temporary and placed outside of visibility splays. Construction signage could include a combination of the following typical examples.
 - o Transport Wales Drawing Reference WAG/P 7305 "Route for Works Traffic"; and
 - o Transport Wales Drawing Reference WAG/P 7301 "Works Access and Variants".
 - ii. Contractors and visitors will be provided with a route plan in advance of delivering to site to ensure that vehicles follow the proposed routes;
 - iii. A compound area for contractors and visitors will be set up on-site, including appropriate parking spaces. Contractors and visitors will be advised that parking facilities will be provided on-site in advance of visits and that they should not park outside of designated parking provisions;
 - iv. The sites will be secured at all times with appropriate security fencing;
 - v. There will be a requirement for engines to be switched off when not in use;
 - vi. If ground conditions dictate, wheel washing facilities will be provided in the form of a portable automated high-pressure washer with motion sensors to conserve water. All construction vehicles will therefore have to exit through the wheel wash area and as such will reduce the spread of mud and dirt onto the local highway network;



- vii. A delivery management plan will be implemented to reduce the likelihood of two vehicles meeting at the site accesses. This will be actively managed to mitigate the risk of conflict and promote the unimpeded flow of traffic to and from the site. A communication strategy will be established between the vehicles and the site manager to further aid this.
- viii. A holding area may be implemented on the western access track to allow for exiting vehicles to wait, while other vehicles enter the site. Delivery drivers leaving site would remain within the holding area until advised to route to National Road (via radio link);
- ix. Additionally, a holding area could be provided within the site boundaries (within the construction compounds) for vehicles within the site waiting to exit while vehicles route to the site, to avoid vehicles meeting on the route or at the access;
- x. Traffic management such as Bankspersons could be provided during the construction phase if required, subject to a suitably worded condition. Bankspersons will be situated as necessary when construction vehicles are accessing the site, including at the National Road accesses Bankspersons will be also appropriately placed within the internal extents of the site. The quantity of Bankspersons and the areas which they will cover will be determined by the contractor at a later date;
- xi. Spraying of internal areas with water supplied as and when conditions dictate to prevent dust accumulation;
- xii. Vehicles carrying any loads that have a risk of shedding materials in transit will be sheeted as appropriate; and
- xiii. Information to local residents.

6. Summary

- 6.1. This Construction Traffic Management Plan (CTMP) has been prepared by Pegasus Group on behalf of REWE 2 Limited to consider and address where appropriate the traffic and transportation matters associated with Proposed Battery Energy Storage System (BESS) with associated infrastructure, including a substation, earthworks, access, drainage, landscaping and an underground cable route connection. It should be considered in conjunction with the Transport Statement provided for the site.
- 6.2. This CTMP is considered to be compliant with national and local policy.
- 6.3. The built development is arranged over parcels of land to the north and south of National Road. Three vehicle accesses are proposed in total, including:
- The main vehicle access to the northern parcel is proposed via an existing access (Site Access Option A);
 - Secondary/emergency vehicle access to the northern parcel is proposed via National Road at a location 1.3km northeast of the National Road / A4054 junction;
 - Access to the southern parcel is proposed to be accessed via a new access from National Road (Site Access Option D).
- 6.4. The proposed access arrangements are considered suitable to accommodate the construction and operational related trips associated with the proposed development.
- 6.5. Drawings illustrating the visibility splays at each site access have been provided at **Appendix C**. These have been calculated utilising Manual for Streets in accordance with Traffic Advisory Note 18 and demonstrate that the proposed site accesses on National Road achieve sufficient visibility for construction and operational vehicles to utilise in a safe manner.
- 6.6. Swept path analysis for a 16.5m length HGV has been undertaken (shown at **Appendix E**) which shows that turning into and out of the accesses to / from National Road is achievable in a safe and suitable manner. Swept path analysis of the secondary/emergency access for a 7.7m Fire Tender vehicle has also been demonstrated.
- 6.7. All vehicles will approach the site from the A470, identified as part of the SHN. Traffic will route from both northbound and southbound directions on the A470 to the northern and southern parcels of the site via the route(s) set out at **Appendix E**.
- 6.8. Additional traffic on the local highway network generated during the construction phase is expected to reach a peak of circa 112 two-way daily movements during the peak, including circa 30 two-way staff movements. Average daily flows throughout the construction period are forecast to be significantly lower. With the mitigation measures set out in the CTMP accompanying this report, the local highway network is suitable to accommodate the temporary increase in traffic movements associated with the construction phase.
- 6.9. Suitable mitigation will be provided in order to minimise the effects of the proposed construction on the local highway network including appropriate signage, site construction



compounds and facilities. Mitigation measures will be agreed upon and finalised between the appointed contractor and RCTCBC.

- 6.10. This CTMP includes details on the duration of construction; the amount and type of vehicles required during and after construction; delivery route for HGVs; Swept Path Analysis of haulage routes; temporary mitigation and traffic management; and details of the proposed access to both land parcels including Swept Path Analysis and visibility splays in accordance with TAN 18 85th percentile speeds.
- 6.11. In summary, this CTMP is considered to suitably demonstrate that safe delivery of components can be undertaken without any foreseeable risk to highway users, and, therefore, it is considered that there are no valid highway or transportation reasons which would prevent the proposed development of the site.



Appendix A – Site Location Plan

A1



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NOTES:

1. ALL DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO INSTALLATION.
2. ALL DIMENSIONS ARE INDICATIVE AND IN METERS UNLESS STATED OTHERWISE.

LEGEND:

- RED LINE BOUNDARY
- ACCESS
- LOCATION OF ACQUSTIC FENCING
- 9M WIDE ACCESS TRACK
- LOCATION OF SECURITY FENCING
- 40K SPARE PARTS CONTAINER
- 3 BESS CONTAINERS IN BACK TO BACK ARRANGEMENT
- INVERTER/TRANSFORMER STATION (SMA)
- AUXILIARY TRANSFORMER
- INDICATIVE 40KV CABLE ROUTE
- Yellow Area indicates Substation area, for details see equipment phase one substation plan and elevations.

10	17-01-25	WS	MS	LS
RED LINE AMENDED				
09	20-01-25	WS	MS	LS
RED LINE AMENDED AND 40KV ROUTE ADDED				
08	12-01-24	WS	LS	JK
KEY AMENDED AND FENCING AMENDED				
07	01-08-24	WS	LS	JK
ANNOTATION AMENDED				
06	01-01-24	WS	LS	JK
ACQUSTIC FENCING BROWN				
05	01-08-24	WS	LS	JK
RED LINE CHANGED				
04	02-02-24	WS	LS	JK
TRACKS AMENDED FOLLOWING LIFTING STYLE				
03	08-11-25	WS	LS	JK
SITE DROPPED TO 200MM				
02	12-10-23	WS	LS&S	GT
AMENDED FOR LEVELLING				
01	20-09-23	WS	LS&S	GT
FIRST ISSUE				
REV	DATE	BY	CHECKED	APPROVED
 Wind Energy				
D10 Duh Montpelier, Commissioners Quay, Quay Road, Bally NE24 3AG Phone: +44 (0) 191 661 6200 www.windenergy.co.uk				
CL:RMT BONE 2 LIMITED				

PROJECT TITLE
CLP/IND10

DRAWING TITLE
INDICATIVE BESS LAYOUT - WITH SMA INVERTERS - 200MM

SCALE @ A1
1:200

JOB NO:	REV
02	10

DRAWING NO:
WIN-026-02-02-01-01



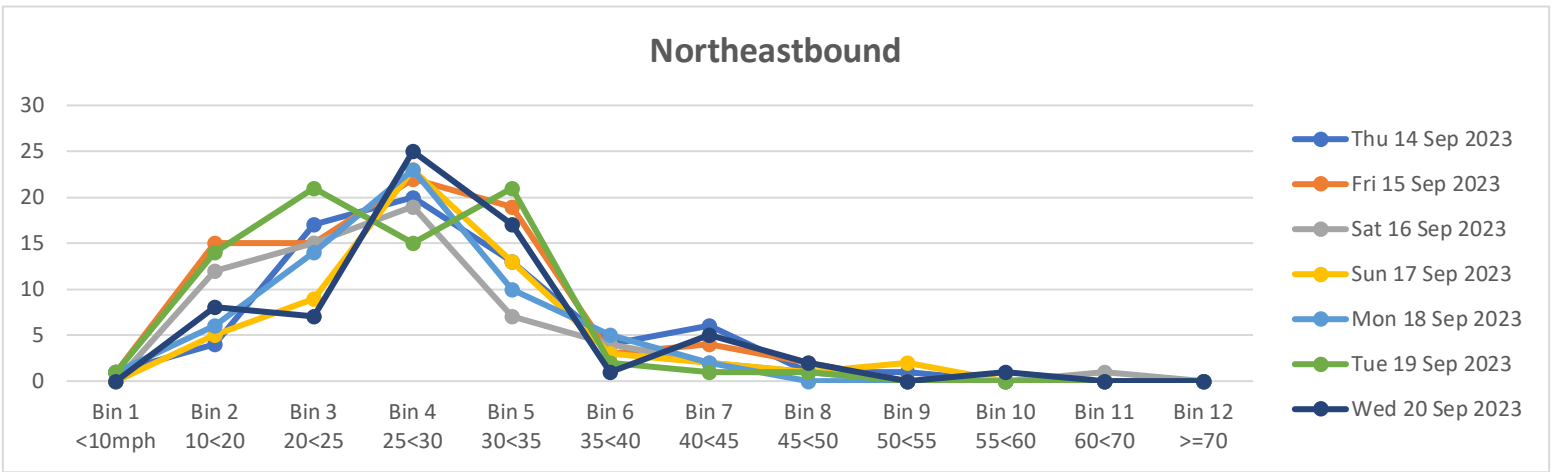
Appendix B – ATC Data Summaries

Trefechan ATC 1, National Road (Western Site)

Direction: Northeastbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	67	37.3	28.8	8.2	1	4	17	20	13	4	6	1	1	0	0	0
Fri 15 Sep 2023	81	35.4	26.8	8.3	1	15	15	22	19	3	4	2	0	0	0	0
Sat 16 Sep 2023	61	36.0	26.5	9.1	0	12	15	19	7	4	2	1	0	0	1	0
Sun 17 Sep 2023	58	37.2	29.0	7.9	0	5	9	23	13	3	2	1	2	0	0	0
Mon 18 Sep 2023	61	34.1	26.9	6.9	1	6	14	23	10	5	2	0	0	0	0	0
Tue 19 Sep 2023	76	33.4	25.7	7.5	1	14	21	15	21	2	1	1	0	0	0	0
Wed 20 Sep 2023	66	37.8	29.1	8.4	0	8	7	25	17	1	5	2	0	1	0	0
5 Day Ave.	70	35.6	27.5	7.9	1	9	15	21	16	3	4	1	0	0	0	0
7 Day Ave.	67	35.9	27.5	8.1	1	9	14	21	14	3	3	1	0	0	0	0

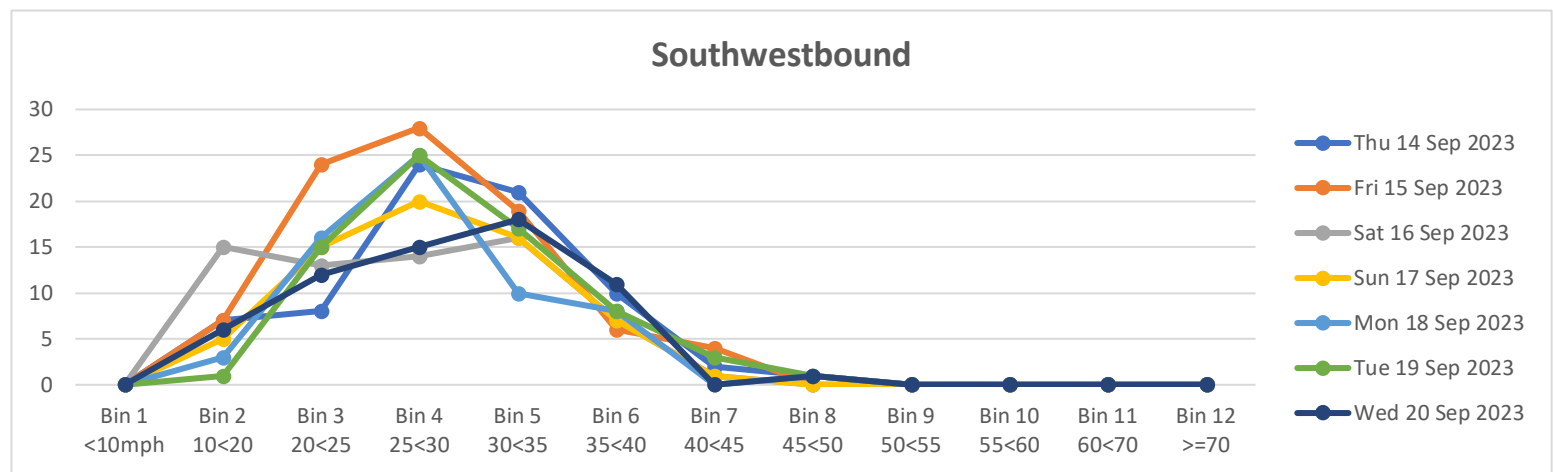
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Direction: Southwestbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	73	36.4	29.2	6.9	0	7	8	24	21	10	2	1	0	0	0	0
Fri 15 Sep 2023	88	34.3	27.6	6.5	0	7	24	28	19	6	4	0	0	0	0	0
Sat 16 Sep 2023	66	34.2	26.2	7.7	0	15	13	14	16	7	1	0	0	0	0	0
Sun 17 Sep 2023	64	34.4	27.9	6.3	0	5	15	20	16	7	1	0	0	0	0	0
Mon 18 Sep 2023	63	34.3	28.0	6.1	0	3	16	25	10	8	0	1	0	0	0	0
Tue 19 Sep 2023	70	35.8	29.5	6.1	0	1	15	25	17	8	3	1	0	0	0	0
Wed 20 Sep 2023	63	36.1	28.8	7.0	0	6	12	15	18	11	0	1	0	0	0	0
5 Day Ave.	71	35.4	28.6	6.5	0	5	15	23	17	9	2	1	0	0	0	0
7 Day Ave.	70	35.1	28.2	6.7	0	6	15	22	17	8	2	1	0	0	0	0

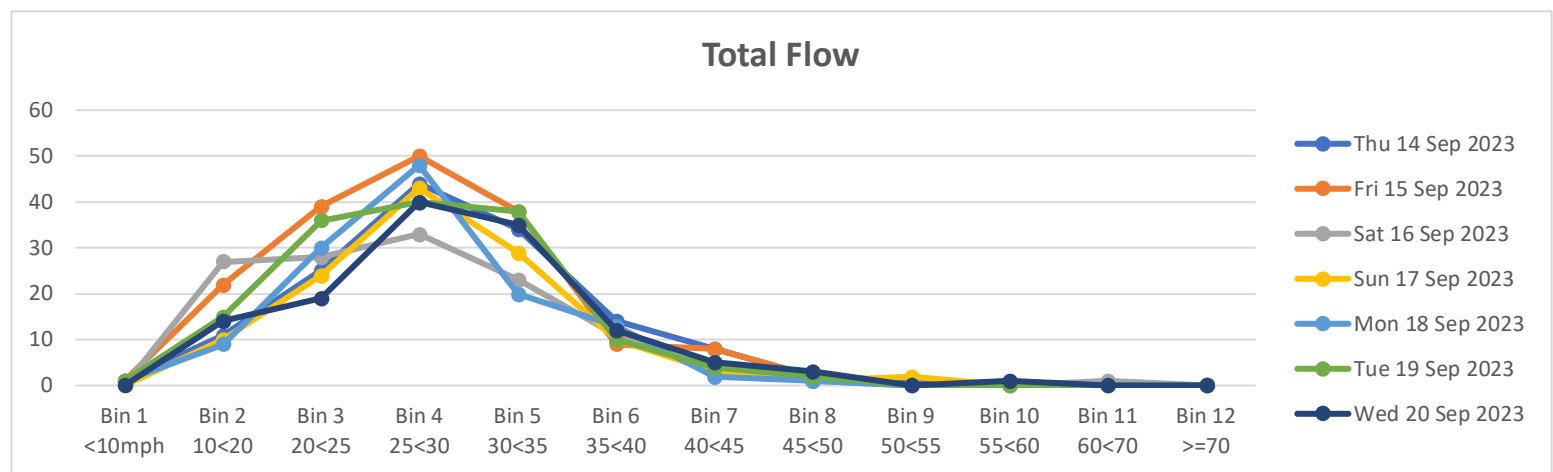
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Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	140	36.8	29.0	7.5	1	11	25	44	34	14	8	2	1	0	0	0
Fri 15 Sep 2023	169	34.9	27.2	7.4	1	22	39	50	38	9	8	2	0	0	0	0
Sat 16 Sep 2023	127	35.0	26.3	8.4	0	27	28	33	23	11	3	1	0	0	1	0
Sun 17 Sep 2023	122	35.8	28.4	7.1	0	10	24	43	29	10	3	1	2	0	0	0
Mon 18 Sep 2023	124	34.2	27.5	6.5	1	9	30	48	20	13	2	1	0	0	0	0
Tue 19 Sep 2023	146	34.9	27.5	7.1	1	15	36	40	38	10	4	2	0	0	0	0
Wed 20 Sep 2023	129	37.0	29.0	7.7	0	14	19	40	35	12	5	3	0	1	0	0
5 Day Ave.	142	35.6	28.0	7.3	1	14	30	44	33	12	5	2	0	0	0	0
7 Day Ave.	137	35.5	27.9	7.4	1	15	29	43	31	11	5	2	0	0	0	0

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Trefechan ATC 1, National Road (Western Site)

Direction: Northeastbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	67	60	7	0	0
Fri 15 Sep 2023	81	69	12	0	0
Sat 16 Sep 2023	61	55	6	0	0
Sun 17 Sep 2023	58	52	6	0	0
Mon 18 Sep 2023	61	51	10	0	0
Tue 19 Sep 2023	76	65	11	0	0
Wed 20 Sep 2023	66	59	6	0	1
5 Day Ave.	70	61	9	0	0
7 Day Ave.	67	59	8	0	0

Direction: Southwestbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	73	63	10	0	0
Fri 15 Sep 2023	88	77	11	0	0
Sat 16 Sep 2023	66	59	7	0	0
Sun 17 Sep 2023	64	59	5	0	0
Mon 18 Sep 2023	63	50	13	0	0
Tue 19 Sep 2023	70	57	13	0	0
Wed 20 Sep 2023	63	52	10	0	1
5 Day Ave.	71	60	11	0	0
7 Day Ave.	70	60	10	0	0

Direction: Total Flow					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	140	123	17	0	0
Fri 15 Sep 2023	169	146	23	0	0
Sat 16 Sep 2023	127	114	13	0	0
Sun 17 Sep 2023	122	111	11	0	0
Mon 18 Sep 2023	124	101	23	0	0
Tue 19 Sep 2023	146	122	24	0	0
Wed 20 Sep 2023	129	111	16	0	2
5 Day Ave.	142	121	21	0	0
7 Day Ave.	137	118	18	0	0

	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	89.6%	10.4%	0.0%	0.0%
Fri 15 Sep 2023	100.0%	85.2%	14.8%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	90.2%	9.8%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	89.7%	10.3%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	83.6%	16.4%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	85.5%	14.5%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	89.4%	9.1%	0.0%	1.5%
5 Day Ave.	100.0%	86.6%	13.1%	0.0%	0.3%
7 Day Ave.	100.0%	87.4%	12.3%	0.0%	0.2%

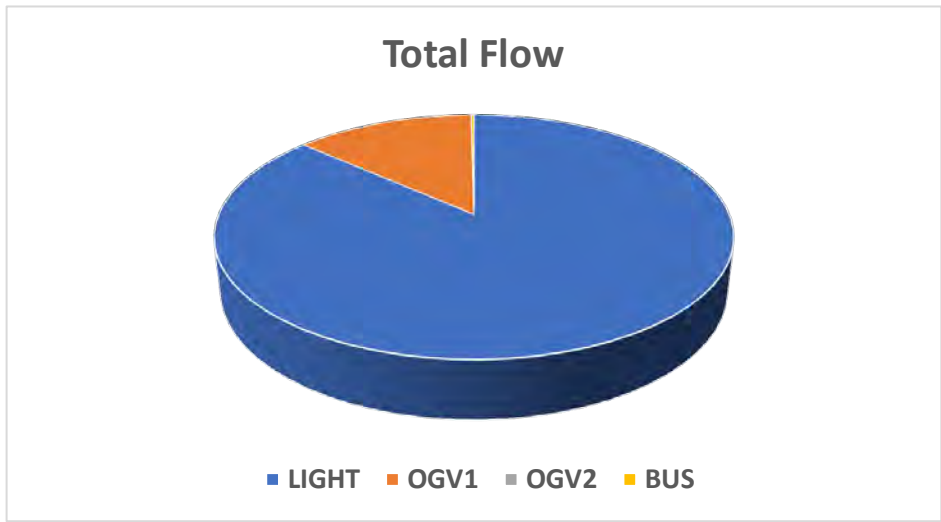
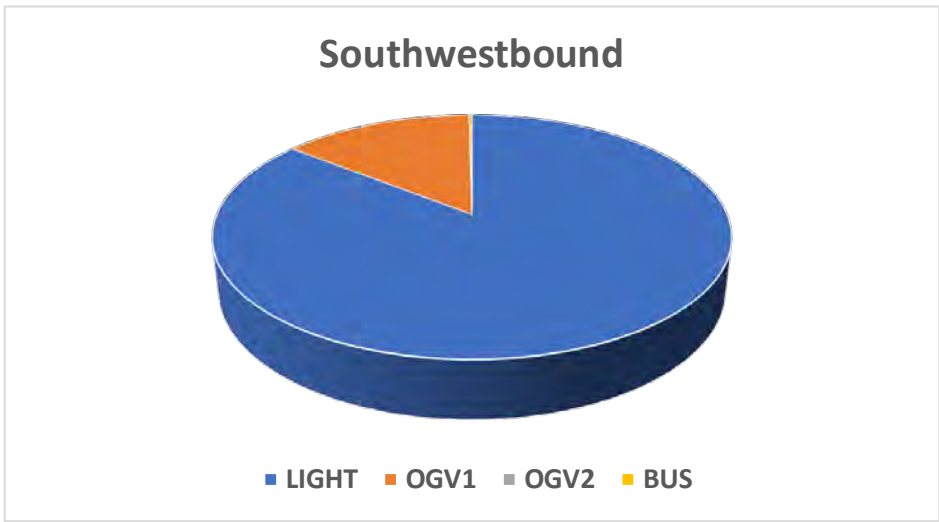
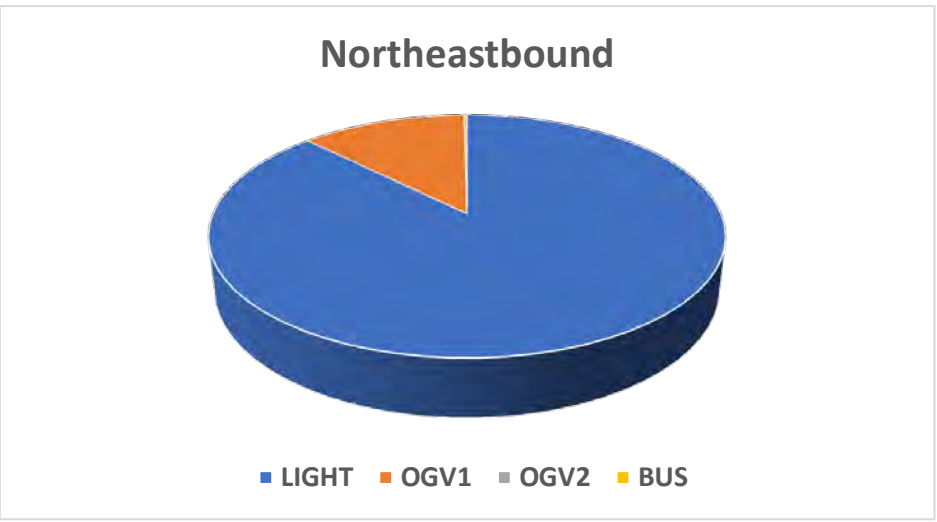
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	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	86.3%	13.7%	0.0%	0.0%
Fri 15 Sep 2023	100.0%	87.5%	12.5%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	89.4%	10.6%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	92.2%	7.8%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	79.4%	20.6%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	81.4%	18.6%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	82.5%	15.9%	0.0%	1.6%
5 Day Ave.	100.0%	83.8%	16.0%	0.0%	0.3%
7 Day Ave.	100.0%	85.6%	14.2%	0.0%	0.2%

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	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	87.9%	12.1%	0.0%	0.0%
Fri 15 Sep 2023	100.0%	86.4%	13.6%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	89.8%	10.2%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	91.0%	9.0%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	81.5%	18.5%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	83.6%	16.4%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	86.0%	12.4%	0.0%	1.6%
5 Day Ave.	100.0%	85.2%	14.5%	0.0%	0.3%
7 Day Ave.	100.0%	86.5%	13.3%	0.0%	0.2%

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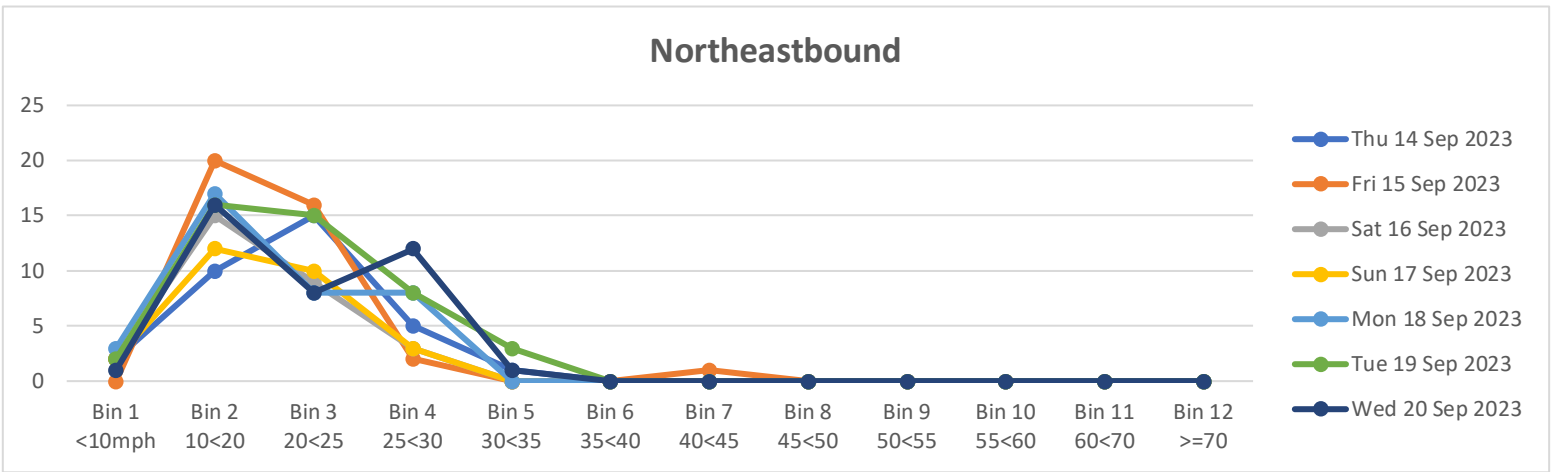


Trefechan ATC 2, National Road (Middle Western Site)

Direction: Northeastbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	33	26.4	20.4	5.8	2	10	15	5	1	0	0	0	0	0	0	0
Fri 15 Sep 2023	39	25.3	19.4	5.6	0	20	16	2	0	0	1	0	0	0	0	0
Sat 16 Sep 2023	29	23.6	18.1	5.3	2	15	9	3	0	0	0	0	0	0	0	0
Sun 17 Sep 2023	27	24.3	18.6	5.4	2	12	10	3	0	0	0	0	0	0	0	0
Mon 18 Sep 2023	36	25.2	18.9	6.1	3	17	8	8	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	44	27.2	20.7	6.2	2	16	15	8	3	0	0	0	0	0	0	0
Wed 20 Sep 2023	38	27.2	20.8	6.2	1	16	8	12	1	0	0	0	0	0	0	0
5 Day Ave.	38	26.2	20.0	6.0	2	16	12	7	1	0	0	0	0	0	0	0
7 Day Ave.	35	25.6	19.6	5.8	2	15	12	6	1	0	0	0	0	0	0	0

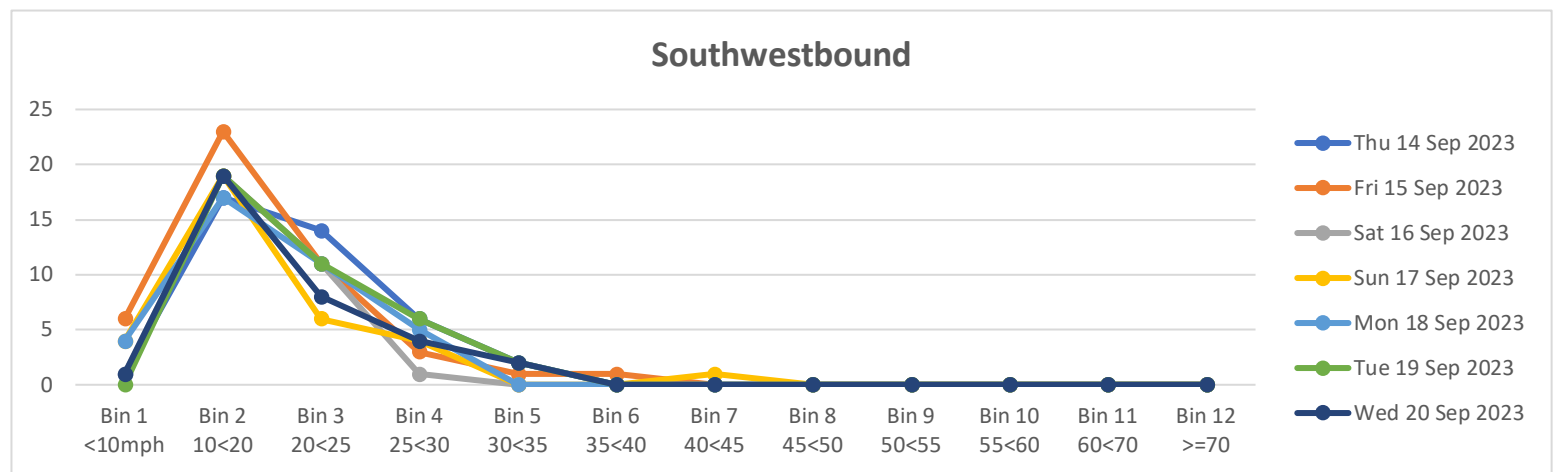
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Direction: Southwestbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	40	26.2	20.2	5.8	1	17	14	6	2	0	0	0	0	0	0	0
Fri 15 Sep 2023	45	24.4	17.6	6.5	6	23	11	3	1	1	0	0	0	0	0	0
Sat 16 Sep 2023	32	22.2	17.8	4.3	1	19	11	1	0	0	0	0	0	0	0	0
Sun 17 Sep 2023	34	25.1	17.8	7.1	4	19	6	4	0	0	1	0	0	0	0	0
Mon 18 Sep 2023	37	24.2	18.2	5.8	4	17	11	5	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	38	26.0	20.1	5.7	0	19	11	6	2	0	0	0	0	0	0	0
Wed 20 Sep 2023	34	25.2	19.1	6.0	1	19	8	4	2	0	0	0	0	0	0	0
5 Day Ave.	39	25.2	19.0	6.0	2	19	11	5	1	0	0	0	0	0	0	0
7 Day Ave.	37	24.8	18.7	5.9	2	19	10	4	1	0	0	0	0	0	0	0

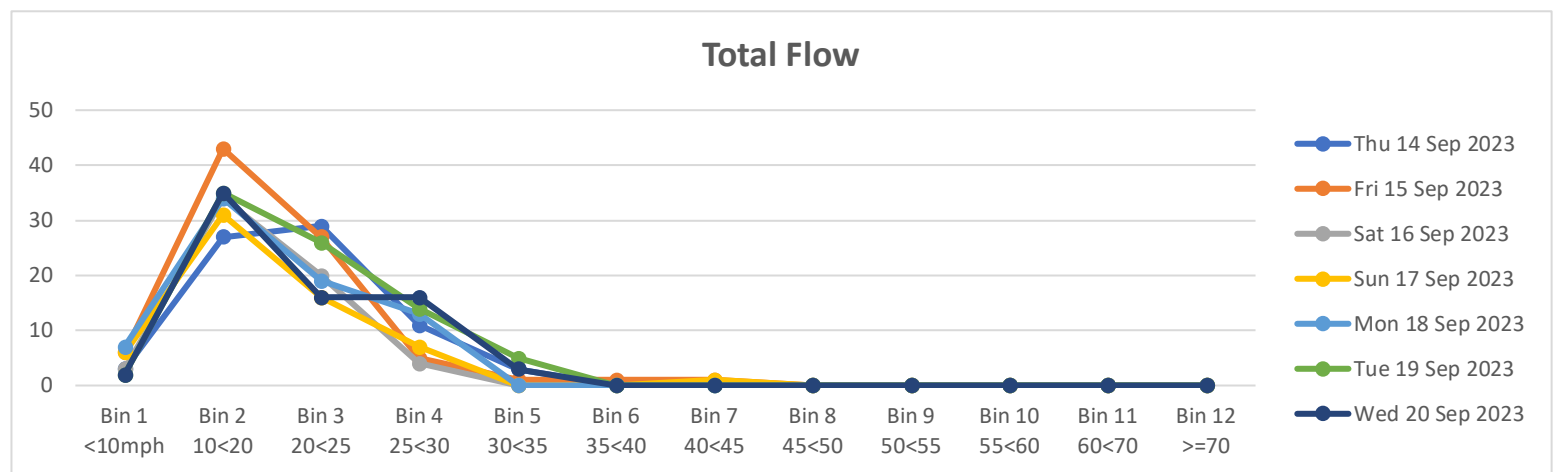
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Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	73	26.2	20.3	5.7	3	27	29	11	3	0	0	0	0	0	0	0
Fri 15 Sep 2023	84	24.9	18.5	6.2	6	43	27	5	1	1	1	0	0	0	0	0
Sat 16 Sep 2023	61	22.9	17.9	4.8	3	34	20	4	0	0	0	0	0	0	0	0
Sun 17 Sep 2023	61	24.8	18.2	6.4	6	31	16	7	0	0	1	0	0	0	0	0
Mon 18 Sep 2023	73	24.7	18.5	5.9	7	34	19	13	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	82	26.6	20.4	6.0	2	35	26	14	5	0	0	0	0	0	0	0
Wed 20 Sep 2023	72	26.3	20.0	6.1	2	35	16	16	3	0	0	0	0	0	0	0
5 Day Ave.	77	25.7	19.5	6.0	4	35	23	12	2	0	0	0	0	0	0	0
7 Day Ave.	72	25.2	19.1	5.9	4	34	22	10	2	0	0	0	0	0	0	0

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Trefechan ATC 2, National Road (Middle Western Site)

Direction: Northeastbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	33	29	3	0	1
Fri 15 Sep 2023	39	31	7	0	1
Sat 16 Sep 2023	29	27	2	0	0
Sun 17 Sep 2023	27	24	3	0	0
Mon 18 Sep 2023	36	30	5	0	1
Tue 19 Sep 2023	44	37	7	0	0
Wed 20 Sep 2023	38	35	2	0	1
5 Day Ave.	38	32	5	0	1
7 Day Ave.	35	30	4	0	1

Direction: Southwestbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	40	34	6	0	0
Fri 15 Sep 2023	45	37	8	0	0
Sat 16 Sep 2023	32	30	2	0	0
Sun 17 Sep 2023	34	32	2	0	0
Mon 18 Sep 2023	37	29	8	0	0
Tue 19 Sep 2023	38	30	8	0	0
Wed 20 Sep 2023	34	28	6	0	0
5 Day Ave.	39	32	7	0	0
7 Day Ave.	37	31	6	0	0

Direction: Total Flow					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	73	63	9	0	1
Fri 15 Sep 2023	84	68	15	0	1
Sat 16 Sep 2023	61	57	4	0	0
Sun 17 Sep 2023	61	56	5	0	0
Mon 18 Sep 2023	73	59	13	0	1
Tue 19 Sep 2023	82	67	15	0	0
Wed 20 Sep 2023	72	63	8	0	1
5 Day Ave.	77	64	12	0	1
7 Day Ave.	72	62	10	0	1

	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	87.9%	9.1%	0.0%	3.0%
Fri 15 Sep 2023	100.0%	79.5%	17.9%	0.0%	2.6%
Sat 16 Sep 2023	100.0%	93.1%	6.9%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	88.9%	11.1%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	83.3%	13.9%	0.0%	2.8%
Tue 19 Sep 2023	100.0%	84.1%	15.9%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	92.1%	5.3%	0.0%	2.6%
5 Day Ave.	100.0%	85.3%	12.6%	0.0%	2.1%
7 Day Ave.	100.0%	86.6%	11.8%	0.0%	1.6%

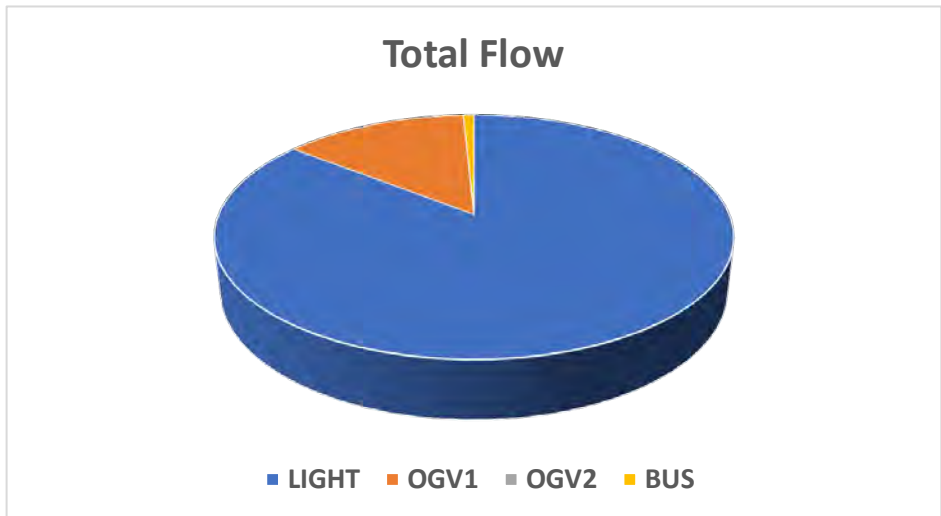
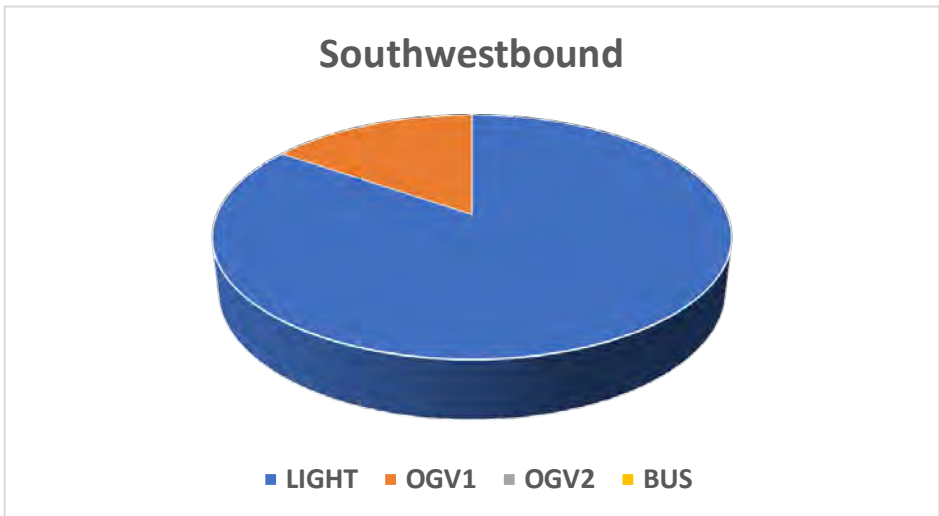
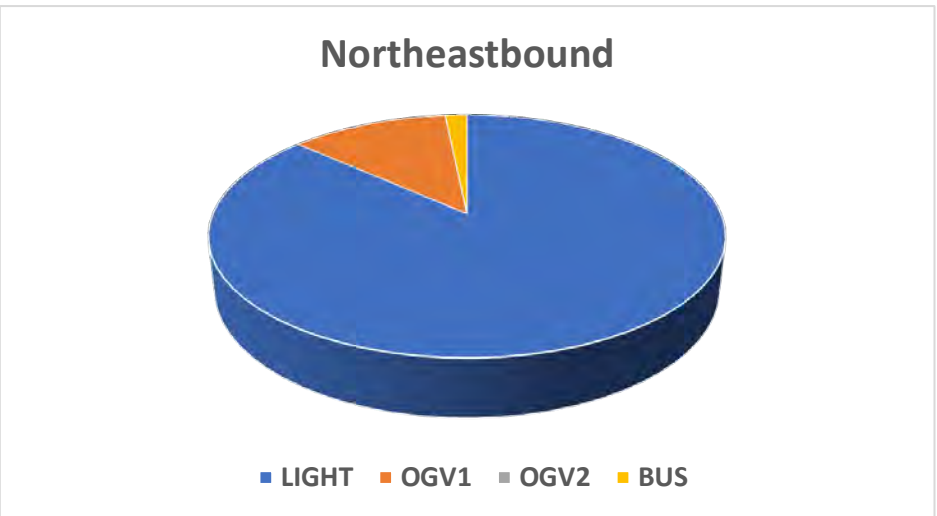
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	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	85.0%	15.0%	0.0%	0.0%
Fri 15 Sep 2023	100.0%	82.2%	17.8%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	93.8%	6.3%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	94.1%	5.9%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	78.4%	21.6%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	78.9%	21.1%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	82.4%	17.6%	0.0%	0.0%
5 Day Ave.	100.0%	81.4%	18.6%	0.0%	0.0%
7 Day Ave.	100.0%	84.6%	15.4%	0.0%	0.0%

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	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	86.3%	12.3%	0.0%	1.4%
Fri 15 Sep 2023	100.0%	81.0%	17.9%	0.0%	1.2%
Sat 16 Sep 2023	100.0%	93.4%	6.6%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	91.8%	8.2%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	80.8%	17.8%	0.0%	1.4%
Tue 19 Sep 2023	100.0%	81.7%	18.3%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	87.5%	11.1%	0.0%	1.4%
5 Day Ave.	100.0%	83.3%	15.6%	0.0%	1.0%
7 Day Ave.	100.0%	85.6%	13.6%	0.0%	0.8%

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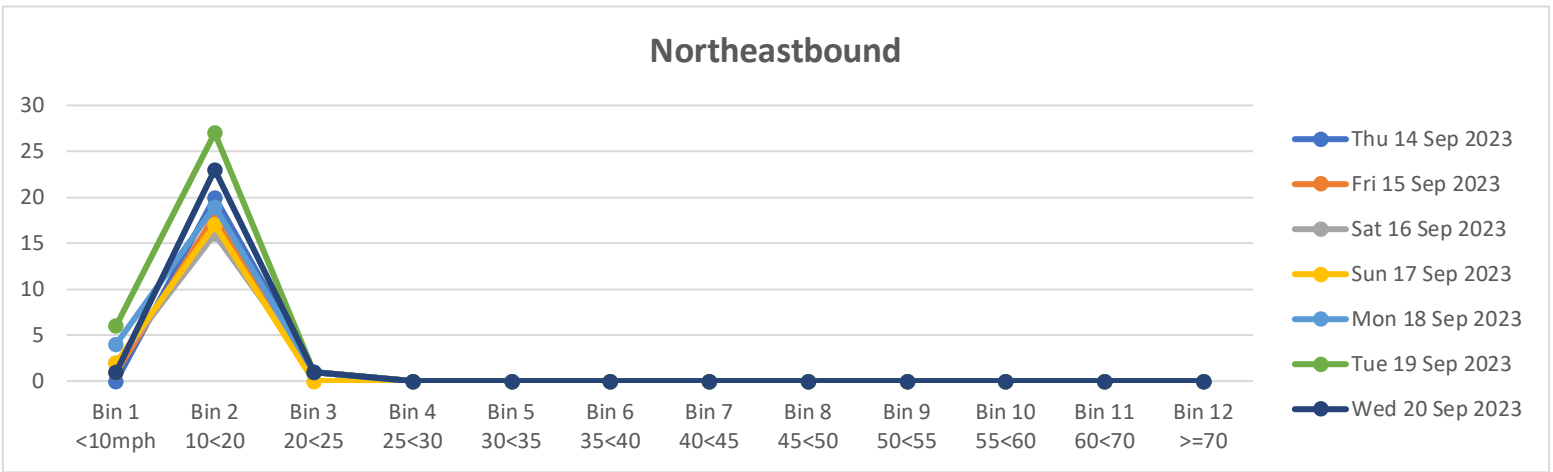


Trefechan ATC 3, National Road (Middle Site)

Direction: Northeastbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	21	17.1	15.4	1.6	0	20	1	0	0	0	0	0	0	0	0	0
Fri 15 Sep 2023	20	17.5	15.0	2.4	1	18	1	0	0	0	0	0	0	0	0	0
Sat 16 Sep 2023	19	17.7	14.7	2.9	2	16	1	0	0	0	0	0	0	0	0	0
Sun 17 Sep 2023	19	16.6	14.3	2.2	2	17	0	0	0	0	0	0	0	0	0	0
Mon 18 Sep 2023	24	17.5	14.1	3.2	4	19	1	0	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	34	17.2	14.0	3.1	6	27	1	0	0	0	0	0	0	0	0	0
Wed 20 Sep 2023	25	17.2	15.0	2.1	1	23	1	0	0	0	0	0	0	0	0	0
5 Day Ave.	25	17.3	14.7	2.5	2	21	1	0	0	0	0	0	0	0	0	0
7 Day Ave.	23	17.2	14.6	2.5	2	20	1	0	0	0	0	0	0	0	0	0

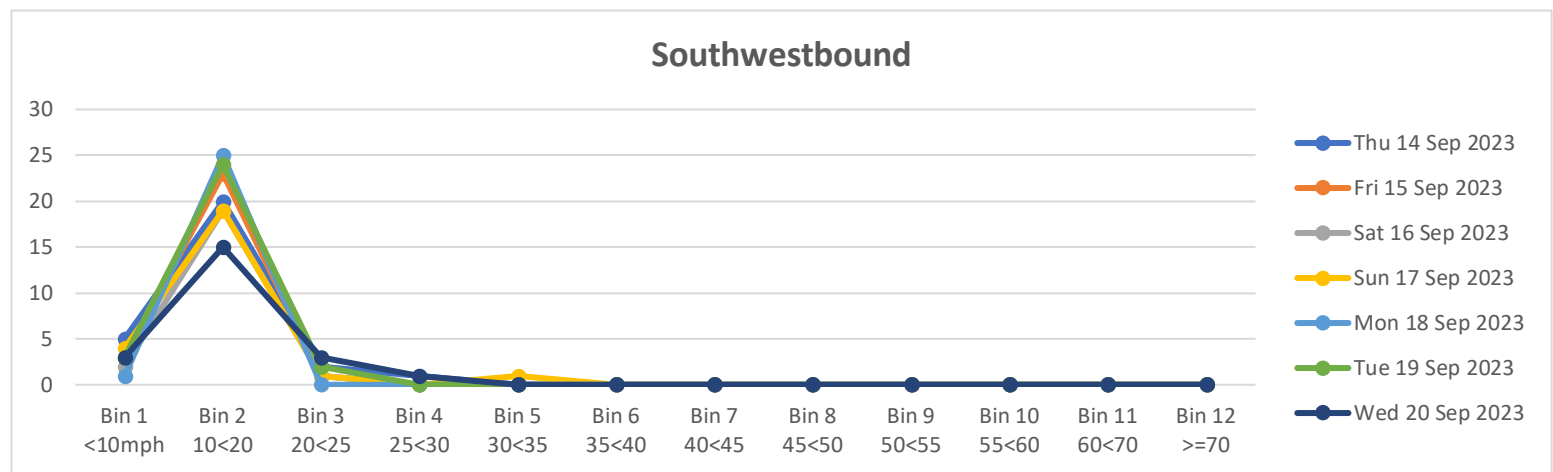
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Direction: Southwestbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	28	19.2	14.7	4.4	5	20	2	1	0	0	0	0	0	0	0	0
Fri 15 Sep 2023	27	17.3	14.5	2.7	3	23	1	0	0	0	0	0	0	0	0	0
Sat 16 Sep 2023	22	17.5	14.7	2.7	2	19	1	0	0	0	0	0	0	0	0	0
Sun 17 Sep 2023	25	19.9	14.9	4.8	4	19	1	0	1	0	0	0	0	0	0	0
Mon 18 Sep 2023	26	16.2	14.7	1.4	1	25	0	0	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	29	17.9	14.8	3.0	3	24	2	0	0	0	0	0	0	0	0	0
Wed 20 Sep 2023	22	20.5	15.6	4.7	3	15	3	1	0	0	0	0	0	0	0	0
5 Day Ave.	26	18.2	14.9	3.2	3	21	2	0	0	0	0	0	0	0	0	0
7 Day Ave.	26	18.4	14.9	3.4	3	21	1	0	0	0	0	0	0	0	0	0

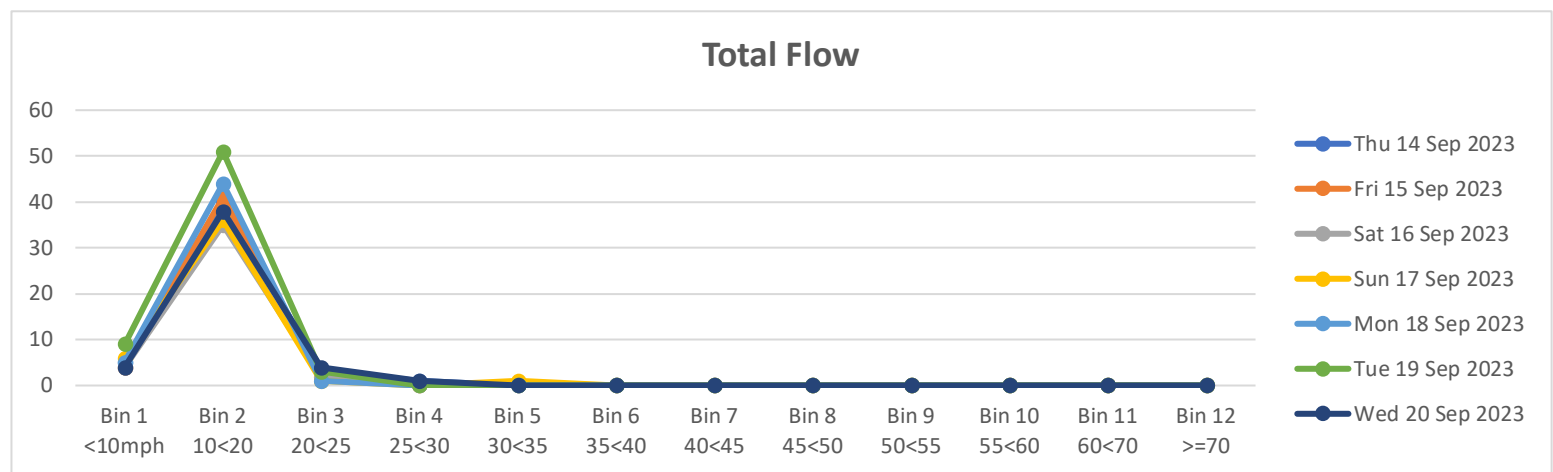
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Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	49	18.6	15.0	3.4	5	40	3	1	0	0	0	0	0	0	0	0
Fri 15 Sep 2023	47	17.4	14.7	2.6	4	41	2	0	0	0	0	0	0	0	0	0
Sat 16 Sep 2023	41	17.5	14.7	2.8	4	35	2	0	0	0	0	0	0	0	0	0
Sun 17 Sep 2023	44	18.6	14.6	3.9	6	36	1	0	1	0	0	0	0	0	0	0
Mon 18 Sep 2023	50	17.0	14.5	2.4	5	44	1	0	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	63	17.5	14.4	3.1	9	51	3	0	0	0	0	0	0	0	0	0
Wed 20 Sep 2023	47	19.0	15.3	3.5	4	38	4	1	0	0	0	0	0	0	0	0
5 Day Ave.	51	17.9	14.8	3.0	5	43	3	0	0	0	0	0	0	0	0	0
7 Day Ave.	49	17.9	14.7	3.1	5	41	2	0	0	0	0	0	0	0	0	0

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Trefechan ATC 3, National Road (Middle Site)

Direction: Northeastbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	21	19	1	0	1
Fri 15 Sep 2023	20	18	2	0	0
Sat 16 Sep 2023	19	19	0	0	0
Sun 17 Sep 2023	19	18	1	0	0
Mon 18 Sep 2023	24	22	2	0	0
Tue 19 Sep 2023	34	30	4	0	0
Wed 20 Sep 2023	25	24	1	0	0
5 Day Ave.	25	23	2	0	0
7 Day Ave.	23	21	2	0	0

Direction: Southwestbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	28	23	5	0	0
Fri 15 Sep 2023	27	24	3	0	0
Sat 16 Sep 2023	22	19	3	0	0
Sun 17 Sep 2023	25	24	1	0	0
Mon 18 Sep 2023	26	19	7	0	0
Tue 19 Sep 2023	29	22	7	0	0
Wed 20 Sep 2023	22	19	3	0	0
5 Day Ave.	26	21	5	0	0
7 Day Ave.	26	21	4	0	0

Direction: Total Flow					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	49	42	6	0	1
Fri 15 Sep 2023	47	42	5	0	0
Sat 16 Sep 2023	41	38	3	0	0
Sun 17 Sep 2023	44	42	2	0	0
Mon 18 Sep 2023	50	41	9	0	0
Tue 19 Sep 2023	63	52	11	0	0
Wed 20 Sep 2023	47	43	4	0	0
5 Day Ave.	51	44	7	0	0
7 Day Ave.	49	43	6	0	0

	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	90.5%	4.8%	0.0%	4.8%
Fri 15 Sep 2023	100.0%	90.0%	10.0%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	100.0%	0.0%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	94.7%	5.3%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	91.7%	8.3%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	88.2%	11.8%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	96.0%	4.0%	0.0%	0.0%
5 Day Ave.	100.0%	91.1%	8.1%	0.0%	0.8%
7 Day Ave.	100.0%	92.6%	6.8%	0.0%	0.6%

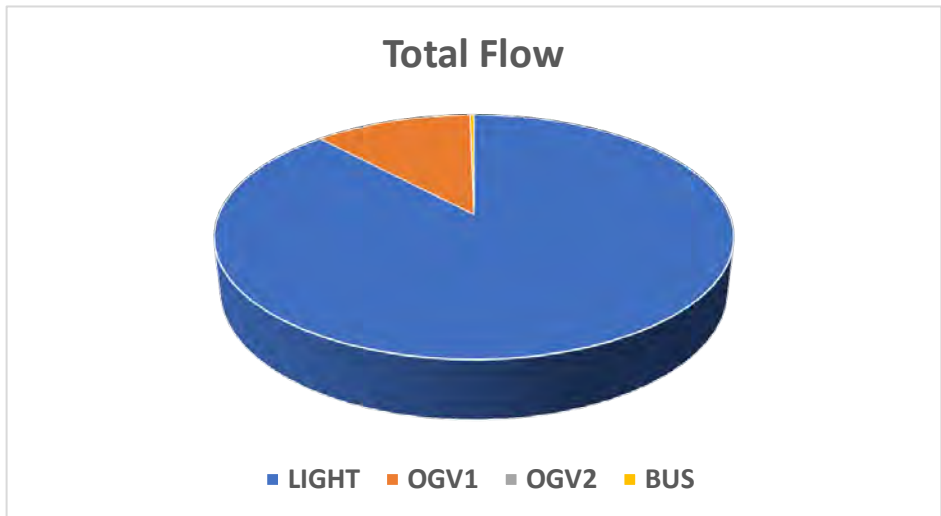
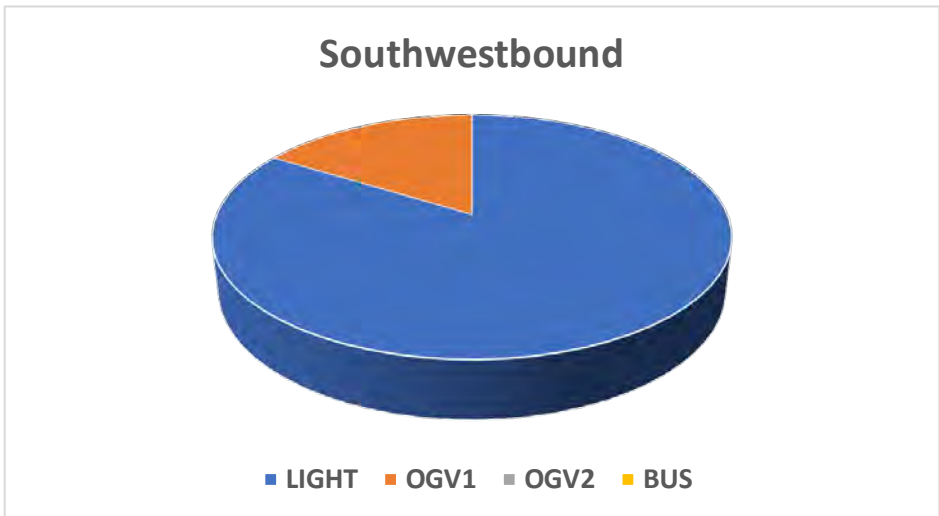
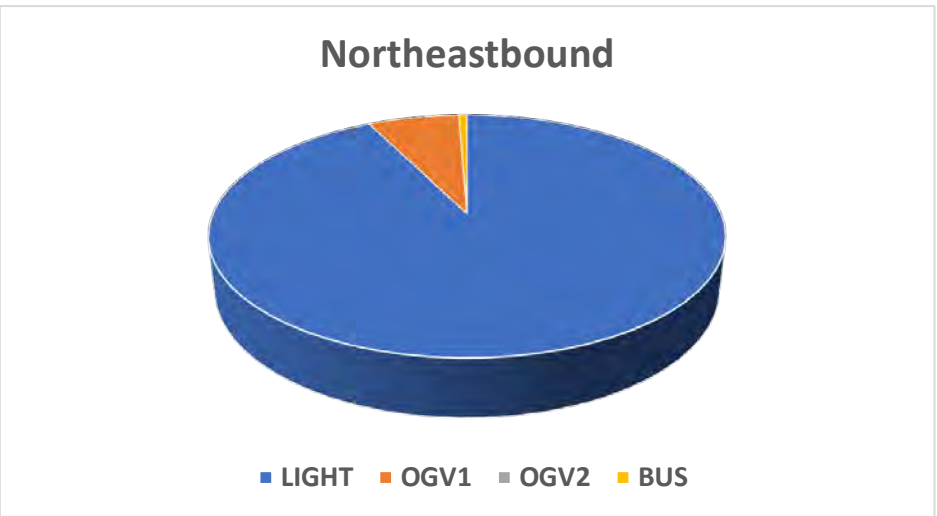
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	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	82.1%	17.9%	0.0%	0.0%
Fri 15 Sep 2023	100.0%	88.9%	11.1%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	86.4%	13.6%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	96.0%	4.0%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	73.1%	26.9%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	75.9%	24.1%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	86.4%	13.6%	0.0%	0.0%
5 Day Ave.	100.0%	81.1%	18.9%	0.0%	0.0%
7 Day Ave.	100.0%	83.8%	16.2%	0.0%	0.0%

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	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	85.7%	12.2%	0.0%	2.0%
Fri 15 Sep 2023	100.0%	89.4%	10.6%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	92.7%	7.3%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	95.5%	4.5%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	82.0%	18.0%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	82.5%	17.5%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	91.5%	8.5%	0.0%	0.0%
5 Day Ave.	100.0%	85.9%	13.7%	0.0%	0.4%
7 Day Ave.	100.0%	88.0%	11.7%	0.0%	0.3%

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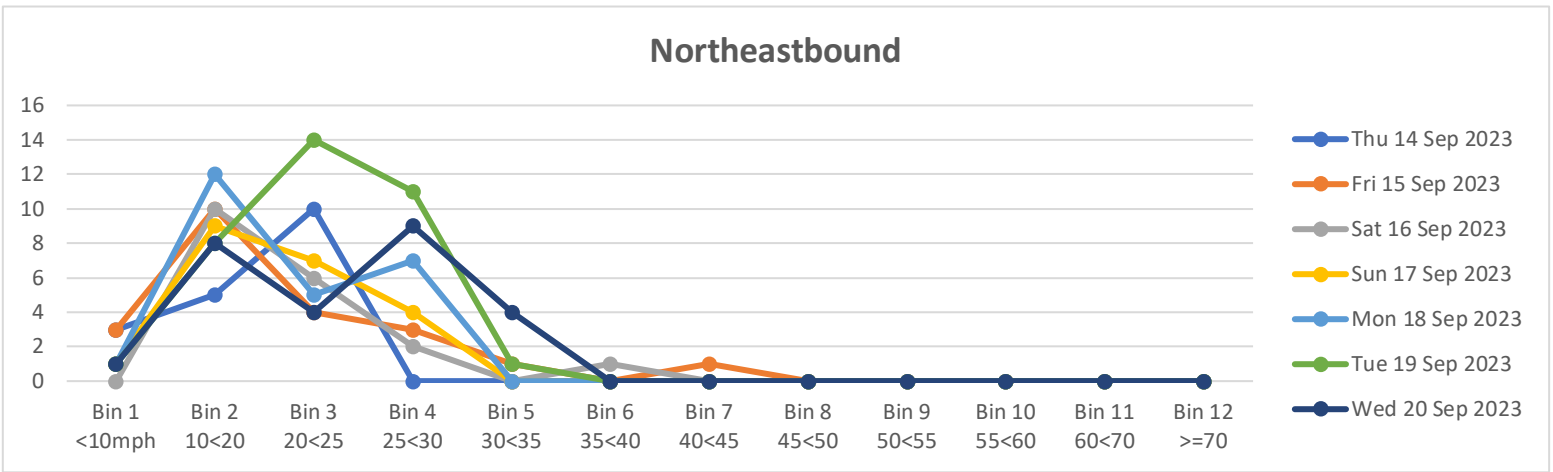


Trefechan ATC 4, National Road (Middle Eastern Site)

Direction: Northeastbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	18	23.9	18.0	5.7	3	5	10	0	0	0	0	0	0	0	0	0
Fri 15 Sep 2023	22	28.0	19.2	8.5	3	10	4	3	1	0	1	0	0	0	0	0
Sat 16 Sep 2023	19	26.4	19.9	6.3	0	10	6	2	0	1	0	0	0	0	0	0
Sun 17 Sep 2023	21	25.4	19.5	5.6	1	9	7	4	0	0	0	0	0	0	0	0
Mon 18 Sep 2023	25	25.9	19.7	6.0	1	12	5	7	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	35	27.9	22.2	5.5	1	8	14	11	1	0	0	0	0	0	0	0
Wed 20 Sep 2023	26	30.3	22.9	7.2	1	8	4	9	4	0	0	0	0	0	0	0
5 Day Ave.	25	27.2	20.4	6.6	2	9	7	6	1	0	0	0	0	0	0	0
7 Day Ave.	24	26.8	20.2	6.4	1	9	7	5	1	0	0	0	0	0	0	0

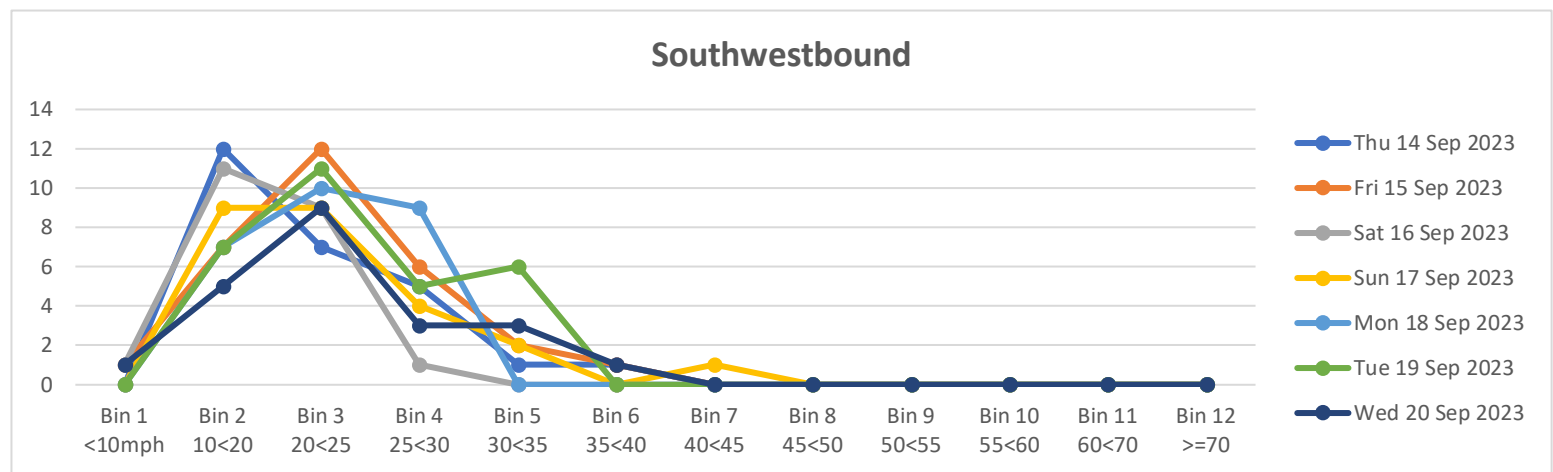
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Direction: Southwestbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	26	27.7	21.0	6.5	0	12	7	5	1	1	0	0	0	0	0	0
Fri 15 Sep 2023	29	29.2	22.4	6.5	1	7	12	6	2	1	0	0	0	0	0	0
Sat 16 Sep 2023	22	23.2	18.3	4.7	1	11	9	1	0	0	0	0	0	0	0	0
Sun 17 Sep 2023	25	29.5	22.2	7.1	0	9	9	4	2	0	1	0	0	0	0	0
Mon 18 Sep 2023	26	27.4	22.2	5.0	0	7	10	9	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	29	30.1	23.6	6.2	0	7	11	5	6	0	0	0	0	0	0	0
Wed 20 Sep 2023	22	30.3	22.9	7.2	1	5	9	3	3	1	0	0	0	0	0	0
5 Day Ave.	26	28.9	22.4	6.3	0	8	10	6	2	1	0	0	0	0	0	0
7 Day Ave.	26	28.2	21.8	6.2	0	8	10	5	2	0	0	0	0	0	0	0

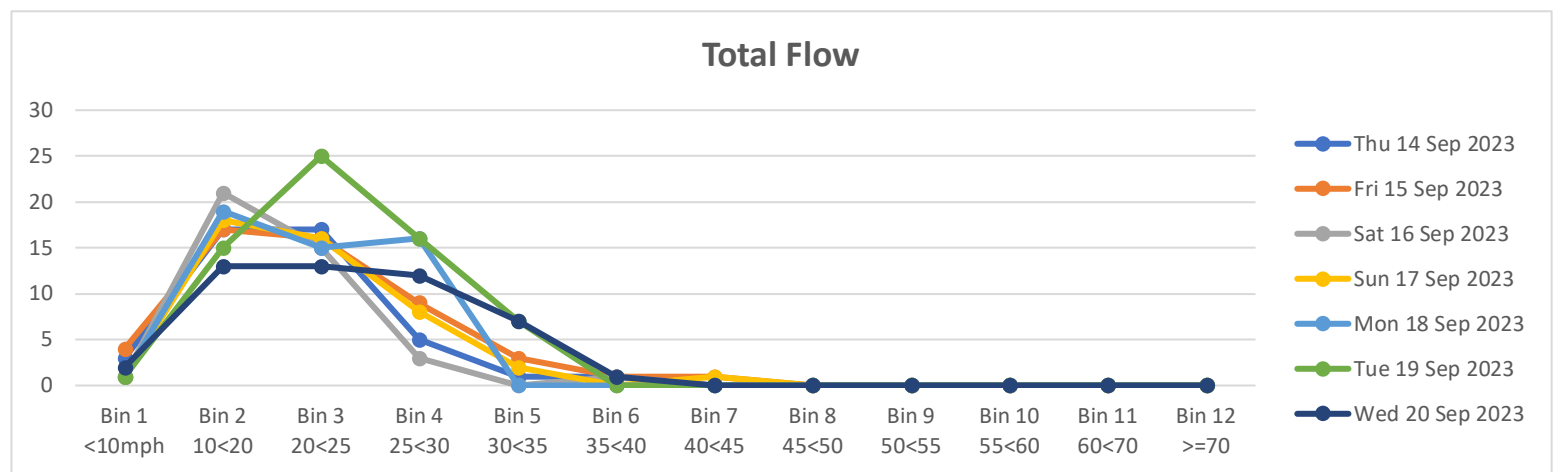
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Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Thu 14 Sep 2023	44	26.3	19.8	6.3	3	17	17	5	1	1	0	0	0	0	0	0
Fri 15 Sep 2023	51	28.8	21.0	7.5	4	17	16	9	3	1	1	0	0	0	0	0
Sat 16 Sep 2023	41	24.7	19.0	5.5	1	21	15	3	0	1	0	0	0	0	0	0
Sun 17 Sep 2023	46	27.8	21.0	6.5	1	18	16	8	2	0	1	0	0	0	0	0
Mon 18 Sep 2023	51	26.8	21.0	5.6	1	19	15	16	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	64	28.9	22.9	5.8	1	15	25	16	7	0	0	0	0	0	0	0
Wed 20 Sep 2023	48	30.2	22.9	7.1	2	13	13	12	7	1	0	0	0	0	0	0
5 Day Ave.	52	28.2	21.5	6.5	2	16	17	12	4	1	0	0	0	0	0	0
7 Day Ave.	49	27.6	21.1	6.3	2	17	17	10	3	1	0	0	0	0	0	0

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Trefechan ATC 4, National Road (Middle Eastern Site)

Direction: Northeastbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	18	16	1	0	1
Fri 15 Sep 2023	22	19	3	0	0
Sat 16 Sep 2023	19	19	0	0	0
Sun 17 Sep 2023	21	20	1	0	0
Mon 18 Sep 2023	25	22	3	0	0
Tue 19 Sep 2023	35	30	5	0	0
Wed 20 Sep 2023	26	24	2	0	0
5 Day Ave.	25	22	3	0	0
7 Day Ave.	24	21	2	0	0

Direction: Southwestbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	26	20	5	0	1
Fri 15 Sep 2023	29	26	3	0	0
Sat 16 Sep 2023	22	21	1	0	0
Sun 17 Sep 2023	25	25	0	0	0
Mon 18 Sep 2023	26	20	6	0	0
Tue 19 Sep 2023	29	23	6	0	0
Wed 20 Sep 2023	22	18	4	0	0
5 Day Ave.	26	21	5	0	0
7 Day Ave.	26	22	4	0	0

Direction: Total Flow					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	44	36	6	0	2
Fri 15 Sep 2023	51	45	6	0	0
Sat 16 Sep 2023	41	40	1	0	0
Sun 17 Sep 2023	46	45	1	0	0
Mon 18 Sep 2023	51	42	9	0	0
Tue 19 Sep 2023	64	53	11	0	0
Wed 20 Sep 2023	48	42	6	0	0
5 Day Ave.	52	44	8	0	0
7 Day Ave.	49	43	6	0	0

	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	88.9%	5.6%	0.0%	5.6%
Fri 15 Sep 2023	100.0%	86.4%	13.6%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	100.0%	0.0%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	95.2%	4.8%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	88.0%	12.0%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	85.7%	14.3%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	92.3%	7.7%	0.0%	0.0%
5 Day Ave.	100.0%	88.1%	11.1%	0.0%	0.8%
7 Day Ave.	100.0%	90.4%	9.0%	0.0%	0.6%

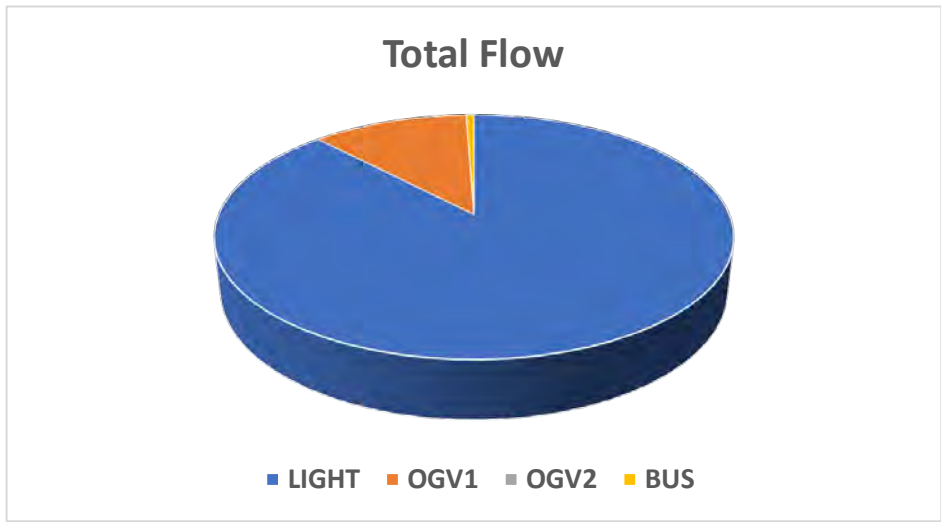
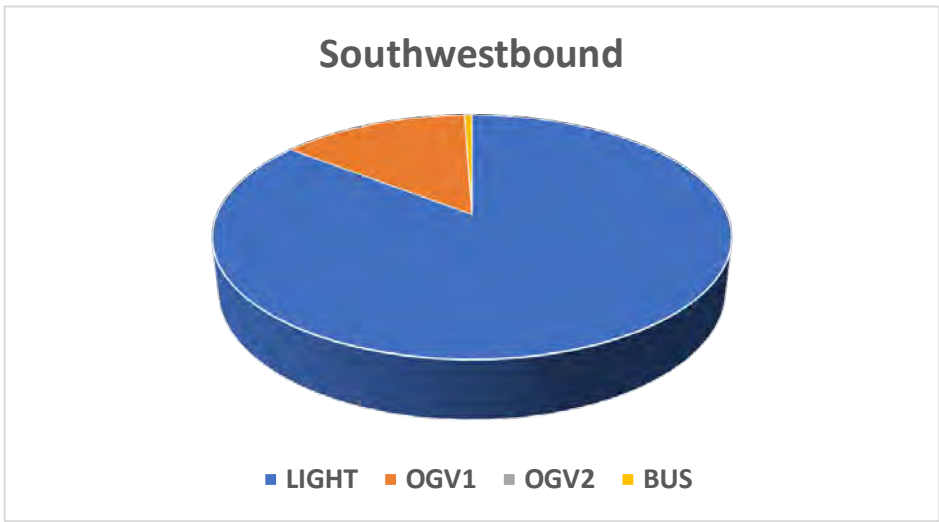
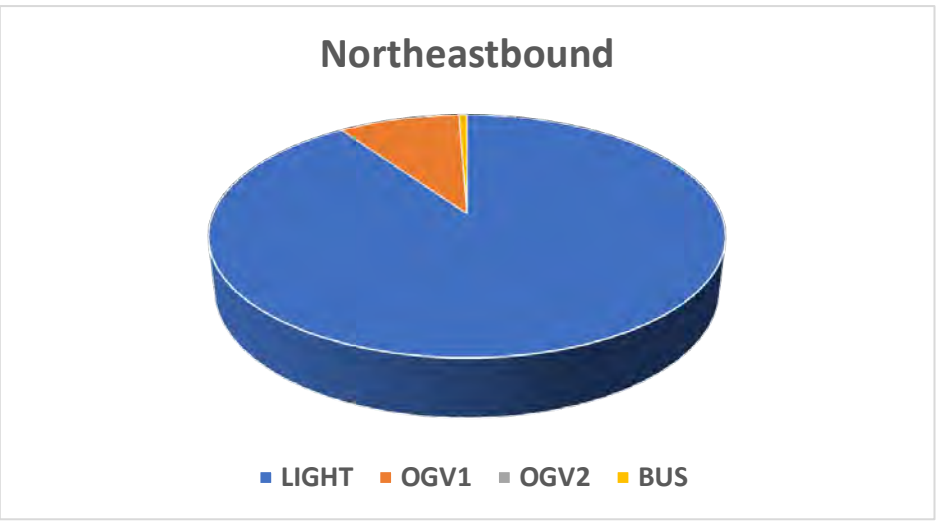
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	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	76.9%	19.2%	0.0%	3.8%
Fri 15 Sep 2023	100.0%	89.7%	10.3%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	95.5%	4.5%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	100.0%	0.0%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	76.9%	23.1%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	79.3%	20.7%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	81.8%	18.2%	0.0%	0.0%
5 Day Ave.	100.0%	81.1%	18.2%	0.0%	0.8%
7 Day Ave.	100.0%	85.5%	14.0%	0.0%	0.6%

Paul Castle Associates

	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	81.8%	13.6%	0.0%	4.5%
Fri 15 Sep 2023	100.0%	88.2%	11.8%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	97.6%	2.4%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	97.8%	2.2%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	82.4%	17.6%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	82.8%	17.2%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	87.5%	12.5%	0.0%	0.0%
5 Day Ave.	100.0%	84.5%	14.7%	0.0%	0.8%
7 Day Ave.	100.0%	87.8%	11.6%	0.0%	0.6%

Paul Castle Associates

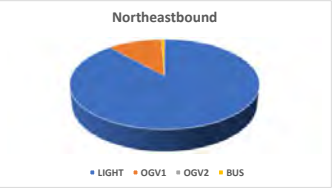


Trefechan ATC 5, National Road (Eastern Site)

Direction: Northeastbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	14	12	1	0	1
Fri 15 Sep 2023	17	13	4	0	0
Sat 16 Sep 2023	16	16	0	0	0
Sun 17 Sep 2023	18	17	1	0	0
Mon 18 Sep 2023	23	20	3	0	0
Tue 19 Sep 2023	34	29	5	0	0
Wed 20 Sep 2023	24	22	2	0	0
5 Day Ave.	22	19	3	0	0
7 Day Ave.	21	18	2	0	0

	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	85.7%	7.1%	0.0%	7.1%
Fri 15 Sep 2023	100.0%	76.5%	23.5%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	100.0%	0.0%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	94.4%	5.6%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	87.0%	13.0%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	85.3%	14.7%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	91.7%	8.3%	0.0%	0.0%
5 Day Ave.	100.0%	85.7%	13.4%	0.0%	0.9%
7 Day Ave.	100.0%	88.4%	11.0%	0.0%	0.7%

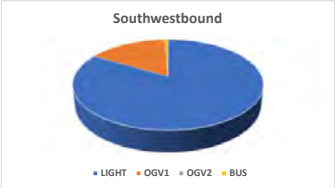
Paul Castle Associates



Direction: Southwestbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	22	16	5	0	1
Fri 15 Sep 2023	24	20	4	0	0
Sat 16 Sep 2023	19	18	1	0	0
Sun 17 Sep 2023	20	20	0	0	0
Mon 18 Sep 2023	24	18	6	0	0
Tue 19 Sep 2023	28	22	6	0	0
Wed 20 Sep 2023	20	17	3	0	0
5 Day Ave.	24	19	5	0	0
7 Day Ave.	22	19	4	0	0

	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	72.7%	22.7%	0.0%	4.5%
Fri 15 Sep 2023	100.0%	83.3%	16.7%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	94.7%	5.3%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	100.0%	0.0%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	75.0%	25.0%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	78.6%	21.4%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	85.0%	15.0%	0.0%	0.0%
5 Day Ave.	100.0%	78.8%	20.3%	0.0%	0.8%
7 Day Ave.	100.0%	83.4%	15.9%	0.0%	0.6%

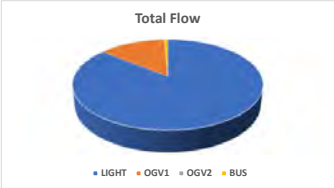
Paul Castle Associates



Direction: Total Flow					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	36	28	6	0	2
Fri 15 Sep 2023	41	33	8	0	0
Sat 16 Sep 2023	35	34	1	0	0
Sun 17 Sep 2023	38	37	1	0	0
Mon 18 Sep 2023	47	38	9	0	0
Tue 19 Sep 2023	62	51	11	0	0
Wed 20 Sep 2023	44	39	5	0	0
5 Day Ave.	46	38	8	0	0
7 Day Ave.	43	37	6	0	0

	Total Volume	LIGHT	OGV1	OGV2	BUS
Thu 14 Sep 2023	100.0%	77.8%	16.7%	0.0%	5.6%
Fri 15 Sep 2023	100.0%	80.5%	19.5%	0.0%	0.0%
Sat 16 Sep 2023	100.0%	97.1%	2.9%	0.0%	0.0%
Sun 17 Sep 2023	100.0%	97.4%	2.6%	0.0%	0.0%
Mon 18 Sep 2023	100.0%	80.9%	19.1%	0.0%	0.0%
Tue 19 Sep 2023	100.0%	82.3%	17.7%	0.0%	0.0%
Wed 20 Sep 2023	100.0%	88.6%	11.4%	0.0%	0.0%
5 Day Ave.	100.0%	82.2%	17.0%	0.0%	0.9%
7 Day Ave.	100.0%	85.8%	13.5%	0.0%	0.7%

Paul Castle Associates

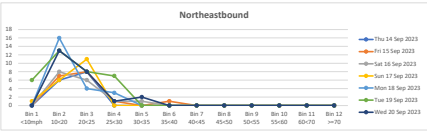


Trefechan ATC 5, National Road (Eastern Site)

Direction: Northeastbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10-20	Bin 3 20-25	Bin 4 25-30	Bin 5 30-35	Bin 6 35-40	Bin 7 40-45	Bin 8 45-50	Bin 9 50-55	Bin 10 55-60	Bin 11 60-70	Bin 12 >=70
Thu 14 Sep 2023	14	23.1	19.3	3.9	0	6	8	0	0	0	0	0	0	0	0	0
Fri 15 Sep 2023	17	26.8	20.6	6.0	0	7	8	1	0	1	0	0	0	0	0	0
Sat 16 Sep 2023	16	25.4	19.7	5.5	0	8	6	1	1	0	0	0	0	0	0	0
Sun 17 Sep 2023	18	23.9	19.2	4.5	1	6	11	0	0	0	0	0	0	0	0	0
Mon 18 Sep 2023	23	22.9	17.9	4.7	0	16	4	3	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	24	25.1	18.1	6.8	0	13	8	7	0	0	0	0	0	0	0	0
Wed 20 Sep 2023	24	25.1	19.5	5.7	0	13	8	1	2	0	0	0	0	0	0	0
5 Day Ave.	22	24.7	19.1	5.4	1	11	7	2	0	0	0	0	0	0	0	0
7 Day Ave.	21	24.7	19.2	5.3	1	10	8	2	0	0	0	0	0	0	0	0

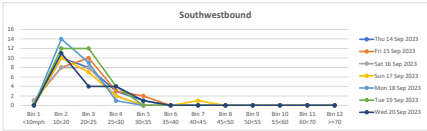
Paul Castle Associates



Direction: Southwestbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10-20	Bin 3 20-25	Bin 4 25-30	Bin 5 30-35	Bin 6 35-40	Bin 7 40-45	Bin 8 45-50	Bin 9 50-55	Bin 10 55-60	Bin 11 60-70	Bin 12 >=70
Thu 14 Sep 2023	22	25.9	20.2	5.5	0	10	8	3	1	0	0	0	0	0	0	0
Fri 15 Sep 2023	24	27.2	20.9	6.2	1	8	10	3	2	0	0	0	0	0	0	0
Sat 16 Sep 2023	19	24.5	19.1	5.2	1	8	8	2	0	0	0	0	0	0	0	0
Sun 17 Sep 2023	20	27.4	20.3	6.9	0	10	7	2	0	0	1	0	0	0	0	0
Mon 18 Sep 2023	24	22.6	18.3	4.1	0	14	9	1	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	28	24.9	20.0	4.7	0	12	12	4	0	0	0	0	0	0	0	0
Wed 20 Sep 2023	20	26.1	19.9	6.0	0	11	4	4	1	0	0	0	0	0	0	0
5 Day Ave.	24	25.1	19.9	5.5	0	11	9	3	1	0	0	0	0	0	0	0
7 Day Ave.	22	25.5	19.8	5.5	0	10	8	3	1	0	0	0	0	0	0	0

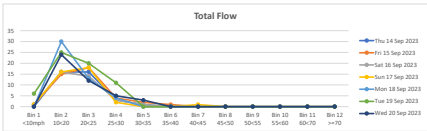
Paul Castle Associates



Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10-20	Bin 3 20-25	Bin 4 25-30	Bin 5 30-35	Bin 6 35-40	Bin 7 40-45	Bin 8 45-50	Bin 9 50-55	Bin 10 55-60	Bin 11 60-70	Bin 12 >=70
Thu 14 Sep 2023	36	24.9	19.9	4.9	0	16	16	3	1	0	0	0	0	0	0	0
Fri 15 Sep 2023	41	27.0	20.7	6.0	1	15	18	4	2	1	0	0	0	0	0	0
Sat 16 Sep 2023	35	24.8	19.4	5.3	1	16	14	3	1	0	0	0	0	0	0	0
Sun 17 Sep 2023	38	25.8	19.8	5.9	1	16	18	2	0	0	1	0	0	0	0	0
Mon 18 Sep 2023	47	22.7	18.1	4.4	0	30	13	4	0	0	0	0	0	0	0	0
Tue 19 Sep 2023	62	25.1	19.0	6.0	6	25	20	11	0	0	0	0	0	0	0	0
Wed 20 Sep 2023	44	25.6	19.7	5.7	0	24	12	5	3	0	0	0	0	0	0	0
5 Day Ave.	46	25.1	19.5	5.4	1	22	16	5	1	0	0	0	0	0	0	0
7 Day Ave.	43	25.1	19.5	5.4	1	20	16	5	1	0	0	0	0	0	0	0

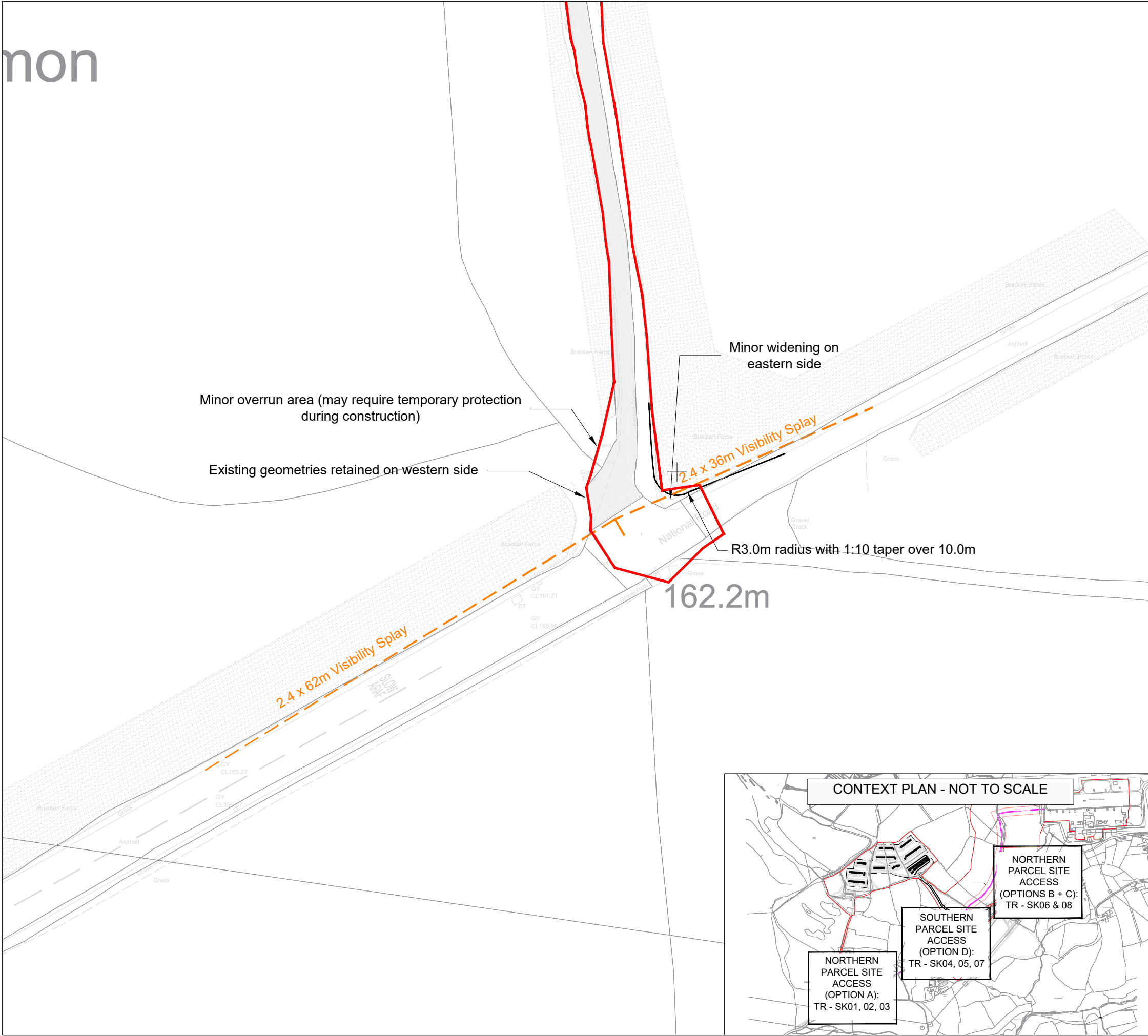
Paul Castle Associates





Appendix C – Drawings P22-2733 – TR – SK01 / SK04 / SK06 – Site Access Geometric Parameters and Visibility Splays

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1:500

012.5m

Key:

Site Boundary

Calculated visibility splays at site access - using measured 85th percentile speeds (35.9mph northeastbound and 24.8mph southwestbound) and Manual for Streets calculations (in accordance with TAN 18 B.3)

NOTES:

1. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND SHOULD NOT BE USED FOR COSTING OR CONSTRUCTION. PEGASUS GROUP ACCEPT NO LIABILITY FOR THE MISUSE OF THIS DRAWING FROM ITS INTENDED PURPOSE.

2. THIS DRAWING IS BASED UPON DRAWING 'INDICATIVE BESS LAYOUT - WITH SMA INVERTERS - 200MW' (DRAWING REF: WIN-SOL-02-DR-03-01-01 REV 10) PRODUCED BY WINDEL ENERGY ON 27 JANUARY 2025.

B	17.02.2025	UPDATED CLIENT NAME	AJ	JP
A	05.02.2025	UPDATED REDLINE BOUNDARY	AJ	JP

REV	DATE	DESCRIPTION	REVISED BY	APPROVED BY

DRAWING NAME:

NORTHERN PARCEL

PROPOSED SITE ACCESS (OPTION A)

PROJECT:

LAND NORTH AND SOUTH OF NATIONAL ROAD, CILFYNYDD

CLIENT:

REWE 2 LIMITED

DATE:	SCALE:	DRAWN BY:	APPROVED BY:
02.10.2023	1:500@A3	JMK	KE

DRAWING NUMBER:

P22-2733-TR-SK01 REV B

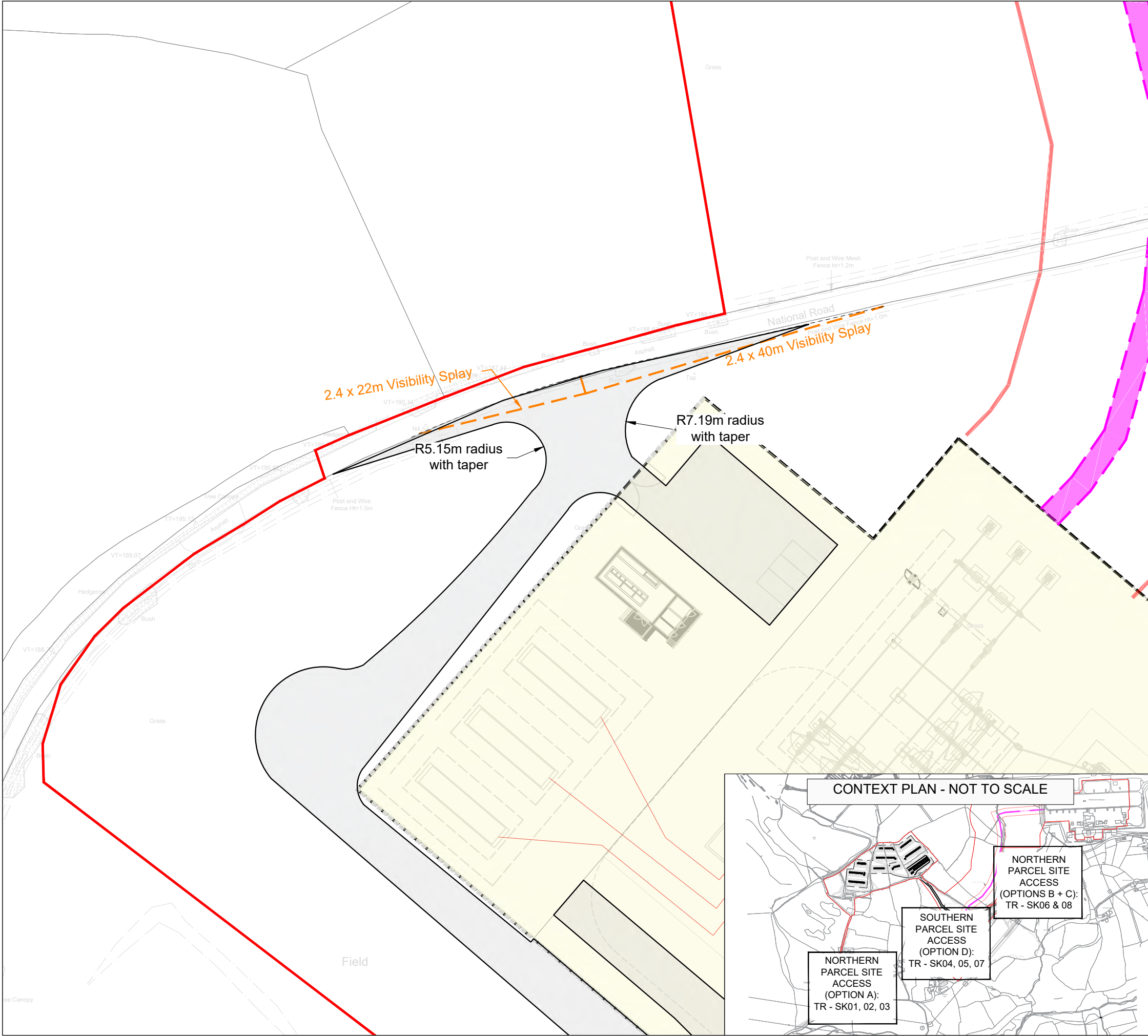
PG OFFICE:

BIR

PEGASUS GROUP

The context plan, titled 'CONTEXT PLAN - NOT TO SCALE', shows the site's location within a larger area. It highlights the 'NORTHERN PARCEL SITE ACCESS (OPTION A): TR - SK01, 02, 03' and the 'SOUTHERN PARCEL SITE ACCESS (OPTION D): TR - SK04, 05, 07'. A box labeled 'NORTHERN PARCEL SITE ACCESS (OPTIONS B + C): TR - SK06 & 08' is also present. The plan shows the site's proximity to roads and other land parcels.

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N

1:500

012.5m

Key:

Site Boundary

Calculated visibility splays at site access - using measured 85th percentile speeds (17.3mph northeastbound and 26.8mph southwestbound) and Manual for Streets calculations (in accordance with TAN 18 B.3)

NOTES:

1. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND SHOULD NOT BE USED FOR COSTING OR CONSTRUCTION. PEGASUS GROUP ACCEPT NO LIABILITY FOR THE MISUSE OF THIS DRAWING FROM ITS INTENDED PURPOSE.

2. THIS DRAWING IS BASED UPON DRAWING 'INDICATIVE BESS LAYOUT - WITH SMA INVERTERS - 200MW' (DRAWING REF: WIN-SOL-02-DR-03-01-01 REV 10) PRODUCED BY WINDEL ENERGY ON 27 JANUARY 2025.

B	17.02.2025	UPDATED CLIENT NAME	AJ	JP
A	05.02.2025	UPDATED REDLINE BOUNDARY	AJ	JP
REV	DATE	DESCRIPTION	REVISED BY	APPROVED BY

DRAWING NAME:

SOUTHERN PARCEL
PROPOSED ACCESS (OPTION D)

DRAWING NAME:

PROJECT:

LAND NORTH AND SOUTH OF NATIONAL ROAD, CILFYNYDD

CLIENT:

REWE 2 LIMITED

DATE:

02.10.2023

SCALE:

1:500@A3

DRAWN BY:

JMK

APPROVED BY:

KE

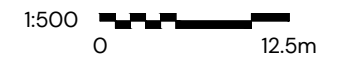
DRAWING NUMBER:

P22-2733-TR-SK04 REV B

PG OFFICE:

BIR

PEGASUS GROUP



Site Boundary

Calculated visibility splays at site access - using measured 85th percentile speeds (28.2mph northeastbound and 24.7mph southwestbound) and Manual for Streets calculations (in accordance with TAN 18 B.3)

1. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND SHOULD NOT BE USED FOR COSTING OR CONSTRUCTION. PEGASUS GROUP ACCEPT NO LIABILITY FOR THE MISUSE OF THIS DRAWING FROM ITS INTENDED PURPOSE.
2. THIS DRAWING IS BASED UPON DRAWING 'INDICATIVE BESS LAYOUT - WITH SMA INVERTERS - 200MW' (DRAWING REF: WIN-SOL-O2-DR-O3-01-01 REV 10) PRODUCED BY WINDEL ENERGY ON 27 JANUARY 2025.
3. THE VISIBILITY SPLAYS SHOWN CONSIDER ONLY THE HORIZONTAL VISIBILITY REQUIREMENTS AT THIS STAGE AND ARE BASED UPON MfS AND TAN 18 GUIDANCE.

CONTEXT PLAN - NOT TO SCALE

NORTHERN PARCEL SITE ACCESS (OPTION A):
TR - SK01, 02, 03

SOUTHERN PARCEL SITE ACCESS (OPTION D):
TR - SK04, 05, 07

NORTHERN PARCEL SITE ACCESS (OPTIONS B + C):
TR - SK06 & 08

The map shows a central development area with several buildings. Three access routes are highlighted with red lines and labeled in text boxes. Option A (Northern) leads to the northern site. Option D (Southern) leads to the southern site. Options B and C (Northern) lead to the northern site via a different route. The map also shows surrounding roads, fields, and a water body in the bottom right.

DRAWING NAME:
EASTERN ACCESS TRACK
VISIBILITY SPLAY (OPTION C)

CLIENT:
REWE 2 LIMITED

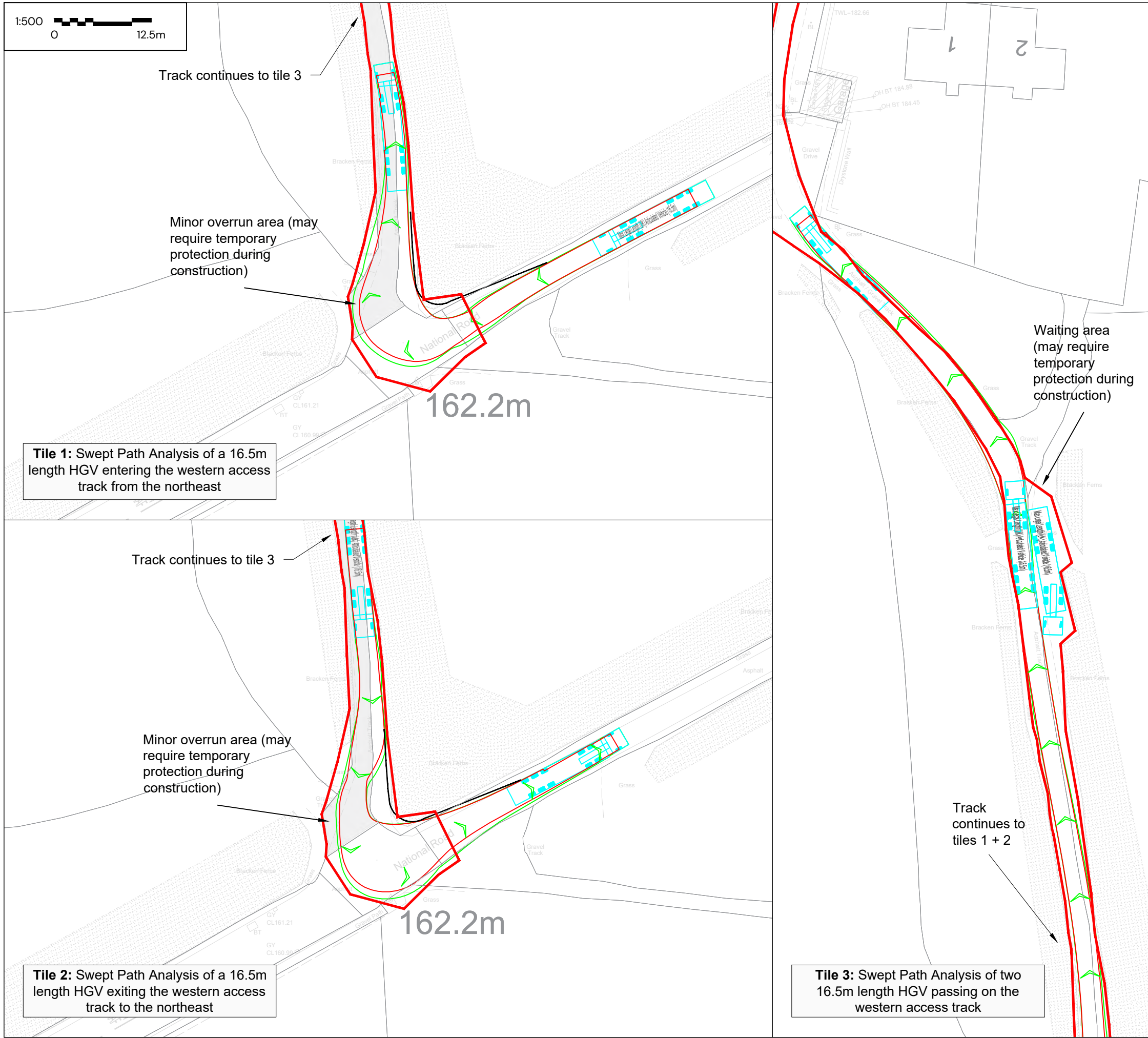
DRAWING NUMBER:
P22-2733-TR-SK06 REV B

PG OFFICE:
BIR

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Appendix D – Drawings P22-2733 – TR – SK02 / SK03 / SK05 / SK07 / SK08 – Site Access SPA



Key:

Site Boundary

NOTES:

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- THIS DRAWING IS BASED UPON DRAWING 'INDICATIVE BESS LAYOUT - WITH SMA INVERTERS - 200MW' (DRAWING REF: WIN-SOL-02-DR-03-01-01 REV 10) PRODUCED BY WINDEL ENERGY ON 27 JANUARY 2025.

UK Articulated Vehicle (16.5m)

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

CONTEXT PLAN - NOT TO SCALE

B	17.02.2025	UPDATED CLIENT NAME	AJ	JP
A	05.02.2025	UPDATED REDLINE BOUNDARY	AJ	JP

REV	DATE	DESCRIPTION	REVISED BY	APPROVED BY

DRAWING NAME:
**NORTHERN PARCEL ACCESS (A)
SWEPTH PATH ANALYSIS (SHEET 1)**

PROJECT:
LAND NORTH AND SOUTH OF NATIONAL ROAD, CILFYNYDD

CLIENT:
REWE 2 LIMITED

DATE: 02.10.2023	SCALE: 1:500@A3	DRAWN BY: JMK	APPROVED BY: KE
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DRAWING NUMBER:
P22-2733-TR-SK02 REV B

PG OFFICE:
BIR

PEGASUS GROUP

Minor overrun area (may require temporary protection during construction)

Title 1: Swept Path Analysis of a 16.5m length HGV turning into the western access track from the southwest

Minor overrun area (may require temporary protection during construction)

Title 2: Swept Path Analysis of a 16.5m length HGV turning out of the western access track to the southwest

Track
continues to
tiles 1 + 2

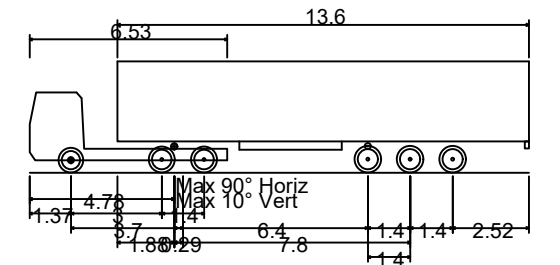
Title 3: Swept Path Analysis of two 16.5m length HGV passing on the western access track

Key:

Site Boundary

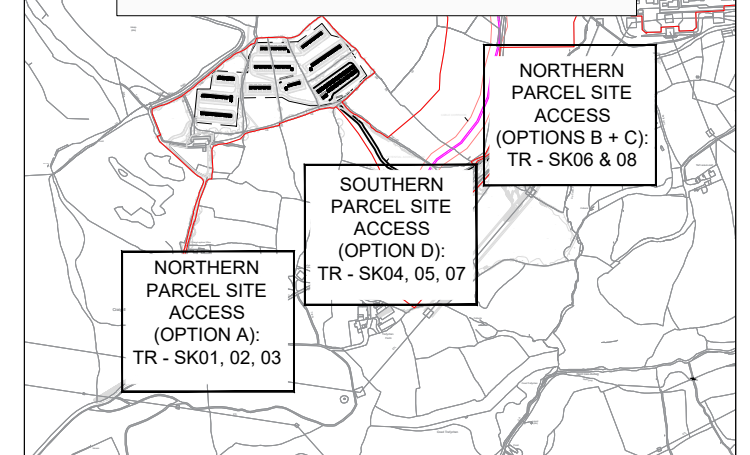
NOTES:

1. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND SHOULD NOT BE USED FOR COSTING OR CONSTRUCTION. PEGASUS GROUP ACCEPT NO LIABILITY FOR THE MISUSE OF THIS DRAWING FROM ITS INTENDED PURPOSE.
2. THIS DRAWING IS BASED UPON DRAWING 'INDICATIVE BESS LAYOUT - WITH SMA INVERTERS - 200MW' (DRAWING REF: WIN-SOL-02-DR-03-01-01 REV 10) PRODUCED BY WINDEL ENERGY ON 27 JANUARY 2025.



UK Articulated Vehicle (16.5m)	1.4
Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

CONTEXT PLAN - NOT TO SCALE



B	17.02.2025	UPDATED CLIENT NAME	AJ	JP
A	05.02.2025	UPDATED REDLINE BOUNDARY	AJ	JP

REV	DATE	DESCRIPTION	REVISED BY	APPROVED BY
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DRAWING NAME:
NORTHERN PARCEL ACCESS (A)
SWEPth PATH ANALYSIS (SHEET 2)

PROJECT:
LAND NORTH AND SOUTH OF NATIONAL
ROAD, CILFYNYDD

CLIENT:
REWE 2 LIMITED

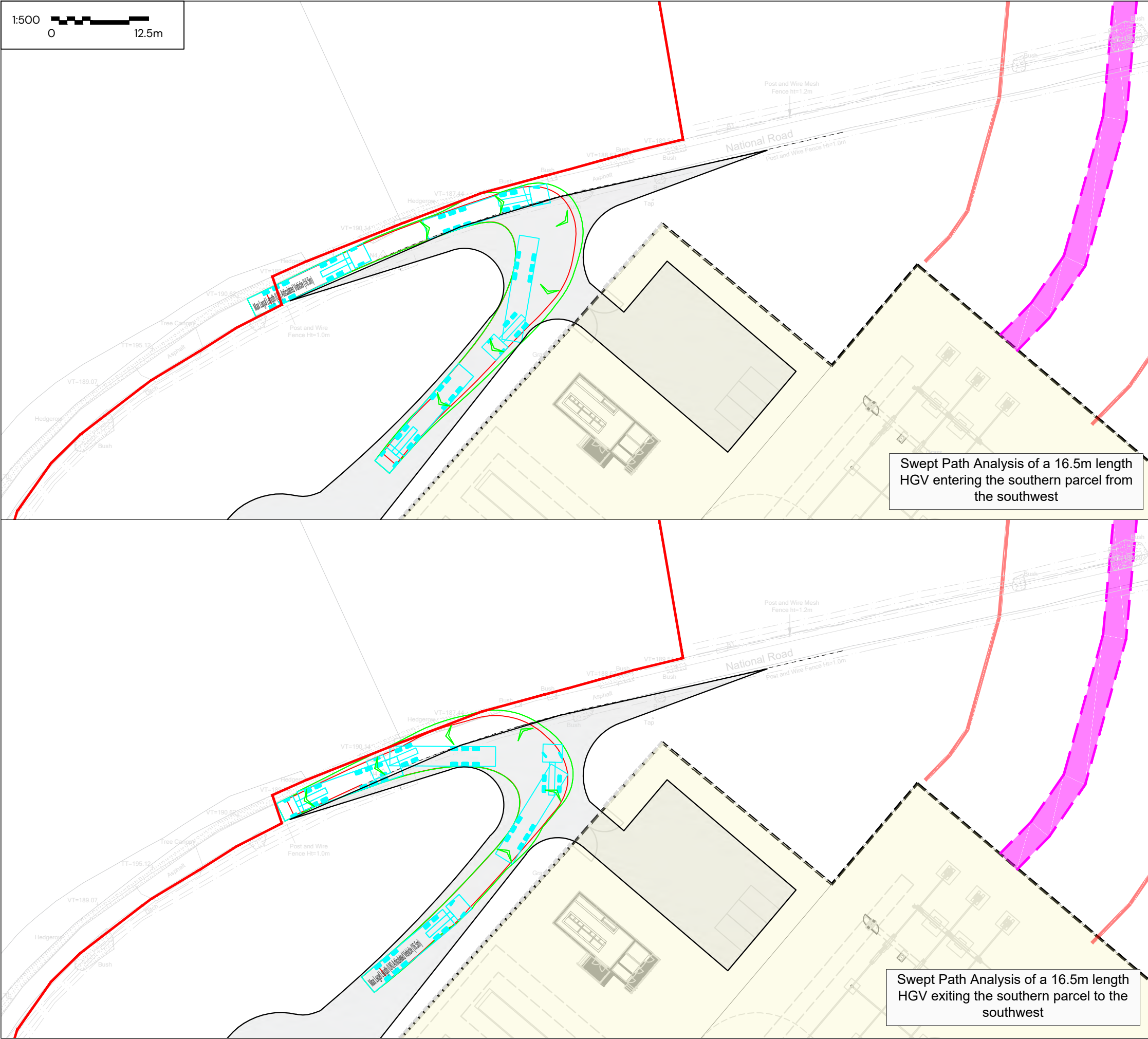
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02.10.2023	1:500@A3	JMK	KE

DRAWING NUMBER:
P22-2733-TR-SK03 REV B

PG OFFICE:
BIR

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Key:

Site Boundary

NOTES:

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2. THIS DRAWING IS BASED UPON DRAWING 'INDICATIVE BESS LAYOUT - WITH SMA INVERTERS - 200MW' (DRAWING REF: WIN-SOL-O2-DR-03-01-01 REV 10) PRODUCED BY WINDEL ENERGY ON 27 JANUARY 2025.

UK Articulated Vehicle (16.5m)	
Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

CONTEXT PLAN - NOT TO SCALE

NORTHERN PARCEL SITE ACCESS (OPTION A):
TR - SK01, 02, 03

SOUTHERN PARCEL SITE ACCESS (OPTION D):
TR - SK04, 05, 07

NORTHERN PARCEL SITE ACCESS (OPTIONS B + C):
TR - SK06 & 08

B	17.02.2025	UPDATED CLIENT NAME	AJ	JP
A	05.02.2025	UPDATED REDLINE BOUNDARY	AJ	JP
REV	DATE	DESCRIPTION	REVISED BY	APPROVED BY

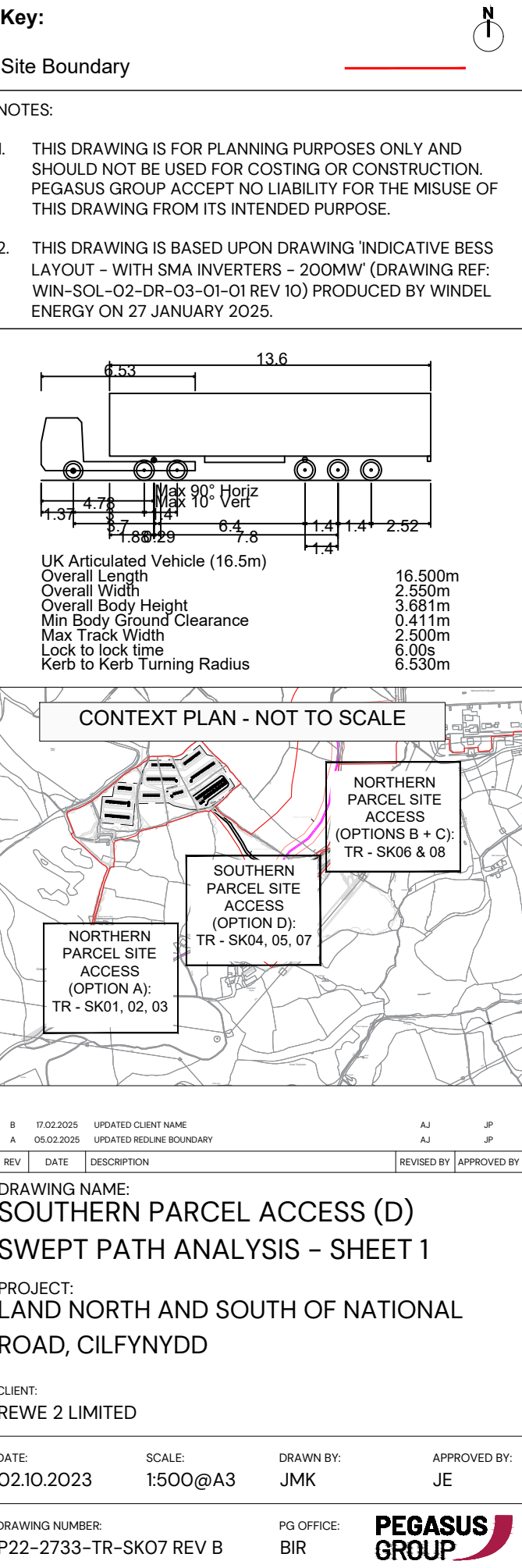
DRAWING NAME:
SOUTHERN PARCEL ACCESS (D)
SWEPT PATH ANALYSIS - SHEET 1

PROJECT:
LAND NORTH AND SOUTH OF NATIONAL ROAD, CILFYNYDD

CLIENT:
REWE 2 LIMITED

DATE:	SCALE:	DRAWN BY:	APPROVED BY:
02.10.2023	1:500@A3	JMK	JE

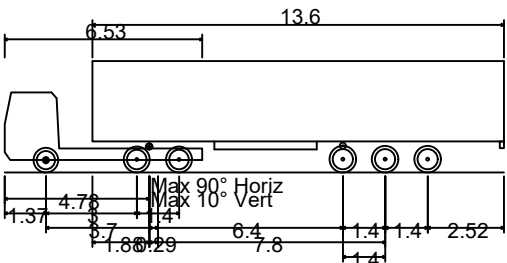
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P22-2733-TR-SK05 REV B	BIR	



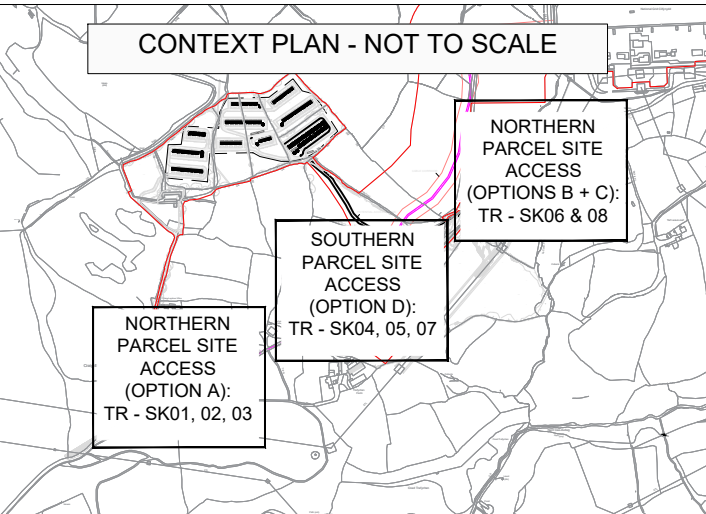
Site Boundary

NOTES:

1. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND SHOULD NOT BE USED FOR COSTING OR CONSTRUCTION. PEGASUS GROUP ACCEPT NO LIABILITY FOR THE MISUSE OF THIS DRAWING FROM ITS INTENDED PURPOSE.
2. THIS DRAWING IS BASED UPON DRAWING 'INDICATIVE BESS LAYOUT - WITH SMA INVERTERS - 200MW' (DRAWING REF: WIN-SOL-02-DR-03-01-01 REV 10) PRODUCED BY WINDEL ENERGY ON 27 JANUARY 2025.



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



B	17.02.2025	UPDATED CLIENT NAME	AJ	JP
A	05.02.2025	UPDATED REDLINE BOUNDARY	AJ	JP
REV	DATE	DESCRIPTION	REVISED BY	APPROVED BY

DRAWING NAME:
SOUTHERN PARCEL ACCESS (D)
SWEPT PATH ANALYSIS - SHEET 1

PROJECT:
LAND NORTH AND SOUTH OF NATIONAL
ROAD, CILFYNYDD

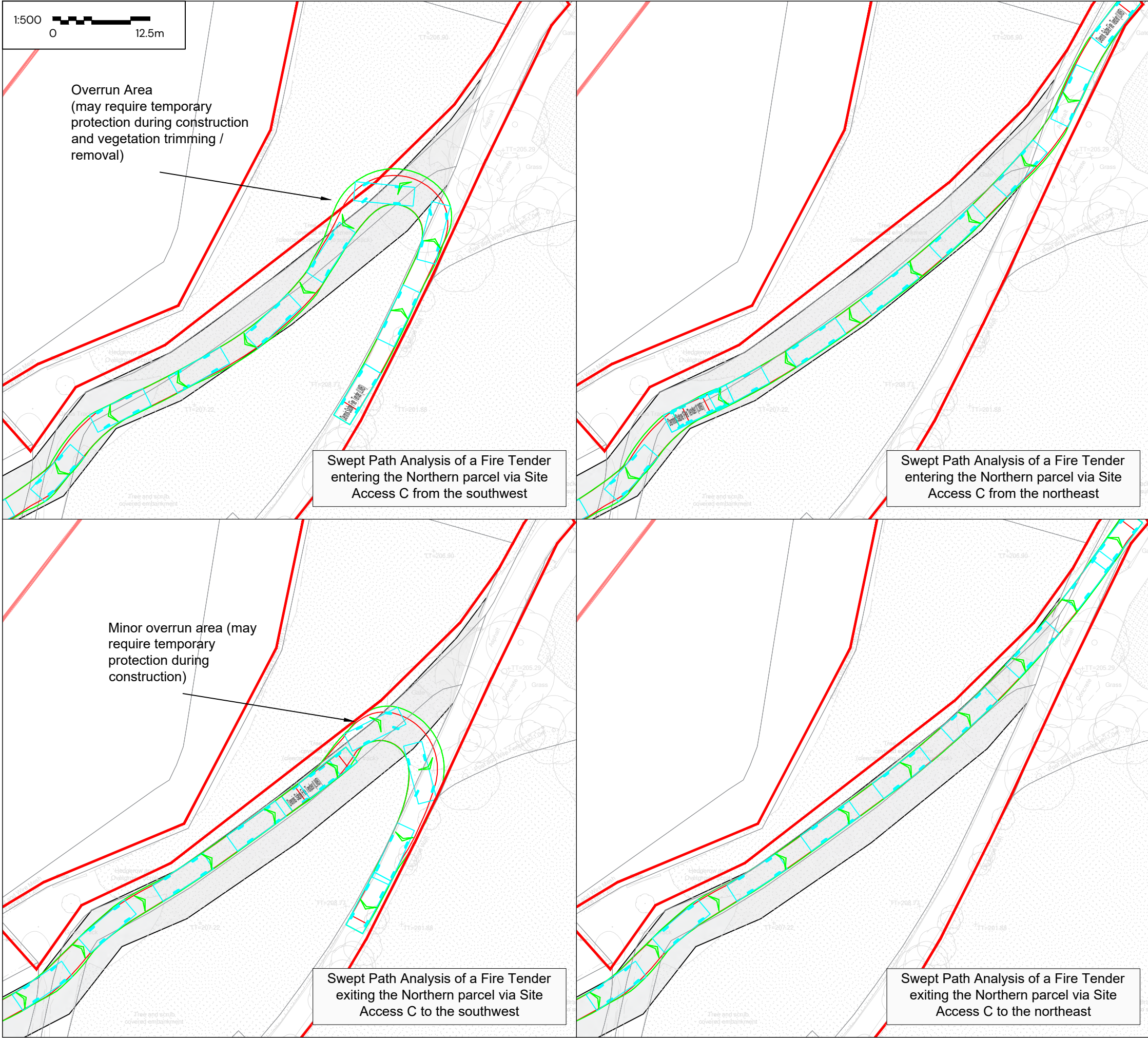
CLIENT:
REWE 2 LIMITED

DATE: 02.10.2023 SCALE: 1:500@A3 DRAWN BY: JMK APPROVED BY: JE

DRAWING NUMBER:
P22-2733-TR-SK07 REV B

PG OFFICE:
BIR





Key:

Site Boundary

NOTES:

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2. THIS DRAWING IS BASED UPON DRAWING 'INDICATIVE BESS LAYOUT - WITH SMA INVERTERS - 200MW' (DRAWING REF: WIN-SOL-02-DR-03-01-01 REV 10) PRODUCED BY WINDEL ENERGY ON 27 JANUARY 2025.

Dennis Sabre Fire Tender (LWB)

Overall Length	7.700m
Overall Width	2.430m
Overall Body Height	3.512m
Min Body Ground Clearance	0.397m
Track Width	2.380m
Lock to lock time	5.00s
Kerb to Kerb Turning Radius	7.400m

CONTEXT PLAN - NOT TO SCALE

NORTHERN PARCEL SITE ACCESS (OPTIONS B + C): TR - SK06 & 08

SOUTHERN PARCEL SITE ACCESS (OPTION D): TR - SK04, 05, 07

NORTHERN PARCEL SITE ACCESS (OPTION A): TR - SK01, 02, 03

A	17.02.2025	UPDATED CLIENT NAME	AJ	JP
REV	DATE	DESCRIPTION	REVISED BY	APPROVED BY

DRAWING NAME:
NORTHERN PARCEL EMERGENCY ACCESS (C)
SWEPTH PATH ANALYSIS OF FIRE TENDER

PROJECT:
LAND NORTH AND SOUTH OF NATIONAL ROAD, CILFYNYDD

CLIENT:
REWE 2 LIMITED

DATE:	SCALE:	DRAWN BY:	APPROVED BY:
05.02.2025	1:500@A3	AJ	JP/KE

DRAWING NUMBER:
P22-2733-TR-SK08 REV A

PG OFFICE:
BIR

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Appendix E – Construction Route Options Plan

Potential Construction Route Options

Key

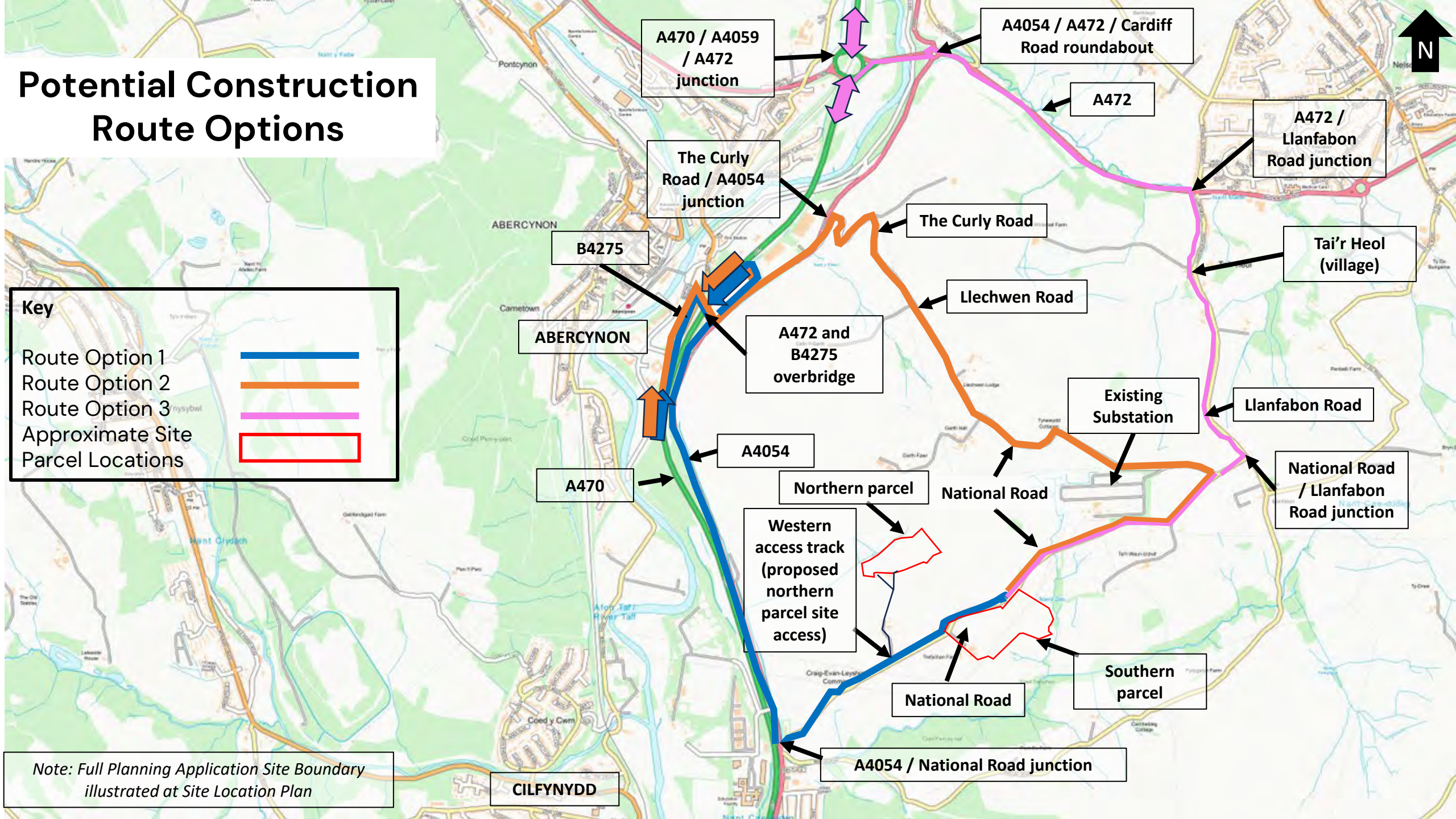
Route Option 1

Route Option 2

Route Option 3

Approximate Site

Parcel Locations



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